

Jena Bioscience

Building Blocks of Life

# Crystal Screens

- › JBScreen Family
- › JBScreen Formulations



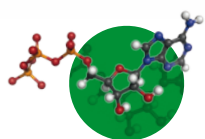
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TTCAGGGAAGAA CTAUAACTGCCAC ACCCAGAAAGGGAA ATAAGC AACG TTCAGGGAAGAA CTAUAACTGCCAC ACCCAGAAAGGGAA  
ACCCAGAAAGGGAA ATAAGC AACG TTCAGGGAAGAA CTAUAACTGCCAC ACCCAGAAAGGGAA ATAAGC AACG TTCAGGGAAGAA

Crystallography

## About us

Established in 1998 by a team of scientists from the Max-Planck-Institute of Molecular Physiology (Dortmund), Jena Bioscience utilizes more than 25 years of academic know-how to develop innovative reagents for clients from both research and industry in 100+ countries. To date, Jena Bioscience still remains an owner-operated business.



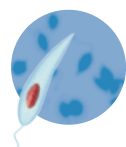
### Nucleotides & Nucleosides

In our chemistry division, we have hundreds of natural and modified nucleotides in stock. In addition, with our pre-made building blocks and in-house expertise we manufacture even the most exotic nucleotide analog from mg to kg scale.



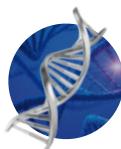
### Click Chemistry, Probes & Epigenetics

Our Probes & Epigenetics as well as Click Chemistry sections offer innovative reagents for the functionalization, conjugation and labeling (fluorophores, haptens) of (bio) molecules complemented by epigenetic modification analysis tools.



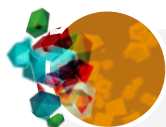
### LEXSY Expression

In the field of recombinant protein production, Jena Bioscience has developed its proprietary LEXSY (Leishmania Expression System) technology. It is based on an S1-classified unicellular organism that combines easy handling with a eukaryotic protein folding and modification machinery. Besides everything you need to establish LEXSY in your lab we also offer custom expression of recombinant proteins.



### Molecular Biology & Proteins

For applications in the field of Molecular Biology we offer a large selection of single reagents, complete kits and optimized master mixes. This section includes products for DNA or RNA purification, amplification and modification with focus on PCR-related techniques.



### Crystallography & Cryo-EM

For the crystallization of biological macromolecules – which is often the bottleneck in determining the 3D-structure of proteins – we offer specialized reagents for **protein stabilization, crystal screening, crystal optimization**, and **phasing** that can reduce the time necessary to obtain a high resolution protein structure from several years to a few days.

For questions regarding **Crystallography** contact me directly

**[Xtals@jenabioscience.com](mailto:Xtals@jenabioscience.com)**

*Christin Reuter*



# Table of contents

## JBScreen Family ..... 4

|                                 |    |
|---------------------------------|----|
| Individual JBScreen Conditions  | 5  |
| JBScreen Classic                | 5  |
| JBScreen Basic                  | 6  |
| JBScreen Membrane               | 6  |
| JBScreen LCP                    | 7  |
| JBScreen Kinase                 | 7  |
| JBScreen Nuc-Pro                | 7  |
| JBScreen PEG/Salt               | 8  |
| JBScreen Pentaerythritol        | 8  |
| JBScreen PACT++                 | 9  |
| JBScreen JCSG ++                | 10 |
| Pi-Screens                      | 10 |
| JBScreen Wizard                 | 11 |
| Crystallization Stock Solutions | 11 |

## Screen Formulations ... 19

|                          |    |
|--------------------------|----|
| JBScreen Classic         | 19 |
| JBScreen Basic           | 24 |
| JBScreen Membrane        | 26 |
| JBScreen LCP             | 28 |
| JBScreen Kinase          | 30 |
| JBScreen Nuc-Pro         | 32 |
| JBScreen PEG/Salt        | 34 |
| JBScreen Pentaerythritol | 36 |
| JBScreen PACT++          | 38 |
| JBScreen JCSG++          | 40 |
| Pi-Screens               | 42 |
| JBScreen Wizard          | 46 |

## Terms and Conditions of Sales .....50

## JBScreen Family

The Crystal Screens of the **JBScreen Family** are designed for efficient and flexible screening of crystallization conditions for soluble proteins, membrane proteins, peptides, nucleic acids, protein-ligand and macromolecular complexes.

The crystallization screens evolved from either published screening strategies/screens (e.g. JBScreen Basic) or compiling successful crystallization conditions of specific protein classes, such as kinases (JBScreen Kinase), membrane proteins (JBScreen Membrane), nucleic acids/protein-nucleic acid complexes (JBScreen Nuc-Pro) or specific crystallization methods (JBScreen LCP).

All JBScreens are free of cacodylate, their formulations are systematically arranged in a gradient format and prepared with great care ensuring elaborate and reproducible crystallization experiments:

- Chemicals used are of MicroSelect grade for Molecular Biology
- Buffers are prepared as 1 M stock solutions, adjusted to the specific pH value
- Final volume is adjusted with >18 MΩcm water
- Solutions are sterile-filtered (0.2 µm filter)
- Formulations are provided online in commonly used file formats: pdf, xls, xml
- Detailed production report includes Lot.# of each compound used in the particular screen for successful refinement



**Figure 2**

JBScreen Bulk: 24 solutions; 10 ml each



**Figure 3**

JBScreen HTS: 96 solutions; 1,7 ml each

Highest quality standards (according to DIN EN ISO 9001 and DIN EN ISO 14001) are combined with individualized customer support. If you wish to receive further information, please contact [xtals@jenabioscience.com](mailto:xtals@jenabioscience.com).



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# Individual JBScreen Conditions

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Individual conditions for reproducing initial hits, crystallization optimization and soaking experiments are available for all screens of the JBScreen Family. The solutions are made from exactly the same chemicals as the conditions in the original screens, are sterile filtered and available in different volumes.

| Product                                                                                                            | Cat.-No.     | Amount |
|--------------------------------------------------------------------------------------------------------------------|--------------|--------|
| <b>Individual JBScreen Condition, 10 ml</b><br>Indicate screen name, Cat.# and condition # when placing the order  | CS-IND-10ML  | 10 ml  |
| <b>Individual JBScreen Condition, 100 ml</b><br>Indicate screen name, Cat.# and condition # when placing the order | CS-IND-100ML | 100 ml |

# JBScreen Classic

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**JBScreen Classic** has become one of the most successful crystal screens on the market. It facilitated determination of hundreds of protein structures, and its citations in the literature increase annually by 30% (please see below for selected recent citations).

JBScreen Classic covers the most prominent precipitants and buffers for protein crystallization within 240 conditions, available as JBScreen Classic 1–10 (10 x 24 conditions; 10 ml each). It is arranged by type and concentration of precipitant allowing extraction of first refinement information: For every hit, the effects of the adjacent conditions are immediately visible.

In the early 2000s the sub-screen JBScreen Classic HTS I & II was introduced in which 48 conditions have been eliminated to provide compatibility with high throughput setups in 96 well plates, available in deep well blocks (2 x 96 conditions; 1,7 ml each).

| Product                                                                        | Cat.-No. | Amount                     |
|--------------------------------------------------------------------------------|----------|----------------------------|
| <b>JBScreen Classic 1</b> (PEG 400 to 3000 based)                              | CS-101L  | 24 solutions (10 ml each)  |
| <b>JBScreen Classic 2</b> (PEG 4000 based)                                     | CS-102L  | 24 solutions (10 ml each)  |
| <b>JBScreen Classic 3</b> (PEG 4000+ based)                                    | CS-103L  | 24 solutions (10 ml each)  |
| <b>JBScreen Classic 4</b> (PEG 5000 MME to 8000 based)                         | CS-104L  | 24 solutions (10 ml each)  |
| <b>JBScreen Classic 5</b> (PEG 8000 to 20000 based)                            | CS-105L  | 24 solutions (10 ml each)  |
| <b>JBScreen Classic 6</b> (Ammonium Sulfate based)                             | CS-106L  | 24 solutions (10 ml each)  |
| <b>JBScreen Classic 7</b> (MPD based)                                          | CS-107L  | 24 solutions (10 ml each)  |
| <b>JBScreen Classic 8</b> (MPD/Alcohol based)                                  | CS-108L  | 24 solutions (10 ml each)  |
| <b>JBScreen Classic 9</b> (Alcohol/Salt based)                                 | CS-109L  | 24 solutions (10 ml each)  |
| <b>JBScreen Classic 10</b> (Salt based)                                        | CS-110L  | 24 solutions (10 ml each)  |
| <b>JBScreen Classic 1–5</b>                                                    | CS-112L  | 5 Kits                     |
| <b>JBScreen Classic 6–10</b>                                                   | CS-113L  | 5 Kits                     |
| <b>JBScreen Classic 1–10</b>                                                   | CS-114L  | 10 Kits                    |
| <b>JBScreen Classic HTS I</b> (PEG based)                                      | CS-201L  | 96 solutions (1.7 ml each) |
| <b>JBScreen Classic HTS II</b> (Ammonium Sulfate, MPD, Alcohol and Salt based) | CS-202L  | 96 solutions (1.7 ml each) |

**Selected Recent Literature Citations of JBScreen Classic**

Songsiririthigul *et al.* (2017) Crystal structure of the N-terminal anticodon-binding domain of the nondiscriminating aspartyl-tRNA synthetase from *Helicobacter pylori*. *Acta Cryst F* **73**:62.  
 McPhail *et al.* (2017) The Molecular Basis of Aichi Virus 3A Protein Activation of Phosphatidylinositol 4 Kinase IIIβ, PI4KB, through ACBD3. *Structure* **25**:121.  
 García Caballero *et al.* (2016) Galectin-related protein: An integral member of the network of chicken galectins 1. From strong sequence conservation of the gene confined to vertebrates to biochemical characteristics of the chicken protein and its crystal structure. *Biochim Biophys Acta*. **1860**:2285.  
 Demmer *et al.* (2015) Insights into Flavin-based Electron Bifurcation via the NADH-dependent Reduced Ferredoxin:NADP Oxidoreductase Structure. *JBC* **290**:21985.  
 Bosshart *et al.* (2015) Directed Divergent Evolution of a Thermostable d-Tagatose Epimerase towards Improved Activity for Two Hexose Substrates. *ChemBioChem* **16**:592.

## JBScreen Basic

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Despite intensive research, the crystallization of biological macromolecules remains a process of trial and error. Nucleation and crystal growth are influenced by the interaction of many variables, such as temperature, pH, precipitant and salt concentration. Testing all possible combinations would be too time consuming and would require enormous amounts of sample. One approach to find suitable crystallization conditions is the sparse-matrix method. This method involves screening with an intentional bias towards conditions which have been proven successful in the crystallization of biological macromolecules.

In 1991, Jancarik and Kim published 50 conditions, which were derived from previously crystallized proteins<sup>[1]</sup>. These and other conditions form the basis of the **JBScreen Basic** system<sup>[1,2]</sup>. However, like in all other JBScreen crystallization kits, we abstained from the use of cacodylate buffers and replaced them with MES. JBScreen Basic contains 96 unique reagent mixtures for screening a wide range of pH and various salts and precipitants.

| Product                   | Cat.-No. | Amount                     |
|---------------------------|----------|----------------------------|
| <b>JBScreen Basic 1</b>   | CS-121   | 24 solutions (10 ml each)  |
| <b>JBScreen Basic 2</b>   | CS-122   | 24 solutions (10 ml each)  |
| <b>JBScreen Basic 3</b>   | CS-123   | 24 solutions (10 ml each)  |
| <b>JBScreen Basic 4</b>   | CS-124   | 24 solutions (10 ml each)  |
| <b>JBScreen Basic 1–4</b> | CS-125   | 4 Kits                     |
| <b>JBScreen Basic HTS</b> | CS-203L  | 96 solutions (1.7 ml each) |

### Selected Literature Citations of JBScreen Basic

Moonens *et al.* (2015) Structural insight in the inhibition of adherence of F4 fimbriae producing enterotoxigenic *Escherichia coli* by llama single domain antibodies. *Veterinary Research* **46**:14.

Zano *et al.* (2014) Structure of an unusual S-adenosylmethionine synthetase from *Campylobacter jejuni*. *Acta Cryst. D* **70**:442.

Goyal *et al.* (2013) Crystallization and preliminary X-ray crystallographic analysis of the curli transporter CsgG. *Acta Cryst. F* **69**:1349.

## JBScreen Membrane

[BUY ONLINE →](#)

**JBScreen Membrane** covers 96 of the most successful conditions for crystallization of membrane proteins. Each individual composition results from an extensive analysis of the crystallization conditions that have yielded membrane protein structures so far.

The JBScreen Membrane crystallization conditions are primarily ordered by type and concentration of the precipitant. This allows easy extraction of all relevant information for a straightforward refinement: Once you get a hit, you immediately see the effects of the neighbouring conditions. The subsequent fine tuning of preliminary hits will be much more efficient.

**JBScreen Detergents** perfectly complement JBScreen Membrane: This combination enables you to screen a broad range of detergents, while concentrating on the most successful crystallization conditions, making crystallization screening of membrane proteins much more efficient and less time consuming.

| Product                                                               | Cat.-No. | Amount                     |
|-----------------------------------------------------------------------|----------|----------------------------|
| <b>JBScreen Membrane 1</b> (PEG 400 to PEG 2000 MME based)            | CS-301L  | 24 solutions (10 ml each)  |
| <b>JBScreen Membrane 2</b> (PEG 2000 MME to PEG 10000 based)          | CS-302L  | 24 solutions (10 ml each)  |
| <b>JBScreen Membrane 3</b> (Ammonium Sulfate, Alcohol and Salt based) | CS-303L  | 24 solutions (10 ml each)  |
| <b>JBScreen Membrane 4</b> (MPD, Salt based)                          | CS-304L  | 24 solutions (10 ml each)  |
| <b>JBScreen Membrane 1 – 4</b>                                        | CS-309   | 4 Kits                     |
| <b>JBScreen Membrane HTS</b>                                          | CS-310   | 96 solutions (1.7 ml each) |
| <b>JBScreen Membrane 1 – 4 &amp; JBScreen Detergents HTS</b>          | CS-308   | 4 + 1 Kits                 |

### Selected Literature Citations of JBScreen Membrane

Kolek *et al.* (2016) A novel microseeding method for the crystallization of membrane proteins in lipidic cubic phase. *Acta Cryst. F* **72**:307.

Tan *et al.* (2014) A conformational landscape for alginate secretion across the outer membrane of *Pseudomonas aeruginosa*. *Acta Cryst. D* **70**:2054.

Li *et al.* (2014) Crystallizing Membrane Proteins in the Lipidic Mesophase. Experience with Human Prostaglandin E2 Synthase 1 and an Evolving Strategy. *Crystal Growth & Design* **14**:2034.

Jacobs *et al.* (2012) Expression, purification and crystallization of the outer membrane lipoprotein GumB from *Xanthomonas campestris*. *Acta Cryst. F* **68**:1255.

Li *et al.* (2011) Crystallizing Membrane Proteins in Lipidic Mesophases. A Host Lipid Screen. *Crystal Growth & Design* **11**(2):530.

## JBScreen LCP

[BUY ONLINE →](#)

**JBScreen LCP** is a crystallization screen designed for efficient screening of crystallization conditions in the Lipidic Cubic Phase (LCP), which has become the method of choice for membrane protein crystallization in different types of LCP lipids.

The 96 conditions of JBScreen LCP result from data mining of 192 integral membrane proteins, that were successfully crystallized by the in meso method and have yielded structures<sup>[3]</sup>. The screen is ordered by type and concentration of the precipitant and is free of cacodylate.

| Product                 | Cat.-No. | Amount                        |
|-------------------------|----------|-------------------------------|
| <b>JBScreen LCP</b>     | CS-340   | 4 x 24 solutions (10 ml each) |
| <b>JBScreen LCP HTS</b> | CS-213L  | 96 solutions (1.7 ml each)    |

## JBScreen Kinase

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**JBScreen Kinase** is a highly specialized screen formulated for the determination of initial crystallization conditions of protein kinases. Through the use of advanced data mining, crystallization conditions of kinases have been identified from published structures. Data evaluation and verification resulted in the formulation of 96 unique reagents, highly effective for the crystallization of kinases. JBScreen Kinase utilizes a variety of different precipitating agents, i.e. various molecular weight PEGs, MPD and Ammonium Sulfate, in combination with buffers covering a pH range from 3,1–10,0 and numerous additives.

| Product                    | Cat.-No. | Amount                     |
|----------------------------|----------|----------------------------|
| <b>JBScreen Kinase 1</b>   | CS-131   | 24 solutions (10 ml each)  |
| <b>JBScreen Kinase 2</b>   | CS-132   | 24 solutions (10 ml each)  |
| <b>JBScreen Kinase 3</b>   | CS-133   | 24 solutions (10 ml each)  |
| <b>JBScreen Kinase 4</b>   | CS-134   | 24 solutions (10 ml each)  |
| <b>JBScreen Kinase 1–4</b> | CS-135   | 4 Kits                     |
| <b>JBScreen Kinase HTS</b> | CS-204L  | 96 solutions (1.7 ml each) |

### Selected Literature Citation of JBScreen Kinase

Yunta *et al.* (2011) SnRK2.6/OST1 from *Arabidopsis thaliana*: cloning, expression, purification, crystallization and preliminary X-ray analysis of K50N and D160A mutants. *Acta Cryst. F* **67(3)**:364.

## JBScreen Nuc-Pro

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**JBScreen Nuc-Pro** is designed to screen for preliminary crystallization conditions of nucleic acids and protein-nucleic acid complexes. The highly effective sparse matrix screen is based upon extensive screening of the PDB, with focus on entries by structural genomic initiatives, the BMCD and other protocols<sup>[4–6]</sup>. Reported crystallization conditions for various RNAs, DNAs as well as protein-nucleic acid complexes were compiled and analyzed for rate of recurrence.

The 96 conditions selected cover a variety of polymers, mono- and divalent metal ions, organics, alcohols and buffers of a pH range from 4,0 to 8,5. The organization of the reagents into individual kits is based upon the main precipitant, i.e. various molecular weight PEGs, Salts, alcohols (MPD and 2-Propanol).

| Product                       | Cat.-No. | Amount                     |
|-------------------------------|----------|----------------------------|
| <b>JBScreen Nuc-Pro 1</b>     | CS-181   | 24 solutions (10 ml each)  |
| <b>JBScreen Nuc-Pro 2</b>     | CS-182   | 24 solutions (10 ml each)  |
| <b>JBScreen Nuc-Pro 3</b>     | CS-183   | 24 solutions (10 ml each)  |
| <b>JBScreen Nuc-Pro 4</b>     | CS-184   | 24 solutions (10 ml each)  |
| <b>JBScreen Nuc-Pro 1 – 4</b> | CS-185   | 4 Kits                     |
| <b>JBScreen Nuc-Pro HTS</b>   | CS-209L  | 96 solutions (1.7 ml each) |

### Selected Literature Citations of JBScreen Nuc-Pro

Yin *et al.* (2017) Impact of cytosine methylation on DNA binding specificities of human transcription factors. *Science* **356** eaaj2239.

Nemchinova *et al.* (2017) An Experimental Tool to Estimate the Probability of a Nucleotide Presence in the Crystal Structures of the Nucleotide–Protein Complexes. *Protein J* DOI:10.1007/s10930-017-9709-y.

Wang *et al.* (2016) Base pairing and structural insights into the 5-formylcytosine in RNA duplex. *Nucleic Acids Research* **44**:4968.

Nikulin *et al.* (2016) Characterization of RNA-binding properties of the archaeal Hfq-like protein from *Methanococcus jannaschii*. *J Biomol Struct Dyn* DOI:10.1080/07391102.2016.1189849.

Morgunova *et al.* (2015) Structural insights into the DNA-binding specificity of E2F family transcription factors. *Nat. Commun.* DOI:10.1038/ncomms10050.

## JBScreen PEG/Salt

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**JBScreen PEG/Salt** is an effective reagent kit designed for initial screening of crystallization conditions of biological macromolecules. It comprises high-purity PEG 3350 and PEG 5000 MME, each combined with 48 different salts, thus covering a range of anions and cations most frequently used in bio-crystallography.

| Product                      | Cat.-No. | Amount                     |
|------------------------------|----------|----------------------------|
| <b>JBScreen PEG/Salt 1</b>   | CS-141   | 24 solutions (10 ml each)  |
| <b>JBScreen PEG/Salt 2</b>   | CS-142   | 24 solutions (10 ml each)  |
| <b>JBScreen PEG/Salt 3</b>   | CS-143   | 24 solutions (10 ml each)  |
| <b>JBScreen PEG/Salt 4</b>   | CS-144   | 24 solutions (10 ml each)  |
| <b>JBScreen PEG/Salt 1–4</b> | CS-145   | 4 Kits                     |
| <b>JBScreen PEG/Salt HTS</b> | CS-205L  | 96 solutions (1.7 ml each) |

### Selected Literature Citations of JBScreen PEG/Salt

Kumar *et al.* (2017) Non-classical transpeptidases yield insight into new antibacterials. *Nat. Chem. Biol.* **13**:54.  
 Chayen *et al.* (2008) Protein crystallization: from purified protein to diffraction-quality crystal. *Nature Methods* **5**:147.

## JBScreen Pentaerythritol

[BUY ONLINE →](#)

**JBScreen Pentaerythritol** has been designed for efficient crystallization screening of biological macromolecules based on pentaerythritol polymers as precipitants. The screen was developed by Ulrike Demmer from the Max-Planck-Institute for Biophysics in Frankfurt. The choice of a suitable precipitant is of crucial importance for the crystallization of proteins. JBScreen Pentaerythritol utilizes two novel precipitating agents, i.e. pentaerythritol propoxylate and pentaerythritol ethoxylate. Both are branched polymers containing a pentaerythritol backbone. Thus they differ from more traditional precipitants like MPD and PEG's in size and nature. In addition, pentaerythritol polymers function as cryoprotectants. Protein crystals grown in concentrations greater than 30% of these precipitants can be frozen directly from the crystallization drop. The successful application of pentaerythritol polymers to yield protein crystals was first described by Gulick *et al.*<sup>[7]</sup>.

Furthermore, this class of precipitants has been used for membrane protein crystallization. The X-ray structure of cbb3 Cytochrome Oxidase was published in Science in 2010. Crystals of this proton pumping membrane protein were successfully grown using pentaerythritol ethoxylate as precipitation agent<sup>[8]</sup>.

JBScreen Pentaerythritol comprises of 96 unique conditions, based on 4 different pentaerythritol polymers as precipitating agent:

- Pentaerythritol propoxylate 426 (5/4 PO/OH)
- Pentaerythritol propoxylate 629 (17/8 PO/OH)
- Pentaerythritol ethoxylate 270 (3/4 EO/OH)
- Pentaerythritol ethoxylate 797 (15/4 EO/OH)

The 4 polymers are arranged to a grid screen, thus allowing screening i) of three different precipitant concentrations, ii) four different pH values and iii) with and without the addition of salts, i.e. magnesium chloride, ammonium sulfate, potassium chloride.

The advantage of JBScreen Pentaerythritol not only lies in the novel 96 conditions but also in the systematic arrangement of the unique reagents, which enables the user to compare individual conditions directly. Even if initial screening may not always yield crystals, valuable information about the protein under investigation can be obtained from the scoring sheet.



| Product                                           | Cat.-No. | Amount                     |
|---------------------------------------------------|----------|----------------------------|
| <b>JBScreen Pentaerythritol 1</b> (PEP 426 based) | CS-191   | 24 solutions (10 ml each)  |
| <b>JBScreen Pentaerythritol 2</b> (PEP 629 based) | CS-192   | 24 solutions (10 ml each)  |
| <b>JBScreen Pentaerythritol 3</b> (PEE 270 based) | CS-193   | 24 solutions (10 ml each)  |
| <b>JBScreen Pentaerythritol 4</b> (PEE 797 based) | CS-194   | 24 solutions (10 ml each)  |
| <b>JBScreen Pentaerythritol 1–4</b>               | CS-195   | 4 Kits                     |
| <b>JBScreen Pentaerythritol HTS</b>               | CS-210L  | 96 solutions (1.7 ml each) |

#### Selected Literature Citations of JBScreen Pentaerythritol

Weidenweber *et al.* (2017) Structure of the acetophenone carboxylase core complex: prototype of a new class of ATP-dependent carboxylases/hydrolases. *Sci. Rep.* **7**:39674.  
 Fujita *et al.* (2017) Identification of the key interactions in structural transition pathway of FtsZ from *Staphylococcus aureus*. *J. Struct. Biol.* DOI 10.1016/j.jsb.2017.04.008.  
 Wagner *et al.* (2016) The methanogenic CO<sub>2</sub> reducing-and-fixing enzyme is bifunctional and contains 46 [4Fe-4S] clusters. *Science* **354**:114.  
 Demmer *et al.* (2015) Insights into Flavin-based Electron Bifurcation via the NADH-dependent Reduced Ferredoxin:NADP Oxidoreductase Structure. *JBC* **290**:21985.  
 Reikittke *et al.* (2015) Structure of the GcpE-HMBPP complex from *Thermus thermophilus*. *Biochem. Biophys. Res. Commun.* **458**:246.

## JBScreen PACT++

[BUY ONLINE →](#)

**JBScreen PACT++** is a crystallization screen facilitating systematic pH, anion- and cation testing in the presence of polyethylene glycol (PEG) based on the work of Newman *et al.*<sup>[9]</sup>.

The 96 unique crystallization conditions combine three mini-screens in one:

1. 24-condition PEG/pH screen
2. 24-condition PEG/cation screen
3. 48-condition PEG/anion screen

This systematic approach aims to alter individual components of the crystallization conditions, i.e. pH, anions and cations, independently from the others in order to obtain more information of the precipitation behaviour of the protein.

When JBScreen PACT++ is used along with JBScreen JCSG++, systematic investigation of the precipitation behaviour of the protein can be combined with a sparse matrix screen in order to enhance the success rate of protein crystallization.

| Product                    | Cat.-No. | Amount                     |
|----------------------------|----------|----------------------------|
| <b>JBScreen PACT++ 1</b>   | CS-161   | 24 solutions (10 ml each)  |
| <b>JBScreen PACT++ 2</b>   | CS-162   | 24 solutions (10 ml each)  |
| <b>JBScreen PACT++ 3</b>   | CS-163   | 24 solutions (10 ml each)  |
| <b>JBScreen PACT++ 4</b>   | CS-164   | 24 solutions (10 ml each)  |
| <b>JBScreen PACT++ 1–4</b> | CS-165   | 4 Kits                     |
| <b>JBScreen PACT++ HTS</b> | CS-207L  | 96 solutions (1.7 ml each) |

## JBScreen JCSG ++

[BUY ONLINE →](#)

**JBScreen JCSG++** is an optimized sparse matrix screen developed by researchers from the Joint Center for Structural Genomics (JCSG)<sup>[10]</sup> and from the European Genomics Consortium<sup>[9]</sup>.

96 reagents have been selected with the aim to maximize the coverage of the crystallization parameter space and to reduce the redundancy of crystallization conditions within commercially available crystallization screens. Thus, a core set of 66 conditions used by the JCSG for high-throughput structural determination<sup>[10]</sup> was extended to 96 screening conditions in order to round off the pH profile and to incorporate different precipitants such as succinate, malonate and formate.

When JBScreen JCSG++ is used along with JBScreen PACT++, the benefits of a sparse matrix screen can be combined with the systematic investigation the precipitation behaviour of the protein.

| Product                    | Cat.-No. | Amount                     |
|----------------------------|----------|----------------------------|
| <b>JBScreen JCSG++ 1</b>   | CS-151   | 24 solutions (10 ml each)  |
| <b>JBScreen JCSG++ 2</b>   | CS-152   | 24 solutions (10 ml each)  |
| <b>JBScreen JCSG++ 3</b>   | CS-153   | 24 solutions (10 ml each)  |
| <b>JBScreen JCSG++ 4</b>   | CS-154   | 24 solutions (10 ml each)  |
| <b>JBScreen JCSG++ 1–4</b> | CS-155   | 4 Kits                     |
| <b>JBScreen JCSG++ HTS</b> | CS-206L  | 96 solutions (1.7 ml each) |

### Selected Literature Citations of JBScreen JCSG++

Kumar *et al.* (2017) Non-classical transpeptidases yield insight into new antibacterials. *Nat. Chem. Biol.* **13**:54.

Cattani *et al.* (2015) Structure of a PEGylated protein reveals a highly porous double-helical assembly. *Nat. Chem.* **7**:823.

Boltis *et al.* (2014) Non-contact Current Transfer Induces the Formation and Improves the X-ray Diffraction Quality of Protein Crystals. *Crystal Growth & Design* **14**:4347.

## Pi-Screens

[BUY ONLINE →](#)

The **Pi-Screens** were developed at the MRC Laboratory of Molecular Biology (Cambridge, UK) for efficient crystallization screening of soluble proteins (Pi-minimal Screen) and integral membrane proteins (Pi-PEG Screen). The approach is based on incomplete factorial design. The unique formulation was generated following a strategy named Pi sampling<sup>[11]</sup> in order to create novel combinations of precipitants, buffers and additives across a standard 96-condition plate layout. Thus, the diversity amongst the crystallization conditions is ideal for initial screening.

The Pi-minimal Screen includes 36 components, i.e. 12 precipitants, 12 buffers systems and 12 salts. Buffers employed in the Pi-minimal screen are buffer systems (acid-base pairs, e.g. HEPES and HEPES sodium salt). Consequently, pH can be adjusted by mixing the high and low pH stock solutions at different ratios during later optimizations. The efficiency of the Pi-minimal Screen was demonstrated by the crystallization of 10 proteins before its commercialization<sup>[11]</sup>.

The Pi-PEG Screen includes various polyethylene glycol mixtures, additives and buffers covering a pH range from 4,0 – 9,5 and hence is suitable for integral membrane proteins as well as for soluble proteins.

The efficiency of the Pi-PEG screen was demonstrated by the crystallization of a G-protein coupled receptor (GPCR) when quality crystals could not be produced with other commercially available screens<sup>[11]</sup>.

| Product                      | Cat.-No. | Amount                        |
|------------------------------|----------|-------------------------------|
| <b>Pi-minimal Screen</b>     | CS-127   | 4 x 24 solutions (10 ml each) |
| <b>Pi-PEG Screen</b>         | CS-128   | 4 x 24 solutions (10 ml each) |
| <b>Pi-minimal Screen HTS</b> | CS-211L  | 96 solutions (1.7 ml each)    |
| <b>Pi-PEG Screen HTS</b>     | CS-212L  | 96 solutions (1.7 ml each)    |

### Selected Literature Citation of Pi-Screens

Gorrec (2016) Protein crystallization screens developed at the MRC Laboratory of Molecular Biology. *Drug Discov. Today* **21**:819.

Ohashi *et al.* (2016) Characterization of Atg38 and NRBF2, a fifth subunit of the autophagic Vps34/PIK3C3 complex. *Autophagy* **12**:2129.

Omari *et al.* (2014) Pushing the limits of sulfur SAD phasing: de novo structure solution of the N-terminal domain of the ectodomain of HCV E1. *Acta Cryst. D* **70**:2197.

## JBScreen Wizard

[BUY ONLINE →](#)

**JBScreen Wizard** is a highly effective random sparse matrix screen for crystallizing proteins, peptides, nucleic acids and macromolecular complexes. A large range of precipitants, buffers and salts allow a broad sampling of crystallization space at pH levels from pH 4,5 to 10,5.

| Product                              | Cat.-No. | Amount                         |
|--------------------------------------|----------|--------------------------------|
| <b>JBScreen Wizard 1</b>             | CS-311   | 48 solutions (10 ml each)      |
| <b>JBScreen Wizard 2</b>             | CS-312   | 48 solutions (10 ml each)      |
| <b>JBScreen Wizard 3</b>             | CS-313   | 48 solutions (10 ml each)      |
| <b>JBScreen Wizard 4</b>             | CS-314   | 48 solutions (10 ml each)      |
| <b>JBScreen Wizard 1 &amp; 2</b>     | CS-315   | 2 Kits                         |
| <b>JBScreen Wizard 3 &amp; 4</b>     | CS-316   | 2 Kits                         |
| <b>JBScreen Wizard 1–4</b>           | CS-317   | 4 Kits                         |
| <b>JBScreen Wizard 1 &amp; 2 HTS</b> | CS-318   | 96 solutions (1.7 ml each)     |
| <b>JBScreen Wizard 3 &amp; 4 HTS</b> | CS-319   | 96 solutions (1.7 ml each)     |
| <b>JBScreen Wizard 1–4 HTS</b>       | CS-320   | 2 x 96 solutions (1.7 ml each) |

### Selected Literature Citation of JBScreen Wizard

Dos Santos *et al.* (2017) Renaissance of protein crystallization and precipitation in biopharmaceuticals purification. *Biotechnol. Adv.* **35**:41.

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- [6] Ke *et al.* (2004) Crystallization of RNA and RNA-protein complexes. *Methods* **34**:408.
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- [11] Gorrec *et al.* (2011) Pi sampling: a methodical and flexible approach to initial macromolecular crystallization screening. *Acta Cryst. D* **67**:463.

## Crystallization Stock Solutions

[BUY ONLINE →](#)

Sterile stock solutions for reproducing and optimizing initial hits.

**Crystallization stock solutions**, i.e. polymers, buffers and salts are ideal for the optimization of your crystallization conditions. Using the same chemicals as utilized in the JBScreens ensures higher reproducibility of your experiments. Crystallization Stock Solutions are ready for use: the concentration is adjusted and they are sterile filtered.

| Polymers                                                              | Cat.-No. | Amount |
|-----------------------------------------------------------------------|----------|--------|
| <b>Pentaerythritol ethoxylate (3/4 EO/OH), 60 % w/v</b><br>PEE 270    | CSS-372  | 100 ml |
| <b>Pentaerythritol ethoxylate (3/4 EO/OH), 100 % v/v</b><br>PEE 270   | CSS-373  | 100 ml |
| <b>Pentaerythritol ethoxylate (15/4 EO/OH), 60 % w/v</b><br>PEE 797   | CSS-374  | 100 ml |
| <b>Pentaerythritol ethoxylate (15/4 EO/OH), 100 % v/v</b><br>PEE 797  | CSS-375  | 100 ml |
| <b>Pentaerythritol propoxylate (17/8 PO/OH), 60 % w/v</b><br>PEP 629  | CSS-376  | 100 ml |
| <b>Pentaerythritol propoxylate (17/8 PO/OH), 100 % v/v</b><br>PEP 629 | CSS-377  | 100 ml |
| <b>Pentaerythritol propoxylate (5/4 PO/OH), 60 % w/v</b><br>PEP 426   | CSS-378  | 100 ml |

| Polymers                                                                 | Cat.-No. | Amount    |
|--------------------------------------------------------------------------|----------|-----------|
| <b>Pentaerythritol propoxylate (5/4 PO/OH), 100 % v/v</b><br>PEP 426     | CSS-379  | 100 ml    |
| <b>Polyethyleneglycol 200, 100 % v/v</b><br>PEG 200                      | CSS-396  | 100 ml    |
| <b>Polyethyleneglycol 300, 100 % v/v</b><br>PEG 300                      | CSS-397  | 100 ml    |
| <b>Polyethyleneglycol 350 Monomethylether, 50 % v/v</b><br>PEG 350 MME   | CSS-381  | 100 ml    |
| <b>Polyethyleneglycol 400, 100 % v/v</b><br>PEG 400                      | CSS-252  | 100 ml    |
| <b>Polyethyleneglycol 550 Monomethylether, 50 % v/v</b><br>PEG 550 MME   | CSS-236  | 100 ml    |
| <b>Polyethyleneglycol 550 Monomethylether, 50 % w/v</b><br>PEG 550 MME   | CSS-237  | 100 ml    |
| <b>Polyethyleneglycol 600, 50 % v/v</b><br>PEG 600                       | CSS-241  | 100 ml    |
| <b>Polyethyleneglycol 600, 50 % w/v</b><br>PEG 600                       | CSS-240  | 100 ml    |
| <b>Polyethyleneglycol 1000, 50 % w/v</b><br>PEG 1000                     | CSS-242  | 100 ml    |
| <b>Polyethyleneglycol 1500, 50 % w/v</b><br>PEG 1500                     | CSS-244  | 100 ml    |
| <b>Polyethyleneglycol 2000, 50 % w/v</b><br>PEG 2000                     | CSS-245  | 100 ml    |
| <b>Polyethyleneglycol 2000 Monomethylether, 50 % w/v</b><br>PEG 2000 MME | CSS-234  | 100 ml    |
| <b>Polyethyleneglycol 3000, 50 % w/v</b><br>PEG 3000                     | CSS-248  | 100 ml    |
| <b>Polyethyleneglycol 3350, 50 % w/v</b><br>PEG 3350                     | CSS-249  | 100 ml    |
| <b>Polyethyleneglycol 4000, 50 % w/v</b><br>PEG 4000                     | CSS-253  | 100 ml    |
| <b>Polyethyleneglycol 5000 Monomethylether, 50 % w/v</b><br>PEG 5000 MME | CSS-235  | 100 ml    |
| <b>Polyethyleneglycol 6000, 50 % w/v</b><br>PEG 6000                     | CSS-255  | 100 ml    |
| <b>Polyethyleneglycol 8000, 50 % w/v</b><br>PEG 8000                     | CSS-256  | 100 ml    |
| <b>Polyethyleneglycol 10000, 50 % w/v</b><br>PEG 10000                   | CSS-243  | 100 ml    |
| <b>Polyethyleneglycol 20000, 50 % w/v</b><br>PEG 20000                   | CSS-246  | 100 ml    |
| <b>Polyethylenimine, 50 % w/v</b>                                        | CSS-257  | 4 x 25 ml |
| <b>Jeffamine M-600, 50 % v/v, pH 7.0</b>                                 | CSS-196  | 100 ml    |
| <b>Jeffamine ED-2001 - 50 % w/v, pH 7.0</b>                              | CSS-406  | 4 x 25 ml |

| Organics                                             | Cat.-No. | Amount    |
|------------------------------------------------------|----------|-----------|
| <b>1,3-Propanediol, 50 % v/v</b>                     | CSS-104  | 100 ml    |
| <b>1,4-Dioxane, 50 % v/v</b>                         | CSS-107  | 4 x 25 ml |
| <b>1,4-Dioxane, 50 % w/v</b>                         | CSS-106  | 4 x 25 ml |
| <b>1,6-Hexanediol, 5 M</b>                           | CSS-109  | 100 ml    |
| <b>2,5-Hexanediol, 8 % v/v</b>                       | CSS-419  | 100 ml    |
| <b>1,4-Butanediol, 50 % v/v</b>                      | CSS-386  | 100 ml    |
| <b>MPD, 100 % v/v</b><br>2-Methyl-2,4-Pentanediol    | CSS-117  | 100 ml    |
| <b>2-Propanol, 100 % v/v</b><br>Iso-Propanol         | CSS-119  | 4 x 25 ml |
| <b>Ethanol, 50 % v/v</b>                             | CSS-330  | 4 x 25 ml |
| <b>Ethylene glycol, 100 % v/v</b>                    | CSS-183  | 100 ml    |
| <b>Glycerol, 100 % v/v</b><br>Glycerin               | CSS-188  | 100 ml    |
| <b>L-Glutathion reduced, 0.16 M</b>                  | CSS-199  | 100 ml    |
| <b>Methanol, 50 % w/v</b>                            | CSS-224  | 4 x 25 ml |
| <b>Propylene Glycol, 50 % v/v</b><br>1,2-Propanediol | CSS-280  | 100 ml    |
| <b>tert-Butanol, 50 % v/v</b>                        | CSS-311  | 4 x 25 ml |
| <b>tert-Butanol, 50 % w/v</b>                        | CSS-310  | 4 x 25 ml |
| <b>Triethyleneglycol, 50 % w/v</b>                   | CSS-314  | 100 ml    |
| Buffers                                              | Cat.-No. | Amount    |
| <b>ADA pH 6.0, 1 M</b>                               | CSS-125  | 100 ml    |
| <b>ADA pH 6.5, 1 M</b>                               | CSS-338  | 100 ml    |
| <b>Bicine pH 8.3, 1 M</b>                            | CSS-383  | 100 ml    |
| <b>Bicine pH 9.0, 1 M</b>                            | CSS-147  | 100 ml    |
| <b>Bicine pH 9.5, 1 M</b>                            | CSS-339  | 100 ml    |
| <b>BIS-TRIS pH 6.5, 1 M</b>                          | CSS-148  | 100 ml    |
| <b>BIS-TRIS pH 7.0, 1 M</b>                          | CSS-340  | 100 ml    |

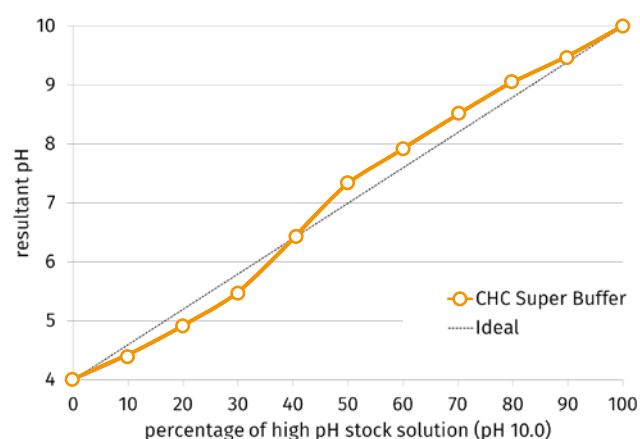
| Buffers                               | Cat.-No. | Amount    |
|---------------------------------------|----------|-----------|
| BIS-TRIS Propane pH 7.0, 1 M          | CSS-149  | 100 ml    |
| CAPS pH 10.0, 1 M                     | CSS-156  | 100 ml    |
| CAPS pH 10.5, 1 M                     | CSS-382  | 100 ml    |
| CHES pH 9.5, 1 M                      | CSS-160  | 100 ml    |
| Citrate/ Phosphate pH 4.4, 1 M        | CSS-161  | 100 ml    |
| Citrate/Phosphate pH 5.0, 1 M         | CSS-341  | 100 ml    |
| Citric Acid pH 3.1, 1 M               | CSS-162  | 100 ml    |
| Citric Acid pH 4.2, 1 M               | CSS-342  | 100 ml    |
| Citric Acid pH 5.0, 1 M               | CSS-343  | 100 ml    |
| Glycine pH 9.5, 1 M                   | CSS-089  | 100 ml    |
| Glycine, 1 M                          | CSS-189  | 100 ml    |
| HEPES pH 6.8, 1 M                     | CSS-409  | 100 ml    |
| HEPES pH 7.5, 1 M                     | CSS-192  | 100 ml    |
| HEPES pH 8.2, 1 M                     | CSS-410  | 100 ml    |
| HEPES, 1 M                            | CSS-360  | 100 ml    |
| Imidazole pH 6.5, 1 M                 | CSS-095  | 4 x 25 ml |
| Imidazole pH 7.0, 1 M                 | CSS-355  | 4 x 25 ml |
| Imidazole pH 7.5, 1 M                 | CSS-344  | 4 x 25 ml |
| Imidazole pH 8.0, 1 M                 | CSS-345  | 4 x 25 ml |
| Imidazole, 1 M                        | CSS-195  | 4 x 25 ml |
| Lithium Acetate Dihydrate pH 7.5, 1 M | CSS-000  | 100 ml    |
| DL-Malic Acid pH 5.5, 1 M             | CSS-197  | 100 ml    |
| MES pH 5.6, 1 M                       | CSS-407  | 100 ml    |
| MES pH 6.5, 1 M                       | CSS-222  | 100 ml    |
| MES pH 6.7, 1 M                       | CSS-408  | 100 ml    |
| MOPS pH 7.0, 1 M                      | CSS-226  | 100 ml    |
| PIPES pH 6.0, 1 M                     | CSS-232  | 100 ml    |
| PIPES pH 7.0, 1 M                     | CSS-347  | 100 ml    |
| Potassium Phosphate pH 8.0, 1 M       | CSS-273  | 100 ml    |
| Sodium Acetate pH 3.6, 1 M            | CSS-411  | 100 ml    |
| Sodium Acetate pH 4.6, 1 M            | CSS-283  | 100 ml    |
| Sodium Acetate pH 5.6, 1 M            | CSS-412  | 100 ml    |
| Sodium Acetate (HCl) pH 3.6, 1 M      | CSS-413  | 100 ml    |

| Buffers                                  | Cat.-No. | Amount |
|------------------------------------------|----------|--------|
| Sodium Acetate (HCl) pH 5.6, 1 M         | CSS-414  | 100 ml |
| tri-Sodium Citrate Dihydrate pH 3.7, 1 M | CSS-415  | 100 ml |
| tri-Sodium Citrate Dihydrate pH 4.8, 1 M | CSS-318  | 100 ml |
| tri-Sodium Citrate Dihydrate pH 5.6, 1 M | CSS-352  | 100 ml |
| Sodium Phosphate pH 6.2, 1 M             | CSS-297  | 100 ml |
| Sodium Phosphate pH 6.7, 1 M             | CSS-348  | 100 ml |
| Sodium Phosphate pH 6.8, 1 M             | CSS-349  | 100 ml |
| Sodium Phosphate pH 7.0, 1 M             | CSS-350  | 100 ml |
| Sodium Potassium Phosphate pH 6.5, 1 M   | CSS-299  | 100 ml |
| Sodium Potassium Phosphate pH 7.5, 1 M   | CSS-351  | 100 ml |
| Succinic Acid, 0.5 M                     | CSS-307  | 100 ml |
| Tricine pH 8.0, 1 M                      | CSS-313  | 100 ml |
| TRIS (TRIS-Acetate) pH 8.0, 1 M          | CSS-337  | 100 ml |
| TRIS pH 7.1, 1 M                         | CSS-417  | 100 ml |
| TRIS pH 7.5, 1 M                         | CSS-320  | 100 ml |
| TRIS pH 8.0, 1 M                         | CSS-353  | 100 ml |
| TRIS pH 8.5, 1 M                         | CSS-354  | 100 ml |
| TRIS pH 9.0, 1 M                         | CSS-418  | 100 ml |

## Super Buffers

Super Buffers screen the pH independently from any other parameter. They are composed of a mixture of three individual buffers with distinct  $pK_a$  values and cover a broad pH range without changing the chemical environment of the buffer solution.

Our Super Buffers are supplied as low and high pH stock solutions, which can be mixed at different ratios to obtain different pH values within the range. Plotting the pH vs. the percentage of high pH stock solution in the mixture results in an almost linear pH function for any JBScreen Super Buffer system.



| Super Buffers     | Cat.-No. | Amount |
|-------------------|----------|--------|
| AAB pH 4.0 - 1 M  | CSS-404  | 100 ml |
| AAB pH 9.0 - 1 M  | CSS-405  | 100 ml |
| CHC pH 4.0 - 1 M  | CSS-402  | 100 ml |
| CHC pH 10.0 - 1 M | CSS-403  | 100 ml |

| Super Buffers     | Cat.-No. | Amount    |
|-------------------|----------|-----------|
| MIB pH 4.0 - 1 M  | CSS-400  | 4 x 25 ml |
| MIB pH 10.0 - 1 M | CSS-401  | 4 x 25 ml |
| MMT pH 4.0 - 1 M  | CSS-398  | 100 ml    |
| MMT pH 9.0 - 1 M  | CSS-399  | 100 ml    |
| PCB pH 4.0 - 1 M  | CSS-387  | 4 x 25 ml |
| PCB pH 9.0 - 1 M  | CSS-388  | 4 x 25 ml |
| SPG pH 4.0 - 1 M  | CSS-389  | 100 ml    |
| SPG pH 10.0 - 1 M | CSS-390  | 100 ml    |
| TBG pH 4.0 - 1 M  | CSS-384  | 100 ml    |
| TBG pH 9.0 - 1 M  | CSS-385  | 100 ml    |

| Salts                                 | Cat.-No. | Amount    |
|---------------------------------------|----------|-----------|
| Ammonium Acetate, 5 M                 | CSS-129  | 100 ml    |
| Ammonium Chloride, 5 M                | CSS-131  | 100 ml    |
| Ammonium dihydrogen Phosphate, 3 M    | CSS-133  | 100 ml    |
| Ammonium Fluoride, 10 M               | CSS-134  | 4 x 25 ml |
| Ammonium Formate, 5 M                 | CSS-136  | 100 ml    |
| Ammonium Iodide, 1 M                  | CSS-137  | 100 ml    |
| Ammonium Nitrate, 10 M                | CSS-138  | 100 ml    |
| Ammonium Sulfate, 4 M                 | CSS-143  | 100 ml    |
| Cadmium Chloride, 1 M                 | CSS-151  | 4 x 25 ml |
| Cadmium Sulfate, 1 M                  | CSS-152  | 4 x 25 ml |
| Calcium Acetate Hydrate, 1 M          | CSS-153  | 100 ml    |
| Calcium Chloride Dihydrate, 5 M       | CSS-155  | 100 ml    |
| Cesium Chloride, 1 M                  | CSS-157  | 100 ml    |
| Cobalt(II) Chloride Hexahydrate, 1 M  | CSS-163  | 4 x 25 ml |
| di-Ammonium hydrogen Phosphate, 3.5 M | CSS-171  | 100 ml    |
| di-Ammonium Tartrate, 2 M             | CSS-172  | 100 ml    |
| di-Potassium hydrogen Phosphate, 1 M  | CSS-391  | 100 ml    |
| di-Sodium hydrogen Phosphate, 1 M     | CSS-392  | 100 ml    |
| Iron (III) Chloride Hexahydrate, 1 M  | CSS-184  | 4 x 25 ml |



| Salts                                    | Cat.-No. | Amount    |
|------------------------------------------|----------|-----------|
| Lithium Acetate Dihydrate, 1 M           | CSS-200  | 100 ml    |
| Lithium Chloride, 10 M                   | CSS-356  | 100 ml    |
| Lithium Citrate Hydrate, 1.5 M           | CSS-203  | 100 ml    |
| Lithium Nitrate, 8 M                     | CSS-204  | 4 x 25 ml |
| Lithium Sulfate, 2.5 M                   | CSS-207  | 100 ml    |
| Magnesium Acetate Tetrahydrate, 1 M      | CSS-210  | 100 ml    |
| Magnesium Chloride Hexahydrate, 1 M      | CSS-211  | 100 ml    |
| Magnesium Formate Dihydrate, 1 M         | CSS-393  | 100 ml    |
| Magnesium Nitrate Hexahydrate, 1 M       | CSS-214  | 100 ml    |
| Magnesium Sulfate Heptahydrate, 2.5 M    | CSS-216  | 100 ml    |
| Nickel Sulfate Hexahydrate, 1 M          | CSS-227  | 4 x 25 ml |
| Nickel(II) Chloride Hexahydrate, 1 M     | CSS-228  | 4 x 25 ml |
| Potassium Acetate, 5 M                   | CSS-262  | 100 ml    |
| Potassium Bromide, 4 M                   | CSS-264  | 100 ml    |
| Potassium Chloride, 4 M                  | CSS-371  | 100 ml    |
| Potassium dihydrogen Phosphate, 1 M      | CSS-268  | 100 ml    |
| Potassium Formate, 10 M                  | CSS-269  | 100 ml    |
| Potassium Iodide, 1 M                    | CSS-270  | 100 ml    |
| Potassium L-Tartrate Monobasic, 0.025 M  | CSS-271  | 100 ml    |
| Potassium Nitrate, 1 M                   | CSS-272  | 4 x 25 ml |
| Potassium Sulfate 0.5 M                  | CSS-275  | 100 ml    |
| Potassium Thiocyanate, 2 M               | CSS-276  | 100 ml    |
| Potassium/Sodium Tartrate-4-hydrate, 2 M | CSS-278  | 100 ml    |
| Sodium Acetate, 2.5 M                    | CSS-284  | 100 ml    |
| Sodium Bromide, 3 M                      | CSS-285  | 100 ml    |
| Sodium Chloride, 5 M                     | CSS-286  | 100 ml    |
| Sodium dihydrogen Phosphate, 1 M         | CSS-394  | 100 ml    |
| Sodium Fluoride, 1 M                     | CSS-290  | 100 ml    |
| Sodium Formate, 5 M                      | CSS-291  | 100 ml    |
| Sodium Iodide, 1 M                       | CSS-293  | 100 ml    |

| Salts                                           | Cat.-No. | Amount    |
|-------------------------------------------------|----------|-----------|
| <b>Sodium Malonate, 2 M</b>                     | CSS-217  | 100 ml    |
| <b>Sodium Nitrate, 7 M</b>                      | CSS-294  | 4 x 25 ml |
| <b>Sodium Sulfate, 1 M</b>                      | CSS-300  | 100 ml    |
| <b>Sodium Tartrate dibasic Dihydrate, 1 M</b>   | CSS-301  | 100 ml    |
| <b>Sodium Thiocyanate, 8 M</b>                  | CSS-303  | 100 ml    |
| <b>tri-Potassium Citrate Monohydrate, 2.5 M</b> | CSS-266  | 100 ml    |
| <b>tri-Sodium Citrate Dihydrate, 1.6 M</b>      | CSS-319  | 100 ml    |
| <b>Zinc Acetate Dihydrate, 1 M</b>              | CSS-324  | 4 x 25 ml |
| <b>Zinc Chloride, 1 M</b>                       | CSS-325  | 4 x 25 ml |
| <b>Zinc Sulfate Heptahydrate, 1 M</b>           | CSS-326  | 4 x 25 ml |

# Screen Formulations

## JBScreen Classic

| Classic 1 |       | Precipitant            | Buffer*                       | Additive                   |
|-----------|-------|------------------------|-------------------------------|----------------------------|
| bulk      | HTS I |                        |                               |                            |
| 1/A1      | A1    | 15 % w/v PEG 400       | 100 mM Sodium acetate; pH 4.6 | 100 mM Calcium chloride    |
| 1/A2      | —     | 15 % w/v PEG 400       | 100 mM MES; pH 6.5            | none                       |
| 1/A3      | A2    | 15 % w/v PEG 400       | 100 mM HEPES; pH 7.5          | 200 mM Magnesium chloride  |
| 1/A4      | —     | 15 % w/v PEG 400       | 100 mM TRIS; pH 8.5           | 200 mM tri-Sodium citrate  |
| 1/A5      | A3    | 25 % w/v PEG 400       | 100 mM Sodium acetate; pH 4.6 | 100 mM Magnesium chloride  |
| 1/A6      | A4    | 25 % w/v PEG 400       | 100 mM TRIS; pH 8.5           | 200 mM Lithium sulfate     |
| 1/B1      | —     | 28 % w/v PEG 400       | 100 mM HEPES; pH 7.5          | 200 mM Calcium chloride    |
| 1/B2      | A5    | 30 % w/v PEG 400       | 100 mM Sodium acetate; pH 4.6 | 100 mM Calcium chloride    |
| 1/B3      | A6    | 30 % w/v PEG 400       | 100 mM MES; pH 6.5            | 100 mM Sodium acetate      |
| 1/B4      | —     | 30 % w/v PEG 400       | 100 mM MES; pH 6.5            | 100 mM Magnesium chloride  |
| 1/B5      | A7    | 30 % w/v PEG 400       | 100 mM HEPES; pH 7.5          | 200 mM Magnesium chloride  |
| 1/B6      | A8    | 30 % w/v PEG 400       | 100 mM TRIS; pH 8.5           | 200 mM tri-Sodium citrate  |
| 1/C1      | A9    | 30 % w/v PEG 550 MME   | 100 mM BICINE; pH 9.0         | 100 mM Sodium chloride     |
| 1/C2      | A10   | 25 % w/v PEG 550 MME   | 100 mM MES; pH 6.5            | 10 mM Zinc sulfate         |
| 1/C3      | A11   | 25 % w/v PEG 1,000     | 100 mM HEPES; pH 7.5          | none                       |
| 1/C4      | A12   | 30 % w/v PEG 1,000     | 100 mM TRIS; pH 8.5           | none                       |
| 1/C5      | B1    | 15 % w/v PEG 1,500     | none                          | none                       |
| 1/C6      | B2    | 20 % w/v PEG 1,500     | 100 mM HEPES; pH 7.5          | none                       |
| 1/D1      | B3    | 30 % w/v PEG 1,500     | none                          | none                       |
| 1/D2      | B4    | 20 % w/v PEG 2,000 MME | 100 mM TRIS; pH 8.5           | 10 mM Nickel (II) chloride |
| 1/D3      | B5    | 25 % w/v PEG 2,000 MME | none                          | none                       |
| 1/D4      | —     | 30 % w/v PEG 2,000 MME | 100 mM MES; pH 6.5            | 100 mM Sodium acetate      |
| 1/D5      | B6    | 20 % w/v PEG 3,000     | 100 mM HEPES; pH 7.5          | 200 mM Sodium acetate      |
| 1/D6      | B7    | 30 % w/v PEG 3,000     | 100 mM TRIS; pH 8.5           | 200 mM Lithium sulfate     |

| Classic 2 |       | Precipitant        | Buffer*                       | Additive                  |
|-----------|-------|--------------------|-------------------------------|---------------------------|
| bulk      | HTS I |                    |                               |                           |
| 2/A1      | B8    | 4 % w/v PEG 4,000  | 100 mM Sodium acetate; pH 4.6 | none                      |
| 2/A2      | B9    | 8 % w/v PEG 4,000  | none                          | none                      |
| 2/A3      | B10   | 8 % w/v PEG 4,000  | 100 mM Sodium acetate; pH 4.6 | none                      |
| 2/A4      | B11   | 10 % w/v PEG 4,000 | 100 mM MES; pH 6.5            | 200 mM Magnesium chloride |
| 2/A5      | B12   | 12 % w/v PEG 4,000 | 100 mM HEPES; pH 7.5          | 100 mM Sodium acetate     |
| 2/A6      | —     | 12 % w/v PEG 4,000 | 100 mM TRIS; pH 8.5           | none                      |
| 2/B1      | C1    | 16 % w/v PEG 4,000 | 100 mM TRIS; pH 8.5           | 200 mM Lithium sulfate    |
| 2/B2      | C2    | 16 % w/v PEG 4,000 | 100 mM TRIS; pH 8.5           | 200 mM Sodium acetate     |
| 2/B3      | —     | 16 % w/v PEG 4,000 | 100 mM TRIS; pH 8.5           | 200 mM Magnesium chloride |
| 2/B4      | C3    | 18 % w/v PEG 4,000 | 100 mM Sodium acetate; pH 4.6 | none                      |
| 2/B5      | C4    | 20 % w/v PEG 4,000 | 100 mM TRIS; pH 8.5           | 200 mM Lithium sulfate    |
| 2/B6      | C5    | 20 % w/v PEG 4,000 | 100 mM TRIS; pH 8.5           | 200 mM Calcium chloride   |
| 2/C1      | —     | 22 % w/v PEG 4,000 | 100 mM HEPES; pH 7.5          | 100 mM Sodium acetate     |
| 2/C2      | C6    | 25 % w/v PEG 4,000 | 100 mM Sodium acetate; pH 4.6 | none                      |
| 2/C3      | C7    | 25 % w/v PEG 4,000 | 100 mM MES; pH 6.5            | 200 mM Magnesium chloride |
| 2/C4      | C8    | 25 % w/v PEG 4,000 | 100 mM TRIS; pH 8.5           | 200 mM Calcium chloride   |
| 2/C5      | C9    | 30 % w/v PEG 4,000 | none                          | none                      |
| 2/C6      | C10   | 30 % w/v PEG 4,000 | 100 mM Sodium acetate; pH 4.6 | 100 mM Magnesium chloride |
| 2/D1      | —     | 30 % w/v PEG 4,000 | 100 mM MES; pH 6.5            | none                      |
| 2/D2      | C11   | 30 % w/v PEG 4,000 | 100 mM HEPES; pH 7.5          | 200 mM Calcium chloride   |
| 2/D3      | —     | 30 % w/v PEG 4,000 | 100 mM TRIS; pH 8.5           | 200 mM Lithium sulfate    |
| 2/D4      | C12   | 30 % w/v PEG 4,000 | 100 mM TRIS; pH 8.5           | 200 mM Sodium acetate     |
| 2/D5      | D1    | 30 % w/v PEG 4,000 | 100 mM TRIS; pH 8.5           | 200 mM Magnesium chloride |
| 2/D6      | D2    | 35 % w/v PEG 4,000 | none                          | none                      |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

| Classic 3 |       | Precipitant 1      | Precipitant 2           | Buffer*                           | Additive                      |
|-----------|-------|--------------------|-------------------------|-----------------------------------|-------------------------------|
| bulk      | HTS I |                    |                         |                                   |                               |
| 3/A1      | D3    | 8 % w/v PEG 4,000  | 800 mM Lithium chloride | 100 mM TRIS; pH 8.5               | none                          |
| 3/A2      | D4    | 10 % w/v PEG 4,000 | 20 % w/v 2-Propanol     | none                              | none                          |
| 3/A3      | D5    | 10 % w/v PEG 4,000 | 10 % w/v 2-Propanol     | 100 mM tri-Sodium citrate; pH 5.6 | none                          |
| 3/A4      | —     | 10 % w/v PEG 4,000 | 5 % w/v 2-Propanol      | 100 mM HEPES; pH 7.5              | none                          |
| 3/A5      | D6    | 10 % w/v PEG 4,000 | 20 % w/v 2-Propanol     | 100 mM HEPES; pH 7.5              | none                          |
| 3/A6      | D7    | 12 % w/v PEG 4,000 | none                    | 100 mM Sodium acetate; pH 4.6     | 200 mM Ammonium sulfate       |
| 3/B1      | —     | 15 % w/v PEG 4,000 | none                    | none                              | 200 mM Ammonium sulfate       |
| 3/B2      | D8    | 15 % w/v PEG 4,000 | none                    | 100 mM tri-Sodium citrate; pH 5.6 | 200 mM Ammonium sulfate       |
| 3/B3      | D9    | 16 % w/v PEG 4,000 | 10 % w/v 2-Propanol     | 100 mM HEPES; pH 7.5              | 200 mM Ammonium sulfate       |
| 3/B4      | D10   | 20 % w/v PEG 4,000 | none                    | none                              | 200 mM Ammonium sulfate       |
| 3/B5      | D11   | 20 % w/v PEG 4,000 | 10 % w/v Glycerol       | none                              | 200 mM Magnesium sulfate      |
| 3/B6      | —     | 20 % w/v PEG 4,000 | 5 % w/v 2-Propanol      | none                              | 100 mM tri-Sodium citrate     |
| 3/C1      | D12   | 20 % w/v PEG 4,000 | 20 % w/v 2-Propanol     | none                              | 100 mM tri-Sodium citrate     |
| 3/C2      | E1    | 20 % w/v PEG 4,000 | none                    | 100 mM MES; pH 6.5                | 600 mM Sodium chloride        |
| 3/C3      | E2    | 20 % w/v PEG 4,000 | 10 % w/v 2-Propanol     | 100 mM HEPES; pH 7.5              | none                          |
| 3/C4      | E3    | 22 % w/v PEG 4,000 | none                    | none                              | 100 mM Sodium acetate, 200 mM |
| 3/C5      | —     | 25 % w/v PEG 4,000 | none                    | 100 mM Sodium acetate; pH 4.6     | 200 mM Ammonium sulfate       |
| 3/C6      | E4    | 25 % w/v PEG 4,000 | none                    | 100 mM tri-Sodium citrate; pH 5.6 | 200 mM Ammonium sulfate       |
| 3/D1      | E5    | 25 % w/v PEG 4,000 | 200 mM Lithium sulfate  | 100 mM HEPES; pH 7.5              | 100 mM Sodium acetate         |
| 3/D2      | E6    | 25 % w/v PEG 4,000 | 8 % w/v 2-Propanol      | none                              | 100 mM Sodium acetate         |
| 3/D3      | E7    | 30 % w/v PEG 4,000 | none                    | none                              | 200 mM Ammonium sulfate       |
| 3/D4      | —     | 30 % w/v PEG 4,000 | none                    | 100 mM Sodium acetate; pH 4.6     | 200 mM Ammonium sulfate       |
| 3/D5      | E8    | 30 % w/v PEG 4,000 | none                    | 100 mM tri-Sodium citrate; pH 5.6 | 100 mM Ammonium sulfate       |
| 3/D6      | E9    | 32 % w/v PEG 4,000 | none                    | 100 mM TRIS; pH 8.5               | 800 mM Lithium chloride       |

| Classic 4 |       | Precipitant 1          | Precipitant 2            | Buffer*                 | Additive                     |
|-----------|-------|------------------------|--------------------------|-------------------------|------------------------------|
| bulk      | HTS I |                        |                          |                         |                              |
| 4/A1      | E10   | 25 % w/v PEG 5,000 MME | none                     | 100 mM TRIS; pH 8.5     | 200 mM Lithium sulfate       |
| 4/A2      | E11   | 30 % w/v PEG 5,000 MME | none                     | 100 mM MES; pH 6.5      | 200 mM Ammonium sulfate      |
| 4/A3      | E12   | 3 % w/v PEG 6,000      | none                     | 100 mM TRIS; pH 8.5     | 100 mM Potassium chloride    |
| 4/A4      | F1    | 10 % w/v PEG 6,000     | none                     | none                    | 10 mM Magnesium chloride     |
| 4/A5      | F2    | 12 % w/v PEG 6,000     | 2 M Sodium chloride      | none                    | none                         |
| 4/A6      | F3    | 15 % w/v PEG 6,000     | 5 % w/v Glycerol         | none                    | none                         |
| 4/B1      | F4    | 15 % w/v PEG 6,000     | 50 mM Potassium chloride | none                    | 10 mM Magnesium chloride     |
| 4/B2      | —     | 16 % w/v PEG 6,000     | none                     | none                    | 10 mM tri-Sodium citrate     |
| 4/B3      | F5    | 20 % w/v PEG 6,000     | none                     | 50 mM Imidazole; pH 8.0 | none                         |
| 4/B4      | F6    | 25 % w/v PEG 6,000     | none                     | 100 mM HEPES; pH 7.5    | 100 mM Lithium chloride      |
| 4/B5      | F7    | 28 % w/v PEG 6,000     | 500 mM Lithium chloride  | 100 mM TRIS; pH 8.5     | none                         |
| 4/B6      | F8    | 30 % w/v PEG 6,000     | 1 M Lithium chloride     | none                    | 100 mM Sodium acetate        |
| 4/C1      | —     | 33 % w/v PEG 6,000     | none                     | none                    | 10 mM tri-Sodium citrate     |
| 4/C2      | F9    | 2 % w/v PEG 8,000      | 500 mM Lithium sulfate   | none                    | none                         |
| 4/C3      | F10   | 2 % w/v PEG 8,000      | 1 M Lithium sulfate      | none                    | none                         |
| 4/C4      | F11   | 4 % w/v PEG 8,000      | none                     | none                    | none                         |
| 4/C5      | F12   | 8 % w/v PEG 8,000      | 200 mM Lithium chloride  | none                    | 50 mM Magnesium sulfate      |
| 4/C6      | —     | 8 % w/v PEG 8,000      | none                     | 100 mM TRIS; pH 8.5     | none                         |
| 4/D1      | G1    | 10 % w/v PEG 8,000     | none                     | 100 mM MES; pH 6.5      | 200 mM Zinc acetate          |
| 4/D2      | G2    | 10 % w/v PEG 8,000     | none                     | 100 mM HEPES; pH 7.5    | 200 mM Calcium acetate       |
| 4/D3      | G3    | 10 % w/v PEG 8,000     | none                     | none                    | 100 mM Sodium acetate, 50 mM |
| 4/D4      | G4    | 10 % w/v PEG 8,000     | none                     | none                    | 200 mM Magnesium acetate     |
| 4/D5      | G5    | 10 % w/v PEG 8,000     | 10 % w/v Ethylene glycol | 100 mM HEPES; pH 7.5    | none                         |
| 4/D6      | —     | 10 % w/v PEG 8,000     | 10 % w/v PEG 1,000       | none                    | none                         |

| Classic 5 |       | Precipitant 1       | Precipitant 2          | Buffer*                       | Additive                                          |
|-----------|-------|---------------------|------------------------|-------------------------------|---------------------------------------------------|
| bulk      | HTS I |                     |                        |                               |                                                   |
| 5/A1      | —     | 12 % w/v PEG 8,000  | 5 % w/v Glycerol       | none                          | 100 mM Potassium chloride                         |
| 5/A2      | G6    | 12 % w/v PEG 8,000  | 10 % w/v Glycerol      | none                          | 500 mM Potassium chloride                         |
| 5/A3      | G7    | 15 % w/v PEG 8,000  | none                   | none                          | 200 mM Ammonium sulfate                           |
| 5/A4      | G8    | 15 % w/v PEG 8,000  | 500 mM Lithium sulfate | none                          | none                                              |
| 5/A5      | G9    | 15 % w/v PEG 8,000  | none                   | 100 mM MES; pH 6.5            | 200 mM Sodium acetate                             |
| 5/A6      | —     | 15 % w/v PEG 8,000  | none                   | none                          | 100 mM tri-Sodium citrate, 50 mM Ammonium sulfate |
| 5/B1      | G10   | 18 % w/v PEG 8,000  | none                   | 100 mM HEPES; pH 7.5          | 200 mM Calcium acetate                            |
| 5/B2      | G11   | 18 % w/v PEG 8,000  | 2 % w/v 2-Propanol     | 100 mM HEPES; pH 7.5          | 100 mM Sodium acetate                             |
| 5/B3      | G12   | 18 % w/v PEG 8,000  | none                   | 100 mM TRIS; pH 8.5           | 200 mM Lithium sulfate                            |
| 5/B4      | —     | 20 % w/v PEG 8,000  | none                   | 100 mM HEPES; pH 7.5          | none                                              |
| 5/B5      | H1    | 20 % w/v PEG 8,000  | none                   | 100 mM MES; pH 6.5            | 200 mM Magnesium acetate                          |
| 5/B6      | H2    | 20 % w/v PEG 8,000  | none                   | 100 mM CHES; pH 9.5           | none                                              |
| 5/C1      | —     | 22 % w/v PEG 8,000  | none                   | 100 mM MES; pH 6.5            | 200 mM Ammonium sulfate                           |
| 5/C2      | H3    | 25 % w/v PEG 8,000  | none                   | none                          | 200 mM Lithium chloride                           |
| 5/C3      | H4    | 30 % w/v PEG 8,000  | none                   | none                          | 200 mM Ammonium sulfate                           |
| 5/C4      | H5    | 8 % w/v PEG 10,000  | none                   | 100 mM Sodium acetate; pH 4.6 | none                                              |
| 5/C5      | H6    | 14 % w/v PEG 10,000 | none                   | 100 mM Imidazole; pH 8.0      | none                                              |
| 5/C6      | —     | 16 % w/v PEG 10,000 | none                   | 100 mM TRIS; pH 8.5           | none                                              |
| 5/D1      | H7    | 18 % w/v PEG 10,000 | 20 % w/v Glycerol      | 100 mM TRIS; pH 8.5           | 100 mM Sodium chloride                            |
| 5/D2      | H8    | 20 % w/v PEG 10,000 | none                   | 100 mM HEPES; pH 7.5          | none                                              |
| 5/D3      | H8    | 30 % w/v PEG 10,000 | none                   | 100 mM TRIS; pH 8.5           | none                                              |
| 5/D4      | H10   | 10 % w/v PEG 20,000 | none                   | 100 mM MES; pH 6.5            | none                                              |
| 5/D5      | H11   | 17 % w/v PEG 20,000 | none                   | 100 mM TRIS; pH 8.5           | 100 mM Magnesium chloride                         |
| 5/D6      | H12   | 20 % w/v PEG 20,000 | none                   | none                          | none                                              |

| Classic 6 |        | Precipitant 1           | Precipitant 2           | Buffer*                       | Additive                  |
|-----------|--------|-------------------------|-------------------------|-------------------------------|---------------------------|
| bulk      | HTS II |                         |                         |                               |                           |
| 6/A1      | A1     | 500 mM Ammonium sulfate | 1 M Lithium sulfate     | none                          | 100 mM tri-Sodium citrate |
| 6/A2      | —      | 1 M Ammonium sulfate    | none                    | none                          | none                      |
| 6/A3      | A2     | 1 M Ammonium sulfate    | none                    | 100 mM Sodium acetate; pH 4.6 | none                      |
| 6/A4      | A3     | 1 M Ammonium sulfate    | 2 % w/v PEG 400         | 100 mM HEPES; pH 7.5          | none                      |
| 6/A5      | A4     | 1 M Ammonium sulfate    | none                    | 100 mM TRIS; pH 8.5           | none                      |
| 6/A6      | A5     | 1.2 M Ammonium sulfate  | 3 % w/v 2-Propanol      | none                          | 50 mM tri-Sodium citrate  |
| 6/B1      | A6     | 1.5 M Ammonium sulfate  | 15 % w/v Glycerol       | 100 mM TRIS; pH 8.5           | none                      |
| 6/B2      | —      | 1.6 M Ammonium sulfate  | 500 mM Lithium chloride | none                          | none                      |
| 6/B3      | A7     | 1.6 M Ammonium sulfate  | 1 M Lithium sulfate     | none                          | none                      |
| 6/B4      | A8     | 1.6 M Ammonium sulfate  | none                    | 100 mM HEPES; pH 7.5          | 200 mM Sodium chloride    |
| 6/B5      | A9     | 1.6 M Ammonium sulfate  | 2 % w/v PEG 1,000       | 100 mM HEPES; pH 7.5          | none                      |
| 6/B6      | A10    | 1.8 M Ammonium sulfate  | none                    | 100 mM MES; pH 6.5            | none                      |
| 6/C1      | A11    | 2 M Ammonium sulfate    | 2 M Sodium chloride     | none                          | none                      |
| 6/C2      | A12    | 2 M Ammonium sulfate    | none                    | 100 mM Sodium acetate; pH 4.6 | none                      |
| 6/C3      | B1     | 2 M Ammonium sulfate    | 5 % w/v PEG 400         | 100 mM MES; pH 6.5            | none                      |
| 6/C4      | B2     | 2 M Ammonium sulfate    | none                    | 100 mM TRIS; pH 8.5           | none                      |
| 6/C5      | —      | 2.2 M Ammonium sulfate  | none                    | none                          | none                      |
| 6/C6      | B3     | 2.2 M Ammonium sulfate  | 20 % w/v Glycerol       | none                          | none                      |
| 6/D1      | B4     | 2.4 M Ammonium sulfate  | none                    | none                          | 100 mM tri-Sodium citrate |
| 6/D2      | B5     | 3 M Ammonium sulfate    | 1 % w/v MPD             | none                          | none                      |
| 6/D3      | B6     | 3 M Ammonium sulfate    | 10 % w/v Glycerol       | none                          | none                      |
| 6/D4      | B7     | 3.5 M Ammonium sulfate  | none                    | 100 mM HEPES; pH 7.5          | none                      |
| 6/D5      | B8     | 3.5 M Ammonium sulfate  | 1 % w/v MPD             | 100 mM MES; pH 6.5            | none                      |
| 6/D6      | —      | 3.5 M Ammonium sulfate  | none                    | none                          | none                      |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

| Classic 7 |        | Precipitant 1 | Precipitant 2               | Buffer*                           | Additive                  |
|-----------|--------|---------------|-----------------------------|-----------------------------------|---------------------------|
| bulk      | HTS II |               |                             |                                   |                           |
| 7/A1      | B9     | 10 % w/v MPD  | none                        | 100 mM HEPES; pH 7.5              | 100 mM tri-Sodium citrate |
| 7/A2      | B10    | 12 % w/v MPD  | none                        | 100 mM TRIS; pH 8.5               | 50 mM Magnesium chloride  |
| 7/A3      | —      | 15 % w/v MPD  | none                        | 100 mM Sodium acetate; pH 4.6     | 20 mM Calcium chloride    |
| 7/A4      | B11    | 15 % w/v MPD  | 5 % w/v PEG 4,000           | 100 mM Imidazole; pH 8.0          | none                      |
| 7/A5      | B12    | 15 % w/v MPD  | none                        | 100 mM tri-Sodium citrate; pH 5.6 | 200 mM Ammonium acetate   |
| 7/A6      | —      | 15 % w/v MPD  | none                        | 100 mM MES; pH 6.5                | 200 mM Magnesium acetate  |
| 7/B1      | C1     | 15 % w/v MPD  | none                        | 100 mM HEPES; pH 7.5              | 200 mM tri-Sodium citrate |
| 7/B2      | C2     | 20 % w/v MPD  | none                        | 100 mM HEPES; pH 7.5              | 100 mM tri-Sodium citrate |
| 7/B3      | C3     | 20 % w/v MPD  | none                        | 100 mM Imidazole; pH 8.0          | none                      |
| 7/B4      | C4     | 20 % w/v MPD  | 4 % w/v Glycerol            | none                              | 200 mM Sodium chloride    |
| 7/B5      | C5     | 30 % w/v MPD  | none                        | 100 mM Sodium acetate; pH 4.6     | 20 mM Calcium chloride    |
| 7/B6      | C6     | 30 % w/v MPD  | none                        | 100 mM tri-Sodium citrate; pH 5.6 | 200 mM Ammonium acetate   |
| 7/C1      | —      | 30 % w/v MPD  | none                        | 100 mM MES; pH 6.5                | 200 mM Magnesium acetate  |
| 7/C2      | C7     | 30 % w/v MPD  | none                        | 100 mM HEPES; pH 7.5              | 500 mM Ammonium sulfate   |
| 7/C3      | C8     | 30 % w/v MPD  | none                        | 100 mM HEPES; pH 7.5              | 200 mM tri-Sodium citrate |
| 7/C4      | —      | 30 % w/v MPD  | 5 % w/v PEG 4,000           | 100 mM HEPES; pH 7.5              | none                      |
| 7/C5      | C9     | 30 % w/v MPD  | 10 % w/v PEG 4,000          | 100 mM Imidazole; pH 8.0          | none                      |
| 7/C6      | C10    | 30 % w/v MPD  | 20 % w/v Ethanol            | none                              | none                      |
| 7/D1      | —      | 35 % w/v MPD  | none                        | none                              | none                      |
| 7/D2      | C11    | 35 % w/v MPD  | none                        | 100 mM Imidazole; pH 8.0          | none                      |
| 7/D3      | C12    | 40 % w/v MPD  | none                        | 100 mM TRIS; pH 8.5               | none                      |
| 7/D4      | D1     | 47 % w/v MPD  | none                        | 100 mM HEPES; pH 7.5              | none                      |
| 7/D5      | D2     | 47 % w/v MPD  | 2 % w/v 2-Methyl-2-propanol | none                              | none                      |
| 7/D6      | D3     | 50 % w/v MPD  | none                        | none                              | none                      |

| Classic 8 |        | Precipitant 1      | Precipitant 2       | Buffer*                       | Additive                                    |
|-----------|--------|--------------------|---------------------|-------------------------------|---------------------------------------------|
| bulk      | HTS II |                    |                     |                               |                                             |
| 8/A1      | —      | 50 % w/v MPD       | 15 % w/v Ethanol    | none                          | 10 mM Sodium acetate                        |
| 8/A2      | D4     | 50 % w/v MPD       | 20 % w/v 2-Propanol | none                          | 50 mM Sodium acetate, 50 mM Sodium chloride |
| 8/A3      | D5     | 50 % w/v MPD       | none                | 100 mM TRIS; pH 8.5           | 100 mM Ammonium di-hydrogen phosphate       |
| 8/A4      | D6     | 55 % w/v MPD       | none                | none                          | none                                        |
| 8/A5      | D7     | 60 % w/v MPD       | none                | 100 mM Sodium acetate; pH 4.6 | 10 mM Cadmium chloride                      |
| 8/A6      | —      | 60 % w/v MPD       | none                | none                          | 20 mM Sodium acetate                        |
| 8/B1      | D8     | 70 % w/v MPD       | none                | 100 mM MES; pH 6.5            | none                                        |
| 8/B2      | D9     | 70 % w/v MPD       | none                | 100 mM TRIS; pH 8.5           | none                                        |
| 8/B3      | D10    | 20 % w/v Methanol  | none                | 100 mM TRIS; pH 8.5           | 10 mM Calcium chloride                      |
| 8/B4      | D11    | 2 % w/v Ethanol    | none                | 100 mM TRIS; pH 8.5           | none                                        |
| 8/B5      | —      | 5 % w/v Ethanol    | 5 % w/v MPD         | 100 mM HEPES; pH 7.5          | none                                        |
| 8/B6      | D12    | 5 % w/v Ethanol    | 5 % w/v MPD         | 100 mM TRIS; pH 8.5           | 200 mM Sodium chloride                      |
| 8/C1      | E1     | 10 % w/v Ethanol   | none                | 100 mM TRIS; pH 8.5           | none                                        |
| 8/C2      | E2     | 12 % w/v Ethanol   | 4 % w/v PEG 400     | 100 mM Sodium acetate; pH 4.6 | none                                        |
| 8/C3      | E3     | 14 % w/v Ethanol   | 5 % w/v Glycerol    | 100 mM TRIS; pH 8.5           | none                                        |
| 8/C4      | E4     | 18 % w/v Ethanol   | none                | 100 mM TRIS; pH 8.5           | none                                        |
| 8/C5      | —      | 20 % w/v Ethanol   | none                | none                          | none                                        |
| 8/C6      | E5     | 20 % w/v Ethanol   | 10 % w/v Glycerol   | none                          | none                                        |
| 8/D1      | E6     | 30 % w/v Ethanol   | 10 % w/v PEG 6,000  | none                          | 10 mM Sodium acetate                        |
| 8/D2      | E7     | 45 % w/v Ethanol   | none                | none                          | none                                        |
| 8/D3      | E8     | 50 % w/v Ethanol   | none                | none                          | 10 mM Sodium acetate                        |
| 8/D4      | E9     | 60 % w/v Ethanol   | 1.5 % w/v PEG 6,000 | none                          | 50 mM Sodium acetate                        |
| 8/D5      | E10    | 60 % w/v Ethanol   | none                | none                          | 100 mM Sodium chloride                      |
| 8/D6      | —      | 2 % w/v 2-Propanol | none                | 100 mM TRIS; pH 8.5           | 10 mM Magnesium sulfate                     |

| Classic 9 |        | Precipitant                           | Buffer*                           | Additive                  |
|-----------|--------|---------------------------------------|-----------------------------------|---------------------------|
| bulk      | HTS II |                                       |                                   |                           |
| 9/A1      | E11    | 5 % w/v 2-Propanol                    | 100 mM HEPES; pH 7.5              | none                      |
| 9/A2      | E12    | 10 % w/v 2-Propanol                   | 100 mM Sodium acetate; pH 4.6     | 200 mM Calcium chloride   |
| 9/A3      | F1     | 10 % w/v 2-Propanol                   | 100 mM HEPES; pH 7.5              | 200 mM tri-Sodium citrate |
| 9/A4      | F2     | 10 % w/v 2-Propanol                   | 100 mM TRIS; pH 8.5               | 10 mM Magnesium chloride  |
| 9/A5      | —      | 12 % w/v 2-Propanol                   | 100 mM TRIS; pH 8.5               | 50 mM Sodium chloride     |
| 9/A6      | F3     | 15 % w/v 2-Propanol                   | 100 mM MES; pH 6.5                | 200 mM tri-Sodium citrate |
| 9/B1      | —      | 15 % w/v 2-Propanol                   | 100 mM HEPES; pH 7.5              | 200 mM tri-Sodium citrate |
| 9/B2      | F4     | 15 % w/v 2-Propanol                   | 100 mM HEPES; pH 7.5              | 200 mM Magnesium chloride |
| 9/B3      | F5     | 15 % w/v 2-Propanol                   | 100 mM TRIS; pH 8.5               | 200 mM Ammonium acetate   |
| 9/B4      | F6     | 20 % w/v 2-Propanol                   | 100 mM Sodium acetate; pH 4.6     | 200 mM Calcium chloride   |
| 9/B5      | —      | 20 % w/v 2-Propanol                   | 100 mM HEPES; pH 7.5              | 200 mM tri-Sodium citrate |
| 9/B6      | F7     | 25 % w/v 2-Propanol                   | 100 mM HEPES; pH 7.5              | 100 mM Magnesium chloride |
| 9/C1      | F8     | 30 % w/v 2-Propanol                   | 100 mM MES; pH 6.5                | 200 mM tri-Sodium citrate |
| 9/C2      | —      | 30 % w/v 2-Propanol                   | 100 mM HEPES; pH 7.5              | 200 mM Magnesium chloride |
| 9/C3      | F9     | 30 % w/v 2-Propanol                   | 100 mM TRIS; pH 8.5               | 200 mM Ammonium acetate   |
| 9/C4      | F10    | 25 % w/v 2-Methyl-2-propanol          | 100 mM TRIS; pH 8.5               | 100 mM Calcium chloride   |
| 9/C5      | F11    | 35 % w/v 2-Methyl-2-propanol          | 100 mM tri-Sodium citrate; pH 5.6 | none                      |
| 9/C6      | F12    | 200 mM Ammonium di-hydrogen phosphate | none                              | none                      |
| 9/D1      | G1     | 200 mM Potassium Sodium tartrate      | none                              | none                      |
| 9/D2      | G2     | 200 mM Magnesium acetate              | none                              | none                      |
| 9/D3      | G3     | 400 mM Ammonium di-hydrogen phosphate | none                              | none                      |
| 9/D4      | —      | 400 mM Potassium Sodium tartrate      | none                              | none                      |
| 9/D5      | G4     | 400 mM Potassium Sodium tartrate      | 100 mM TRIS; pH 8.5               | none                      |
| 9/D6      | G5     | 500 mM Ammonium di-hydrogen phosphate | none                              | 200 mM tri-Sodium citrate |

| Classic 10 |        | Precipitant 1                      | Precipitant 2     | Buffer*                           | Additive                   |
|------------|--------|------------------------------------|-------------------|-----------------------------------|----------------------------|
| bulk       | HTS II |                                    |                   |                                   |                            |
| 10/A1      | G6     | 500 mM Sodium acetate              | None              | 100 mM Imidazole; pH 8.0          | none                       |
| 10/A2      | G7     | 700 mM tri-Sodium citrate          | None              | 100 mM HEPES; pH 7.5              | none                       |
| 10/A3      | —      | 700 mM Lithium sulfate             | None              | 100 mM TRIS; pH 8.5               | none                       |
| 10/A4      | G8     | 800 mM Potassium Sodium tartrate   | None              | 100 mM HEPES; pH 7.5              | none                       |
| 10/A5      | G9     | 1 M Ammonium di-hydrogen phosphate | None              | 100 mM tri-Sodium citrate; pH 5.6 | none                       |
| 10/A6      | G10    | 1 M Ammonium di-hydrogen phosphate | None              | 100 mM TRIS; pH 8.5               | none                       |
| 10/B1      | G11    | 1 M Lithium sulfate                | None              | 100 mM TRIS; pH 8.5               | 10 mM Nickel (II) chloride |
| 10/B2      | G12    | 1 M Sodium acetate                 | None              | 100 mM Imidazole; pH 8.0          | none                       |
| 10/B3      | —      | 1 M Sodium formate                 | None              | 100 mM Sodium acetate; pH 4.6     | none                       |
| 10/B4      | H1     | 1.4 M Sodium acetate               | None              | 100 mM MES; pH 6.5                | none                       |
| 10/B5      | —      | 1.4 M tri-Sodium citrate           | None              | 100 mM HEPES; pH 7.5              | none                       |
| 10/B6      | H2     | 1.5 M Lithium sulfate              | None              | 100 mM TRIS; pH 8.5               | none                       |
| 10/C1      | H3     | 1.5 M tri-Sodium citrate; pH 6.5   | None              | none                              | none                       |
| 10/C2      | H4     | 1.6 M Magnesium sulfate            | None              | 100 mM MES; pH 6.5                | none                       |
| 10/C3      | H5     | 1.6 M Potassium Sodium tartrate    | None              | 100 mM MES; pH 6.5                | none                       |
| 10/C4      | H6     | 2 M Ammonium formate               | None              | 100 mM MES; pH 6.5                | none                       |
| 10/C5      | H7     | 2 M Ammonium di-hydrogen phosphate | None              | 100 mM TRIS; pH 8.5               | none                       |
| 10/C6      | —      | 2 M Sodium formate                 | None              | none                              | none                       |
| 10/D1      | —      | 2 M Magnesium chloride             | None              | 100 mM TRIS; pH 8.5               | none                       |
| 10/D2      | H8     | 2 M Sodium chloride                | None              | 100 mM MES; pH 6.5                | 200 mM Sodium acetate      |
| 10/D3      | H9     | 2 M Sodium formate                 | None              | 100 mM Sodium acetate; pH 4.6     | none                       |
| 10/D4      | H10    | 1 M Ammonium di-hydrogen phosphate | 30 % w/v Glycerol | 100 mM TRIS; pH 8.5               | none                       |
| 10/D5      | H11    | 4 M Sodium chloride                | None              | 100 mM HEPES; pH 7.5              | none                       |
| 10/D6      | H12    | 3 M Sodium formate                 | None              | none                              | none                       |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

## JBScreen Basic

| <b>Basic 1</b> |                                |                         |                                   |                                       |
|----------------|--------------------------------|-------------------------|-----------------------------------|---------------------------------------|
| No.            | Precipitant 1                  | Precipitant 2           | Buffer*                           | Additive                              |
| A1             | 25 % v/v Ethylene glycol       | none                    | none                              | none                                  |
| A2             | 12 % v/v Glycerol              | 1.5 M Ammonium sulfate  | 100 mM TRIS; pH 8.5               | none                                  |
| A3             | 1 M 1,6-Hexanediol             | none                    | 100 mM Sodium acetate; pH 4.6     | 10 mM Cobalt (II) chloride            |
| A4             | 2.5 M 1,6-Hexanediol           | none                    | 100 mM tri-Sodium citrate; pH 5.6 | none                                  |
| A5             | 3.4 M 1,6-Hexanediol           | none                    | 100 mM TRIS; pH 8.5               | 200 mM Magnesium chloride             |
| A6             | 30 % v/v MPD                   | none                    | 100 mM Sodium acetate; pH 4.6     | 200 mM Sodium chloride                |
| A7             | 30 % v/v MPD                   | none                    | 100 mM tri-Sodium citrate; pH 5.6 | 200 mM Ammonium acetate               |
| A8             | 30 % v/v MPD                   | none                    | 100 mM Sodium acetate; pH 4.6     | 20 mM Calcium chloride                |
| A9             | 30 % v/v MPD                   | 500 mM Ammonium sulfate | 100 mM HEPES; pH 7.5              | none                                  |
| A10            | 30 % v/v MPD                   | none                    | 100 mM HEPES; pH 7.5              | 200 mM tri-Sodium citrate             |
| A11            | 50 % v/v MPD                   | none                    | 100 mM TRIS; pH 8.5               | 200 mM Ammonium di-hydrogen phosphate |
| A12            | 70 % v/v MPD                   | none                    | 100 mM HEPES; pH 7.5              | none                                  |
| B1             | 2 % w/v Ethylene imine polymer | none                    | 100 mM tri-Sodium citrate; pH 5.6 | 500 mM Sodium chloride                |
| B2             | 2 % v/v PEG 400                | 2 M Ammonium sulfate    | 100 mM HEPES; pH 7.5              | none                                  |
| B3             | 28 % v/v PEG 400               | none                    | 100 mM HEPES; pH 7.5              | 200 mM Calcium chloride               |
| B4             | 30 % v/v PEG 400               | none                    | 100 mM TRIS; pH 8.5               | 200 mM tri-Sodium citrate             |
| B5             | 30 % v/v PEG 400               | none                    | 100 mM HEPES; pH 7.5              | 200 mM Magnesium chloride             |
| B6             | 30 % v/v PEG 400               | none                    | 100 mM Sodium acetate; pH 4.6     | 100 mM Calcium chloride               |
| B7             | 20 % v/v PEG 550 MME           | none                    | 100 mM BICINE; pH 9.5             | 100 mM Sodium chloride                |
| B8             | 25 % v/v PEG 550 MME           | none                    | 100 mM MES; pH 6.5                | 10 mM Zinc sulfate                    |
| B9             | 10 % w/v PEG 1,000             | 10 % w/v PEG 8,000      | none                              | none                                  |
| B10            | 30 % w/v PEG 1,500             | none                    | none                              | none                                  |
| B11            | 20 % w/v PEG 2,000 MME         | none                    | 100 mM TRIS; pH 8.5               | 10 mM Nickel (II) chloride            |
| B12            | 30 % w/v PEG 2,000 MME         | none                    | 100 mM Sodium acetate; pH 4.6     | 200 mM Ammonium sulfate               |
| <b>Basic 2</b> |                                |                         |                                   |                                       |
| No.            | Precipitant 1                  | Precipitant 2           | Buffer*                           | Additive                              |
| C1             | 8 % w/v PEG 4,000              | none                    | 100 mM Sodium acetate; pH 4.6     | none                                  |
| C2             | 20 % w/v PEG 4,000             | 20 % v/v 2-Propanol     | 100 mM tri-Sodium citrate; pH 5.6 | none                                  |
| C3             | 20 % w/v PEG 4,000             | 10 % v/v 2-Propanol     | 100 mM HEPES; pH 7.5              | none                                  |
| C4             | 25 % w/v PEG 4,000             | none                    | 100 mM Sodium acetate; pH 4.6     | 200 mM Ammonium sulfate               |
| C5             | 30 % w/v PEG 4,000             | none                    | none                              | 200 mM Ammonium sulfate               |
| C6             | 30 % w/v PEG 4,000             | none                    | 100 mM Sodium acetate; pH 4.6     | 200 mM Ammonium acetate               |
| C7             | 30 % w/v PEG 4,000             | none                    | 100 mM tri-Sodium citrate; pH 5.6 | 200 mM Ammonium acetate               |
| C8             | 30 % w/v PEG 4,000             | none                    | 100 mM TRIS; pH 8.5               | 200 mM Sodium acetate                 |
| C9             | 30 % w/v PEG 4,000             | none                    | 100 mM TRIS; pH 8.5               | 200 mM Lithium sulfate                |
| C10            | 30 % w/v PEG 4,000             | none                    | 100 mM TRIS; pH 8.5               | 200 mM Magnesium chloride             |
| C11            | 30 % w/v PEG 5,000 MME         | none                    | 100 mM MES; pH 6.5                | 200 mM Ammonium sulfate               |
| C12            | 10 % w/v PEG 6,000             | 2 M Sodium chloride     | none                              | none                                  |
| D1             | 10 % w/v PEG 6,000             | 5 % v/v MPD             | 100 mM HEPES; pH 7.5              | none                                  |
| D2             | 2 % w/v PEG 8,000              | 1 M Lithium sulfate     | none                              | none                                  |
| D3             | 8 % w/v PEG 8,000              | none                    | 100 mM TRIS; pH 8.5               | none                                  |
| D4             | 10 % w/v PEG 8,000             | 8 % v/v Ethylene glycol | 100 mM HEPES; pH 7.5              | none                                  |
| D5             | 15 % w/v PEG 8,000             | 500 mM Lithium sulfate  | none                              | none                                  |
| D6             | 18 % w/v PEG 8,000             | none                    | 100 mM MES; pH 6.5                | 200 mM Calcium acetate                |
| D7             | 18 % w/v PEG 8,000             | none                    | 100 mM MES; pH 6.5                | 200 mM Zinc acetate                   |
| D8             | 20 % w/v PEG 8,000             | none                    | none                              | 50 mM Potassium di-hydrogen phosphate |
| D9             | 20 % w/v PEG 8,000             | none                    | 100 mM MES; pH 6.5                | 200 mM Magnesium acetate              |
| D10            | 30 % w/v PEG 8,000             | none                    | 100 mM MES; pH 6.5                | 200 mM Sodium acetate                 |
| D11            | 30 % w/v PEG 8,000             | none                    | none                              | 200 mM Ammonium sulfate               |
| D6             | 30 % w/v PEG 8,000             | none                    | 100 mM MES; pH 6.5                | 200 mM Ammonium sulfate               |





## JBScreen Membrane

| Membrane 1 | Precipitant 1          | Precipitant 2          | Buffer*                                     | Additive                                             |
|------------|------------------------|------------------------|---------------------------------------------|------------------------------------------------------|
| No.        |                        |                        |                                             |                                                      |
| A1         | 15 % w/v PEG 400       | 15 % w/v Glycerol      | 100 mM HEPES; pH 7.5                        | 200 mM Calcium chloride                              |
| A2         | 20 % w/v PEG 400       | 100 mM Sodium chloride | 100 mM tri-Sodium citrate; pH 5.6           | 20 mM Magnesium chloride                             |
| A3         | 25 % w/v PEG 400       | none                   | 50 mM Sodium acetate; pH 4.6                | 50 mM Magnesium acetate                              |
| A4         | 30 % w/v PEG 400       | 50 mM Sodium sulfate   | 50 mM TRIS; pH 8.5                          | 50 mM Lithium sulfate                                |
| A5         | 48 % w/v PEG 400       | none                   | 100 mM HEPES; pH 7.5                        | 200 mM Calcium chloride                              |
| A6         | 20 % w/v PEG 550 MME   | none                   | 10 mM TRIS; pH 7.5                          | none                                                 |
| A7         | 30 % w/v PEG 550 MME   | none                   | 50 mM TRIS; pH 8.5                          | 100 mM Magnesium chloride                            |
| A8         | 35 % w/v PEG 600       | none                   | none                                        | none                                                 |
| A9         | 28 % w/v PEG 1,000     | 10 % w/v Glycerol      | 100 mM TRICINE; pH 8.0                      | 350 mM Sodium chloride                               |
| A10        | 10 % w/v PEG 1,500     | 5 % w/v Ethanol        | none                                        | 100 mM Magnesium chloride,<br>100 mM Sodium chloride |
| A11        | 30 % w/v PEG 1,500     | none                   | none                                        | none                                                 |
| A12        | 5 % w/v PEG 2,000      | none                   | none                                        | none                                                 |
| B1         | 10 % w/v PEG 2,000     | none                   | 100 mM TRIS; pH 8.5                         | 500 mM Magnesium chloride                            |
| B2         | 15 % w/v PEG 2,000     | none                   | none                                        | none                                                 |
| B3         | 15 % w/v PEG 2,000     | none                   | none                                        | 100 mM Lithium chloride                              |
| B4         | 15 % w/v PEG 2,000     | none                   | 100 mM di-Sodium hydrogen phosphate; pH 6.2 | 20 mM tri-Sodium citrate                             |
| B5         | 15 % w/v PEG 2,000     | none                   | 100 mM di-Sodium hydrogen phosphate; pH 6.8 | 500 mM Sodium chloride                               |
| B6         | 15 % w/v PEG 2,000     | none                   | 20 mM BIS-TRIS; pH 7.0                      | none                                                 |
| B7         | 15 % w/v PEG 2,000     | none                   | 50 mM HEPES; pH 7.5                         | 100 mM Magnesium chloride                            |
| B8         | 20 % w/v PEG 2,000     | 2 % w/v MPD            | 100 mM TRIS; pH 8.0                         | 300 mM Magnesium nitrate                             |
| B9         | 25 % w/v PEG 2,000     | 15 % w/v Glycerol      | 100 mM BICINE; pH 9.0                       | 300 mM Magnesium chloride                            |
| B10        | 30 % w/v PEG 2,000     | none                   | 200 mM di-Sodium hydrogen phosphate; pH 6.2 | 500 mM Sodium chloride                               |
| B11        | 8 % w/v PEG 2,000 MME  | none                   | 100 mM Sodium acetate; pH 4.6               | none                                                 |
| B12        | 10 % w/v PEG 2,000 MME | 20 % w/v Glycerol      | 100 mM tri-Sodium citrate; pH 5.6           | 3 % w/v PEG 200                                      |

| Membrane 2 | Precipitant 1          | Precipitant 2       | Buffer*                                     | Additive                              |
|------------|------------------------|---------------------|---------------------------------------------|---------------------------------------|
| No.        |                        |                     |                                             |                                       |
| C1         | 12 % w/v PEG 2,000 MME | none                | 50 mM TRIS; pH 8.5                          | 500 mM Sodium chloride                |
| C2         | 10 % w/v PEG 3,350     | none                | 50 mM tri-Sodium citrate; pH 5.6            | 150 mM Sodium chloride                |
| C3         | 2 % w/v PEG 4,000      | none                | 50 mM TRIS; pH 7.5                          | none                                  |
| C4         | 5 % w/v PEG 4,000      | none                | none                                        | none                                  |
| C5         | 5 % w/v PEG 4,000      | none                | none                                        | 100 mM Potassium chloride             |
| C6         | 5 % w/v PEG 4,000      | 10 % w/v Glycerol   | 50 mM MES; pH 6.5                           | 100 mM Sodium chloride                |
| C7         | 5 % w/v PEG 4,000      | none                | 50 mM di-Sodium hydrogen phosphate; pH 6.7  | none                                  |
| C8         | 10 % w/v PEG 4,000     | none                | 50 mM TRIS; pH 8.5                          | 500 mM Sodium chloride                |
| C9         | 12 % w/v PEG 4,000     | none                | 100 mM ADA; pH 6.5                          | 100 mM Lithium sulfate                |
| C10        | 12 % w/v PEG 4,000     | none                | 50 mM di-Sodium hydrogen phosphate; pH 6.8  | none                                  |
| C11        | 12 % w/v PEG 4,000     | 20 % w/v Glycerol   | 50 mM MOPS; pH 7.0                          | 500 mM Potassium chloride             |
| C12        | 15 % w/v PEG 4,000     | none                | 10 mM TRIS; pH 7.5                          | 100 mM Lithium chloride               |
| D1         | 20 % w/v PEG 4,000     | none                | 100 mM BIS-TRIS; pH 7.0                     | 500 mM Sodium chloride                |
| D2         | 20 % w/v PEG 4,000     | none                | 100 mM di-Sodium hydrogen phosphate; pH 7.0 | 500 mM Sodium chloride                |
| D3         | 20 % w/v PEG 4,000     | 150 mM Zinc acetate | 50 mM TRIS; pH 7.5                          | 50 mM Zinc chloride                   |
| D4         | 22 % w/v PEG 4,000     | none                | 50 mM TRICINE; pH 8.0                       | none                                  |
| D5         | 22 % w/v PEG 4,000     | none                | 50 mM TRIS; pH 8.5                          | 500 mM Sodium chloride                |
| D6         | 30 % w/v PEG 4,000     | none                | none                                        | none                                  |
| D7         | 10 % w/v PEG 5,000 MME | none                | 100 mM tri-Sodium citrate; pH 5.6           | 100 mM Magnesium acetate              |
| D8         | 5 % w/v PEG 6,000      | none                | none                                        | 100 mM Magnesium sulfate              |
| D9         | 10 % w/v PEG 6,000     | 150 mM Zinc acetate | 50 mM TRIS; pH 7.5                          | 50 mM Zinc chloride                   |
| D10        | 15 % w/v PEG 6,000     | none                | 50 mM di-Sodium succinate; pH 6.5           | none                                  |
| D11        | 12 % w/v PEG 8,000     | 10 % w/v MPD        | none                                        | 25 mM Potassium di-hydrogen phosphate |
| D12        | 8 % w/v PEG 10,000     | none                | 100 mM tri-Sodium citrate; pH 5.6           | 100 mM Magnesium acetate              |

| Membrane 3 | Precipitant 1                      | Precipitant 2         | Buffer*                                       | Additive                                |
|------------|------------------------------------|-----------------------|-----------------------------------------------|-----------------------------------------|
| No.        |                                    |                       |                                               |                                         |
| E1         | 700 mM Ammonium sulfate            | none                  | 1 M Sodium Potassium phosphate; pH 7.5        | none                                    |
| E2         | 1 M Ammonium sulfate               | none                  | 50 mM MES; pH 6.5                             | 100 mM Zinc acetate                     |
| E3         | 1.2 M Ammonium sulfate             | none                  | 50 mM TRIS; pH 7.5                            | none                                    |
| E4         | 1.2 M Ammonium sulfate             | none                  | 100 mM TRIS; pH 8.5                           | none                                    |
| E5         | 1.4 M Ammonium sulfate             | 4 % w/v 2-Propanol    | none                                          | 100 mM Ammonium acetate                 |
| E6         | 2 M Ammonium sulfate               | none                  | none                                          | none                                    |
| E7         | 2 M Ammonium sulfate               | none                  | 100 mM tri-Sodium citrate; pH 5.6             | none                                    |
| E8         | 2.5 M Ammonium sulfate             | 2 % w/v PEG 5,000 MME | 100 mM HEPES; pH 7.5                          | none                                    |
| E9         | 3 M Ammonium sulfate               | none                  | none                                          | none                                    |
| E10        | 3.5 M Ammonium sulfate             | none                  | none                                          | none                                    |
| E11        | 3.5 M Ammonium sulfate             | none                  | 50 mM Sodium Potassium phosphate; pH 7.5      | 250 mM Sodium chloride                  |
| E12        | 25 % w/v MPD                       | none                  | 100 mM BIS-TRIS; pH 7.0                       | none                                    |
| F1         | 25 % w/v MPD                       | none                  | 300 mM tri-Sodium citrate; pH 5.6             | none                                    |
| F2         | 25 % w/v Triethylene glycol        | none                  | none                                          | 100 mM Glycine, 100 mM Ammonium sulfate |
| F3         | 30 % w/v 2-Propanol                | 20 % w/v Glycerol     | 100 mM Sodium acetate; pH 4.6                 | 200 mM Calcium chloride                 |
| F4         | none                               | none                  | 50 mM di-Potassium hydrogen phosphate; pH 8.0 | none                                    |
| F5         | none                               | none                  | 100 mM tri-Sodium citrate; pH 4.8             | none                                    |
| F6         | none                               | none                  | 1 M di-Potassium hydrogen phosphate; pH 6.5   | 1 % w/v 1,4-Dioxane                     |
| F7         | 1 M tri-Sodium citrate             | none                  | none                                          | none                                    |
| F8         | 1 M tri-Sodium citrate             | none                  | none                                          | 500 mM Lithium chloride                 |
| F9         | 1.5 M Sodium chloride              | none                  | 100 mM Sodium acetate; pH 4.6                 | none                                    |
| F10        | none                               | none                  | 1.5 M di-Potassium hydrogen phosphate; pH 7.0 | none                                    |
| F11        | 1.5 M Lithium sulfate              | none                  | 100 mM HEPES; pH 7.5                          | none                                    |
| F12        | 2 M Sodium chloride                | none                  | none                                          | 100 mM Sodium formate                   |
| Membrane 4 | Precipitant                        |                       | Buffer*                                       | Additive                                |
| No.        |                                    |                       |                                               |                                         |
| G1         | 12 % w/v MPD                       |                       | 100 mM Sodium acetate; pH 4.6                 | 100 mM Sodium chloride                  |
| G2         | 4 % w/v MPD                        |                       | 100 mM tri-Sodium citrate; pH 5.6             | 100 mM Magnesium chloride               |
| G3         | 12 % w/v MPD                       |                       | 100 mM ADA; pH 6.5                            | none                                    |
| G4         | 12 % w/v MPD                       |                       | 100 mM HEPES; pH 7.5                          | 100 mM tri-Sodium citrate               |
| G5         | 12 % w/v MPD                       |                       | 100 mM TRIS; pH 8.5                           | 100 mM Lithium sulfate                  |
| G6         | 1 M tri-Sodium citrate             |                       | 100 mM HEPES; pH 7.5                          | none                                    |
| G7         | 200 mM Lithium sulfate             |                       | 100 mM TRIS; pH 8.5                           | none                                    |
| G8         | 100 mM Sodium chloride             |                       | 100 mM tri-Sodium citrate; pH 5.6             | none                                    |
| G9         | 100 mM Sodium chloride             |                       | 100 mM TRIS; pH 8.5                           | none                                    |
| G10        | 1 M Ammonium di-hydrogen phosphate |                       | 100 mM Sodium acetate; pH 4.6                 | 100 mM Lithium sulfate                  |
| G11        | 1 M Ammonium di-hydrogen phosphate |                       | 100 mM tri-Sodium citrate; pH 5.6             | none                                    |
| G12        | 1 M Ammonium di-hydrogen phosphate |                       | 100 mM ADA; pH 6.5                            | none                                    |
| H1         | 2 M Ammonium di-hydrogen phosphate |                       | 100 mM TRIS; pH 7.5                           | none                                    |
| H2         | 1 M Magnesium sulfate              |                       | 100 mM Sodium acetate; pH 4.6                 | none                                    |
| H3         | 1 M Magnesium sulfate              |                       | 100 mM tri-Sodium citrate; pH 5.6             | none                                    |
| H4         | 1 M Magnesium sulfate              |                       | 100 mM ADA; pH 6.5                            | 100 mM Lithium sulfate                  |
| H5         | 400 mM Magnesium sulfate           |                       | 50 mM TRIS; pH 7.5                            | none                                    |
| H6         | 400 mM Magnesium sulfate           |                       | 100 mM TRIS; pH 8.5                           | 100 mM Potassium Sodium tartrate        |
| H7         | 1 M Potassium Sodium tartrate      |                       | 100 mM HEPES; pH 7.5                          | none                                    |
| H8         | 100 mM Potassium Sodium tartrate   |                       | 100 mM HEPES; pH 7.5                          | 100 mM Lithium sulfate                  |
| H9         | 4 M Sodium formate                 |                       | none                                          | none                                    |
| H10        | 2 M Sodium formate; pH 4.6         |                       | none                                          | none                                    |
| H11        | 1.4 M Sodium acetate               |                       | 100 mM MES; pH 6.5                            | none                                    |
| H12        | 100 mM Sodium acetate              |                       | 100 mM TRIS; pH 8.5                           | none                                    |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

## JBScreen LCP

| LCP No. | Precipitant 1      | Buffer*                            | Additive                                                                                |
|---------|--------------------|------------------------------------|-----------------------------------------------------------------------------------------|
| A1      | 15 % v/v PEG 300   | 100 mM HEPES; pH 7.6               | 50 mM Ethylenediaminetetraacetic acid disodium salt; pH 8.0, 1.2 % v/v 1,7 Heptanediol  |
| A2      | 30 % v/v PEG 300   | 100 mM HEPES; pH 7.5               | 100 mM Ammonium di-hydrogen phosphate, 2 % v/v MPD                                      |
| A3      | 30 % v/v PEG 300   | 100 mM Sodium Phosphate; pH 6.3    | 150 mM Sodium chloride                                                                  |
| A4      | 32 % v/v PEG 300   | 100 mM HEPES; pH 7.5               | 100 mM Ammonium di-hydrogen phosphate, 1 % v/v 1,7 Heptanediol                          |
| A5      | 37 % v/v PEG 300   | 100 mM BIS-TRIS propane; pH 6.5    | 100 mM di-Ammonium hydrogen phosphate                                                   |
| A6      | 10 % v/v PEG 400   | 100 mM HEPES; pH 7.5               | 150 mM Ammonium sulfate                                                                 |
| A7      | 13 % v/v PEG 400   | 100 mM MES; pH 6.0                 | 170 mM Potassium Sodium tartrate, 0.45 % v/v Jeffamine® M-600; pH 7.0                   |
| A8      | 14 % v/v PEG 400   | 100 mM TRIS; pH 7.5                | 6 % v/v MPD                                                                             |
| A9      | 18 % v/v PEG 400   | 100 mM TRIS; pH 7.5                | 100 mM tri-Sodium citrate                                                               |
| A10     | 18 % v/v PEG 400   | 50 mM HEPES; pH 7.0                | 100 mM Potassium sulfate                                                                |
| A11     | 18.5 % v/v PEG 400 | 100 mM tri-Sodium citrate; pH 5.0  | 50 mM Lithium sulfate, 100 mM Sodium chloride                                           |
| A12     | 19.5 % v/v PEG 400 | 100 mM HEPES; pH 7.0               | 350 mM Ammonium di-hydrogen phosphate                                                   |
| B1      | 20 % v/v PEG 400   | 100 mM tri-Sodium citrate; pH 5.5  | 300 mM di-Sodium malonate, 5 mM 2-Aminoethanesulfonic acid                              |
| B2      | 20 % v/v PEG 400   | 100 mM HEPES; pH 7.0               | 400 mM Sodium chloride                                                                  |
| B3      | 20 % v/v PEG 400   | 100 mM MES; pH 6.5                 | 400 mM Potassium nitrate; pH 6.9, 1 mM Tris(2-carboxyethyl) phosphine hydrochloride     |
| B4      | 21 % v/v PEG 400   | 100 mM MES; pH 6.5                 | 70 mM di-Ammonium hydrogen phosphate                                                    |
| B5      | 23 % v/v PEG 400   | 100 mM tri-Sodium citrate; pH 5.25 | 300 mM di-Sodium malonate, 5 mM Nickel (II) chloride                                    |
| B6      | 25 % v/v PEG 400   | 100 mM HEPES; pH 7.5               | 200 mM Potassium Sodium tartrate                                                        |
| B7      | 26 % v/v PEG 400   | 100 mM MES; pH 6.7                 | 200 mM Lithium sulfate, 3.5 % v/v 1,4-Butanediol, 4 % v/v Dimethyl sulfoxide            |
| B8      | 26 % v/v PEG 400   | 100 mM MES; pH 6.0                 | 300 mM di-Sodium malonate, 5 mM Strontium chloride                                      |
| B9      | 26 % v/v PEG 400   | 100 mM TRIS; pH 8.0                | 300 mM Ammonium sulfate                                                                 |
| B10     | 26.5 % v/v PEG 400 | 100 mM tri-Sodium citrate; pH 5.0  | 50 mM Sodium thiocyanate, 2 % v/v 2,5-Hexanediol                                        |
| B11     | 27 % v/v PEG 400   | 100 mM TRIS; pH 7.75               | 220 mM Sodium formate, 5 % v/v 1,4-Butanediol                                           |
| B12     | 27 % v/v PEG 400   | 100 mM HEPES; pH 6.9               | 150 mM Ammonium fluoride, 2.5 % v/v Jeffamine® M-600                                    |
| C1      | 27.5 % v/v PEG 400 | 100 mM BIS-TRIS propane; pH 6.7    | 120 mM di-Sodium tartrate, 3 % v/v 1,3-Butanediol                                       |
| C2      | 27.5 % v/v PEG 400 | 100 mM BIS-TRIS propane; pH 6.4    | 150 mM Potassium Sodium tartrate                                                        |
| C3      | 28 % v/v PEG 400   | 100 mM BIS-TRIS propane; pH 7.0    | 300 mM Potassium formate                                                                |
| C4      | 28 % v/v PEG 400   | 100 mM tri-Sodium citrate; pH 4.5  | 300 mM Ammonium di-hydrogen phosphate, 10 mM Magnesium chloride                         |
| C5      | 28.5 % v/v PEG 400 | 100 mM HEPES; pH 7.0               | 100 mM di-Ammonium hydrogen phosphate, 6 mM Tris(2-carboxyethyl)phosphine hydrochloride |
| C6      | 29 % v/v PEG 400   | 100 mM MES; pH 6.8                 | 200 mM di-Ammonium hydrogen phosphate                                                   |
| C7      | 29 % v/v PEG 400   | 50 mM tri-Sodium citrate; pH 4.0   | 200 mM Lithium sulfate                                                                  |
| C8      | 29.5 % v/v PEG 400 | 100 mM TRIS; pH 7.75               | 350 mM Sodium formate, 5 % v/v 1,4-Butanediol                                           |
| C9      | 30 % v/v PEG 400   | 100 mM TRIS; pH 8.0                | 200 mM di-Sodium malonate                                                               |
| C10     | 30 % v/v PEG 400   | 100 mM tri-Sodium citrate; pH 6.5  | 185 mM Lithium sulfate                                                                  |
| C11     | 30 % v/v PEG 400   | 100 mM tri-Sodium citrate; pH 5.0  | 200 mM Magnesium chloride                                                               |
| C12     | 30 % v/v PEG 400   | 100 mM tri-Sodium citrate; pH 5.5  | 200 mM Lithium sulfate                                                                  |
| D1      | 30 % v/v PEG 400   | 100 mM BIS-TRIS propane; pH 7.5    | 300 mM Ammonium acetate, 2 % w/v D-(+)-Glucose                                          |
| D2      | 30 % v/v PEG 400   | 100 mM HEPES; pH 7.0               | 100 mM Sodium chloride                                                                  |
| D3      | 30 % v/v PEG 400   | 100 mM MES; pH 6.0                 | 100 mM Magnesium sulfate, 2.5 % v/v Polypropylene glycol 400                            |
| D4      | 30 % v/v PEG 400   | 100 mM tri-Sodium citrate; pH 6.0  | 400 mM Potassium nitrate                                                                |
| D5      | 30 % v/v PEG 400   | 100 mM TRIS; pH 7.5                | 400 mM Lithium chloride                                                                 |
| D6      | 30 % v/v PEG 400   | 100 mM TRIS; pH 8.0                | 100 mM Magnesium sulfate                                                                |
| D7      | 30 % v/v PEG 400   | 100 mM MES; pH 6.3                 | 100 mM Ammonium formate                                                                 |
| D8      | 30 % v/v PEG 400   | 100 mM HEPES; pH 7.0               | 100 mM Sodium thiocyanate                                                               |
| D9      | 30 % v/v PEG 400   | 100 mM MES; pH 6.5                 | 100 mM Sodium thiocyanate, 20 mM Calcium chloride                                       |
| D10     | 30 % v/v PEG 400   | 100 mM TRIS; pH 8.0                | 100 mM Sodium thiocyanate, 20 mM Calcium chloride                                       |
| D11     | 30 % v/v PEG 400   | 100 mM tri-Sodium citrate; pH 5.5  | 100 mM Sodium chloride, 3 % w/v D-(+)-Trehalose                                         |
| D12     | 30 % v/v PEG 400   | 50 mM MES; pH 6.5                  | 100 mM Magnesium chloride                                                               |

| LCP No. | Precipitant 1         | Buffer*                                | Additive                                                                            |
|---------|-----------------------|----------------------------------------|-------------------------------------------------------------------------------------|
| E1      | 30 % v/v PEG 400      | 100 mM HEPES; pH 7.5                   | 2 mM -Mercaptoethanol                                                               |
| E2      | 31 % v/v PEG 400      | 100 mM MES; pH 6.0                     | 300 mM di-Sodium malonate, 5 mM Cobalt (III) Hexamine chloride                      |
| E3      | 31 % v/v PEG 400      | 100 mM HEPES; pH 7.5                   | 150 mM tri-Sodium citrate, 350 mM Magnesium chloride                                |
| E4      | 32 % v/v PEG 400      | 100 mM HEPES; pH 7.8                   | 70 mM Ammonium fluoride, 6 % v/v Polypropylene glycol 400                           |
| E5      | 32 % v/v PEG 400      | 100 mM HEPES; pH 7.0                   | 100 mM Sodium chloride                                                              |
| E6      | 32 % v/v PEG 400      | 50 mM MES; pH 6.5                      | 100 mM Sodium thiocyanate, 20 mM Calcium chloride                                   |
| E7      | 32 % v/v PEG 400      | 100 mM tri-Sodium citrate; pH 4.5      | 75 mM Sodium chloride, 130 mM Magnesium chloride                                    |
| E8      | 32.5 % v/v PEG 400    | 100 mM BIS-TRIS propane; pH 6.75       | 150 mM Sodium sulfate, 6 % v/v 1,4-Butanediol                                       |
| E9      | 32.5 % v/v PEG 400    | 100 mM MES; pH 6.2                     | 100 mM Potassium Sodium tartrate, 5 % v/v Ethylene glycol                           |
| E10     | 34 % v/v PEG 400      | 100 mM TRIS; pH 8.7                    | 90 mM tri-Sodium citrate, 120 mM Ammonium sulfate                                   |
| E11     | 34 % v/v PEG 400      | 100 mM HEPES; pH 7.0                   | 300 mM Lithium sulfate, 7.5 % v/v Dimethyl sulfoxide                                |
| E12     | 35 % v/v PEG 400      | none                                   | 4 % v/v Glycerol, 80 mM tri-Sodium citrate, 100 mM TRICINE                          |
| F1      | 35 % v/v PEG 400      | 100 mM tri-Sodium citrate; pH 5.0      | 370 mM Ammonium acetate, 3 % v/v 1-Propanol                                         |
| F2      | 36 % v/v PEG 400      | 100 mM HEPES; pH 7.2                   | 100 mM Ammonium chloride                                                            |
| F3      | 37.5 % v/v PEG 400    | 100 mM tri-Sodium citrate; pH 6.0      | 180 mM di-Ammonium tartrate, 4 % v/v MPD                                            |
| F4      | 38 % v/v PEG 400      | 100 mM HEPES; pH 7.0                   | 300 mM Lithium chloride, 30 mM Strontium chloride                                   |
| F5      | 39 % v/v PEG 400      | 100 mM TRIS; pH 8.5                    | 100 mM Potassium chloride                                                           |
| F6      | 39.8 % v/v PEG 400    | 100 mM BIS-TRIS propane; pH 7.2        | 100 mM Ammonium di-hydrogen phosphate                                               |
| F7      | 40 % v/v PEG 400      | 100 mM TRIS; pH 8.0                    | 4 % v/v Dimethyl sulfoxide, 1 % v/v 1,7 Heptanediol                                 |
| F8      | 40 % v/v PEG 400      | 50 mM MES; pH 6.5                      | 1.6 M Sodium chloride                                                               |
| F9      | 40 % v/v PEG 400      | 100 mM ADA; pH 6.5                     | 160 mM Lithium chloride, 4 mM Strontium chloride                                    |
| F10     | 40 % v/v PEG 400      | 100 mM ADA; pH 6.5                     | 200 mM Lithium sulfate                                                              |
| F11     | 42 % v/v PEG 400      | 100 mM MES; pH 6.5                     | 150 mM Sodium acetate                                                               |
| F12     | 25 % v/v PEG DME 500  | 100 mM MES; pH 6.0                     | 10 mM Copper (II) chloride, 200 mM Ammonium formate                                 |
| G1      | 30 % v/v PEG DME 500  | 100 mM MES; pH 6.0                     | 2 mM Cadmium chloride                                                               |
| G2      | 30 % v/v PEG DME 500  | 100 mM tri-Sodium citrate; pH 6.0      | 100 mM Magnesium chloride, 100 mM Sodium chloride, 100 mM Ammonium sulfate          |
| G3      | 14 % v/v PEG MME 550  | 100 mM HEPES; pH 7.5                   | 200 mM Lithium sulfate                                                              |
| G4      | 15 % v/v PEG MME 550  | 100 mM HEPES; pH 7.0                   | 200 mM Potassium Sodium tartrate, 1 mM Tris(2-carboxyethyl) phosphine hydrochloride |
| G5      | 25 % v/v PEG MME 550  | 50 mM ADA; pH 6.25                     | 350 mM Sodium nitrate, 50 mM di-Sodium malonate; pH 7.0                             |
| G6      | 28 % v/v PEG MME 550  | 100 mM TRIS; pH 8.0                    | 100 mM Lithium sulfate                                                              |
| G7      | 28 % v/v PEG MME 550  | 50 mM ADA; pH 7.0                      | 550 mM Ammonium sulfate                                                             |
| G8      | 25 % v/v PEG 600      | 100 mM ADA; pH 7.0                     | none                                                                                |
| G9      | 22.5 % w/v PEG 1,500  | 100 mM MES; pH 5.5                     | 300 mM Sodium acetate                                                               |
| G10     | 12 % w/v PEG 3,350    | 100 mM Sodium acetate; pH 4.6          | 200 mM di-Sodium malonate                                                           |
| G11     | 25 % w/v PEG 3,350    | 100 mM BIS-TRIS; pH 5.5                | 200 mM Lithium sulfate                                                              |
| G12     | 25 % w/v PEG 3,350    | 100 mM BIS-TRIS; pH 5.5                | none                                                                                |
| H1      | 10 % w/v PEG 4,000    | 100 mM Sodium acetate; pH 4.6          | 200 mM Potassium chloride                                                           |
| H2      | 20 % w/v PEG 6,000    | 100 mM BICINE; pH 9.0                  | none                                                                                |
| H3      | 30 % w/v PEG 8,000    | none                                   | 200 mM Ammonium sulfate                                                             |
| H4      | 10 % w/v PEP 426      | 100 mM MES; pH 6.5                     | 100 mM Ammonium chloride, 10 mM Calcium chloride                                    |
| H5      | 20 % w/v PEP 426      | 100 mM TRIS; pH 8.0                    | 100 mM Potassium formate                                                            |
| H6      | 4 % v/v MPD           | 100 mM tri-Sodium citrate; pH 5.6      | 100 mM Sodium chloride, 100 mM Lithium nitrate                                      |
| H7      | 5 % v/v MPD           | 100 mM tri-Sodium citrate; pH 5.6      | 100 mM Sodium chloride, 60 mM Magnesium acetate                                     |
| H8      | 8 % v/v MPD           | 100 mM ADA; pH 6.7                     | 400 mM Potassium nitrate, 100 mM tri-Potassium citrate                              |
| H9      | none                  | 1 M Sodium Potassium phosphate; pH 5.1 | 300 mM D-(+)-Trehalose                                                              |
| H10     | 1.5 M Sodium chloride | 75 mM Sodium acetate; pH 4.6           | none                                                                                |
| H11     | 1 M Sodium acetate    | 100 mM MES; pH 6.5                     | none                                                                                |
| H12     | 1 M Lithium sulfate   | 100 mM TRIS; pH 8.5                    | 10 mM Nickel (II) chloride                                                          |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

## JBScreen Kinase

| Kinase 1 |                                     | Precipitant                       | Buffer*                                                                     | Additive |
|----------|-------------------------------------|-----------------------------------|-----------------------------------------------------------------------------|----------|
| No.      |                                     |                                   |                                                                             |          |
| A1       | 1 M Ammonium sulfate                | 100 mM tri-Sodium citrate; pH 5.6 | 200 mM Magnesium acetate, 10 mM Dithiothreitol                              |          |
| A2       | 1.3 M Ammonium sulfate              | 100 mM tri-Sodium citrate; pH 5.6 | none                                                                        |          |
| A3       | 1.3 M Ammonium sulfate              | 100 mM TRIS; pH 8.5               | none                                                                        |          |
| A4       | 1.8 M Ammonium sulfate              | 100 mM MES; pH 6.5                | 25 mM Cobalt (II) chloride                                                  |          |
| A5       | 2 M Ammonium sulfate                | 100 mM tri-Sodium citrate; pH 3.1 | 200 mM Sodium chloride                                                      |          |
| A6       | 2 M Ammonium sulfate                | 100 mM Sodium acetate; pH 4.6     | 50 mM Magnesium chloride                                                    |          |
| A7       | 2 M Ammonium sulfate                | 100 mM Sodium acetate; pH 4.6     | none                                                                        |          |
| A8       | 2 M Ammonium sulfate                | 100 mM HEPES; pH 7.5              | 2 % v/v PEG 550 MME                                                         |          |
| A9       | 2 M Ammonium sulfate                | 100 mM HEPES; pH 7.5              | none                                                                        |          |
| A10      | 2 M Ammonium sulfate                | 100 mM TRIS; pH 8.5               | 6 mM Magnesium chloride                                                     |          |
| A11      | 1.5 M Lithium sulfate               | 100 mM TRIS; pH 8.5               | 10 mM Nickel sulfate                                                        |          |
| A12      | 1 M Lithium chloride                | 100 mM tri-Sodium citrate; pH 4.2 | none                                                                        |          |
| B1       | 2 M Sodium chloride                 | 100 mM Sodium acetate; pH 4.6     | none                                                                        |          |
| B2       | 2 M Sodium chloride                 | 100 mM MES; pH 6.5                | 100 mM di-Sodium hydrogen phosphate, 100 mM Potassium di-hydrogen phosphate |          |
| B3       | 3.3 M Sodium chloride               | 100 mM HEPES; pH 7.5              | 1 % v/v Glycerol                                                            |          |
| B4       | 1.2 M Sodium acetate                | 100 mM MES; pH 6.5                | 6.25 mM Calcium chloride                                                    |          |
| B5       | 3.7 M Sodium formate                | 100 mM BICINE; pH 9.5             | 2 % w/v PEG 3,000                                                           |          |
| B6       | 500 mM di-Sodium malonate; pH 6.0   | 50 mM PIPES; pH 6.0               | 1.6 % v/v Glycerol, 10 mM Dithiothreitol                                    |          |
| B7       | 500 mM di-Sodium hydrogen phosphate | 100 mM CAPS; pH 10.0              | 500 mM Potassium di-hydrogen phosphate, 200 mM Lithium sulfate              |          |
| B8       | 1.2 M di-Sodium tartrate            | 100 mM TRIS; pH 8.5               | 5 mM Dithiothreitol                                                         |          |
| B9       | 1 M Potassium Sodium tartrate       | 100 mM MES; pH 6.5                | none                                                                        |          |
| B10      | 30 % v/v Jeffamine® M-600           | 100 mM MES; pH 6.5                | 50 mM Cesium chloride                                                       |          |
| B11      | 40 % v/v MPD                        | 100 mM MES; pH 6.5                | none                                                                        |          |
| B12      | 50 % v/v MPD                        | 100 mM HEPES; pH 7.5              | none                                                                        |          |

| Kinase 2 |                        | Precipitant                             | Buffer*                                                                                         | Additive |
|----------|------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------|----------|
| No.      |                        |                                         |                                                                                                 |          |
| C1       | 10 % v/v PEG 400       | 50 mM TRIS; pH 8.5                      | 1 mM Dithiothreitol, 1 mM Ethylenediaminetetraacetic acid disodium salt, 300 mM Sodium chloride |          |
| C2       | 15 % v/v PEG 400       | 100 mM HEPES; pH 7.5                    | 200 mM Calcium chloride                                                                         |          |
| C3       | 25 % v/v PEG 400       | 100 mM MES; pH 6.5                      | 10 % v/v 2-Propanol                                                                             |          |
| C4       | 25 % v/v PEG 400       | 100 mM TRIS; pH 8.5                     | 150 mM tri-Sodium citrate                                                                       |          |
| C5       | 15 % v/v PEG 550 MME   | 100 mM Sodium acetate; pH 4.6           | 5 % v/v Ethylene glycol                                                                         |          |
| C6       | 20 % v/v PEG 550 MME   | 100 mM BICINE; pH 9.0                   | 100 mM Sodium chloride                                                                          |          |
| C7       | 20 % w/v PEG 1,000     | 100 mM TRIS; pH 8.5                     | 1 mM Dithiothreitol                                                                             |          |
| C8       | 35 % w/v PEG 1,000     | 100 mM HEPES; pH 7.5                    | 50 mM Lithium sulfate                                                                           |          |
| C9       | 12 % w/v PEG 2,000     | 100 mM MES; pH 6.5                      | 200 mM Magnesium acetate                                                                        |          |
| C10      | 25 % w/v PEG 2,000     | 100 mM Sodium acetate; pH 4.6           | 100 mM Magnesium chloride                                                                       |          |
| C11      | 30 % w/v PEG 2,000     | 100 mM Sodium acetate; pH 4.6           | 50 mM Magnesium chloride                                                                        |          |
| C12      | 24 % w/v PEG 2,000 MME | 100 mM Sodium phosphate citrate; pH 5.0 | none                                                                                            |          |
| D1       | 12 % w/v PEG 3,350     | 100 mM MES; pH 6.5                      | 500 mM Sodium chloride                                                                          |          |
| D2       | 12 % w/v PEG 3,350     | 50 mM tri-Sodium citrate; pH 5.6        | 200 mM Ammonium sulfate, 50 mM Magnesium sulfate                                                |          |
| D3       | 15 % w/v PEG 3,350     | 100 mM Imidazole; pH 7.5                | 250 mM Ammonium sulfate, 10 mM Cadmium chloride                                                 |          |
| D4       | 20 % w/v PEG 3,350     | 150 mM di-Sodium DL-malate; pH 7.0      | none                                                                                            |          |
| D5       | 20 % w/v PEG 3,350     | 100 mM HEPES; pH 7.5                    | 200 mM Sodium chloride, 20 mM L-Glutathione reduced                                             |          |
| D6       | 20 % w/v PEG 3,350     | 100 mM TRIS; pH 8.5                     | 120 mM Sodium chloride, 5 mM Dithiothreitol                                                     |          |
| D7       | 20 % w/v PEG 3,350     | none                                    | 200 mM Potassium nitrate                                                                        |          |
| D8       | 22 % w/v PEG 3,350     | none                                    | 100 mM Ammonium formate                                                                         |          |
| D9       | 24 % w/v PEG 3,350     | 100 mM tri-Sodium citrate; pH 5.0       | none                                                                                            |          |
| D10      | 30 % w/v PEG 3,350     | 100 mM Sodium acetate; pH 4.6           | 200 mM Ammonium acetate                                                                         |          |
| D11      | 30 % w/v PEG 3,350     | 200 mM Ammonium acetate; pH 5.6         | 20 % v/v 2-Propanol, 200 mM Calcium chloride                                                    |          |
| D12      | 32.5 % w/v PEG 3,350   | 100 mM TRIS; pH 8.5                     | 500 mM Sodium chloride, 200 mM Magnesium chloride                                               |          |

| <b>Kinase 3</b> |                        |                                    |                                                                          |
|-----------------|------------------------|------------------------------------|--------------------------------------------------------------------------|
| <b>No.</b>      | <b>Precipitant</b>     | <b>Buffer*</b>                     | <b>Additive</b>                                                          |
| E1              | 8 % w/v PEG 4,000      | 50 mM MES; pH 6.5                  | 10 mM Magnesium chloride, 10 mM Dithiothreitol                           |
| E2              | 10 % w/v PEG 4,000     | 50 mM PIPES; pH 7.0                | 10 mM Dithiothreitol                                                     |
| E3              | 10 % w/v PEG 4,000     | 100 mM HEPES; pH 7.5               | 15 % v/v Ethylene glycol, 10 % v/v 2-Propanol, 200 mM Magnesium chloride |
| E4              | 10 % w/v PEG 4,000     | 100 mM HEPES; pH 7.5               | none                                                                     |
| E5              | 15 % w/v PEG 4,000     | 100 mM HEPES; pH 7.5               | 10 % v/v 2-Propanol                                                      |
| E6              | 15 % w/v PEG 4,000     | 75 mM TRIS; pH 8.5                 | 200 mM Sodium chloride, 1 % w/v PEG 6,000, 75 mM Sodium acetate          |
| E7              | 15 % w/v PEG 4,000     | 100 mM di-Sodium DL-malate; pH 5.5 | 200 mM Ammonium sulfate                                                  |
| E8              | 20 % w/v PEG 4,000     | 100 mM BIS-TRIS; pH 6.5            | 100 mM Sodium chloride                                                   |
| E9              | 20 % w/v PEG 4,000     | 100 mM HEPES; pH 7.5               | 200 mM Magnesium chloride                                                |
| E10             | 20 % w/v PEG 4,000     | 100 mM TRIS; pH 8.5                | 200 mM Magnesium chloride                                                |
| E11             | 25 % w/v PEG 4,000     | 100 mM MES; pH 6.5                 | 200 mM Magnesium chloride                                                |
| E12             | 25 % w/v PEG 4,000     | 100 mM TRIS; pH 8.5                | 100 mM Lithium sulfate                                                   |
| F1              | 28 % w/v PEG 4,000     | 200 mM Lithium acetate; pH 7.5     | none                                                                     |
| F2              | 30 % w/v PEG 4,000     | 100 mM MES; pH 6.5                 | 200 mM Sodium acetate                                                    |
| F3              | 30 % w/v PEG 4,000     | 150 mM TRIS; pH 8.5                | 200 mM Ammonium sulfate                                                  |
| F4              | 8 % w/v PEG 5,000 MME  | 100 mM HEPES; pH 7.5               | 10 % v/v 2-Propanol                                                      |
| F5              | 25 % w/v PEG 5,000 MME | 100 mM MES; pH 6.5                 | 200 mM Ammonium sulfate                                                  |
| F6              | 30 % w/v PEG 5,000 MME | 100 mM HEPES; pH 7.5               | 200 mM Ammonium sulfate                                                  |
| F7              | 30 % w/v PEG 5,000 MME | 100 mM ADA; pH 6.5                 | 100 mM Ammonium sulfate                                                  |
| F8              | 20 % w/v PEG 6,000     | 100 mM MES; pH 6.5                 | none                                                                     |
| F9              | 28 % w/v PEG 6,000     | 100 mM MES; pH 6.5                 | 10 mM Dithiothreitol                                                     |
| F10             | 30 % w/v PEG 6,000     | 100 mM HEPES; pH 7.5               | 175 mM Lithium sulfate                                                   |
| F11             | 30 % w/v PEG 6,000     | 100 mM PIPES; pH 7.0               | 10 mM Dithiothreitol                                                     |
| F12             | 32 % w/v PEG 6,000     | 100 mM MES; pH 6.5                 | none                                                                     |
| <b>Kinase 4</b> |                        |                                    |                                                                          |
| <b>No.</b>      | <b>Precipitant</b>     | <b>Buffer*</b>                     | <b>Additive</b>                                                          |
| G1              | 7 % w/v PEG 8,000      | 100 mM MES; pH 6.5                 | 20 % v/v Ethylene glycol                                                 |
| G2              | 7 % w/v PEG 8,000      | 100 mM MES; pH 6.5                 | 150 mM Calcium acetate, 16 % v/v Ethylene glycol                         |
| G3              | 10 % w/v PEG 8,000     | 100 mM TRIS; pH 8.5                | 10 % v/v PEG 200                                                         |
| G4              | 12 % w/v PEG 8,000     | 100 mM HEPES; pH 7.5               | none                                                                     |
| G5              | 12 % w/v PEG 8,000     | 100 mM TRIS; pH 8.5                | 250 mM di-Sodium tartrate                                                |
| G6              | 16 % w/v PEG 8,000     | 100 mM HEPES; pH 7.5               | 100 mM Potassium di-hydrogen phosphate                                   |
| G7              | 16 % w/v PEG 8,000     | 100 mM HEPES; pH 7.5               | 150 mM Sodium chloride, 2 % v/v Ethylene glycol                          |
| G8              | 18 % w/v PEG 8,000     | 100 mM MES; pH 6.5                 | 200 mM Magnesium acetate                                                 |
| G9              | 18 % w/v PEG 8,000     | 100 mM MES; pH 6.5                 | none                                                                     |
| G10             | 18 % w/v PEG 8,000     | 100 mM TRIS; pH 8.5                | none                                                                     |
| G11             | 20 % w/v PEG 8,000     | 100 mM tri-Sodium citrate; pH 5.0  | 100 mM Magnesium acetate                                                 |
| G12             | 20 % w/v PEG 8,000     | 100 mM TRIS; pH 8.5                | 200 mM Magnesium chloride, 2 % v/v Ethylene glycol                       |
| H1              | 22 % w/v PEG 8,000     | 100 mM TRIS; pH 8.5                | 2 % v/v Ethylene glycol                                                  |
| H2              | 25 % w/v PEG 8,000     | 100 mM Sodium acetate; pH 4.6      | 50 mM Magnesium chloride                                                 |
| H3              | 30 % w/v PEG 8,000     | 100 mM MES; pH 6.5                 | 200 mM Ammonium sulfate, 4 % v/v 1,3-Propanediol                         |
| H4              | 30 % w/v PEG 8,000     | 100 mM HEPES; pH 7.5               | 10 mM Dithiothreitol, 20 % v/v Glycerol                                  |
| H5              | 9 % w/v PEG 8,000      | 100 mM MES; pH 6.5                 | 200 mM Zinc acetate                                                      |
| H6              | 16 % w/v PEG 10,000    | 100 mM BIS-TRIS; pH 6.5            | 300 mM Ammonium sulfate, 5 % v/v Ethylene glycol                         |
| H7              | 10 % w/v PEG 10,000    | 100 mM HEPES; pH 7.5               | 8 % v/v Ethylene glycol                                                  |
| H8              | 15 % w/v PEG 10,000    | 100 mM HEPES; pH 7.5               | 5 mM Dithiothreitol                                                      |
| H9              | 15 % w/v PEG 10,000    | 100 mM TRIS; pH 8.5                | none                                                                     |
| H10             | 12 % w/v PEG 20,000    | 100 mM MES; pH 6.5                 | none                                                                     |
| H11             | 10 % w/v PEG 20,000    | 100 mM HEPES; pH 7.5               | 100 mM Ammonium formate                                                  |
| H12             | 15 % w/v PEG 20,000    | none                               | 10 mM Potassium hydrogen tartrate                                        |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

## JBScreen Nuc-Pro

| Nuc-Pro 1<br>No. | Precipitant            | Buffer*                           | Additive                                            |
|------------------|------------------------|-----------------------------------|-----------------------------------------------------|
| A1               | 20 % v/v PEG 200       | 50 mM HEPES; pH 7.5               | 200 mM Potassium chloride, 25 mM Magnesium sulfate  |
| A2               | 50 % v/v PEG 200       | 100 mM TRIS; pH 8.0               | none                                                |
| A3               | 5 % v/v PEG 400        | 50 mM PIPES; pH 7.0               | 30 mM Magnesium chloride                            |
| A4               | 5 % v/v PEG 400        | 20 mM MES; pH 5.8                 | 15 mM Magnesium formate, 2 mM Cobalt (II) chloride  |
| A5               | 10 % v/v PEG 400       | 50 mM HEPES; pH 7.0               | 100 mM Potassium chloride                           |
| A6               | 15 % v/v PEG 400       | 50 mM MES; pH 6.5                 | 80 mM Magnesium acetate, 15 mM Magnesium chloride   |
| A7               | 15 % v/v PEG 400       | 100 mM TRIS; pH 8.0               | 80 mM Calcium chloride, 20 mM Sodium chloride       |
| A8               | 20 % v/v PEG 400       | 50 mM BIS-TRIS propane; pH 6.8    | 60 mM Magnesium chloride                            |
| A9               | 25 % v/v PEG 400       | 100 mM tri-Sodium citrate; pH 5.6 | 130 mM Sodium chloride, 60 mM Magnesium chloride    |
| A10              | 30 % v/v PEG 400       | 100 mM HEPES; pH 7.5              | 200 mM Calcium chloride                             |
| A11              | 30 % v/v PEG 400       | 50 mM TRIS; pH 8.5                | 100 mM Potassium chloride, 10 mM Magnesium chloride |
| A12              | 25 % v/v PEG 550 MME   | 50 mM HEPES; pH 7.0               | 10 mM Magnesium chloride                            |
| B1               | 20 % w/v PEG 1,000     | 50 mM MES; pH 6.5                 | 200 mM Magnesium chloride, 100 mM Sodium chloride   |
| B2               | 30 % w/v PEG 2,000 MME | 100 mM Sodium acetate; pH 4.6     | 200 mM Ammonium sulfate                             |
| B3               | 10 % w/v PEG 3,350     | 100 mM MES; pH 6.5                | 100 mM Calcium chloride, 13 % v/v Glycerol          |
| B4               | 25 % w/v PEG 3,350     | 50 mM MES; pH 6.0                 | 200 mM Sodium formate, 10 % v/v Glycerol            |
| B5               | 30 % w/v PEG 3,350     | 50 mM di-Sodium succinate; pH 5.5 | 100 mM Sodium chloride                              |
| B6               | 35 % w/v PEG 3,350     | 50 mM TRIS; pH 7.5                | 50 mM Potassium chloride                            |
| B7               | 5 % w/v PEG 4,000      | 50 mM HEPES; pH 7.0               | 200 mM Ammonium sulfate, 20 mM Magnesium acetate    |
| B8               | 5 % w/v PEG 4,000      | 50 mM MES; pH 6.0                 | 5 mM Magnesium sulfate                              |
| B9               | 10 % w/v PEG 4,000     | 50 mM MES; pH 6.5                 | 200 mM Ammonium acetate, 10 mM Calcium chloride     |
| B10              | 10 % w/v PEG 4,000     | 50 mM Imidazole; pH 7.2           | 20 mM Zinc sulfate                                  |
| B11              | 15 % w/v PEG 4,000     | 50 mM TRIS; pH 7.5                | 150 mM Potassium chloride, 20 mM Magnesium chloride |
| B12              | 15 % w/v PEG 4,000     | 50 mM tri-Sodium citrate; pH 5.0  | 100 mM Sodium chloride, 20 mM Ammonium sulfate      |

| Nuc-Pro 2<br>No. | Precipitant         | Buffer*                             | Additive                                                            |
|------------------|---------------------|-------------------------------------|---------------------------------------------------------------------|
| C1               | 20 % w/v PEG 4,000  | 100 mM tri-Sodium citrate; pH 5.6   | 100 mM Potassium chloride, 10 % v/v 2-Propanol                      |
| C2               | 20 % w/v PEG 4,000  | 50 mM MOPS; pH 7.0                  | 100 mM Sodium chloride                                              |
| C3               | 20 % w/v PEG 4,000  | 100 mM HEPES; pH 7.5                | none                                                                |
| C4               | 24 % w/v PEG 4,000  | 50 mM di-Sodium succinate; pH 5.5   | 60 mM Magnesium chloride, 300 mM Sodium chloride                    |
| C5               | 25 % w/v PEG 4,000  | 50 mM tri-Sodium citrate; pH 5.0    | 50 mM Ammonium sulfate                                              |
| C6               | 30 % w/v PEG 4,000  | 50 mM MES; pH 6.5                   | 80 mM Magnesium acetate                                             |
| C7               | 30 % w/v PEG 4,000  | 50 mM TRIS; pH 8.5                  | 150 mM Ammonium chloride, 10 mM Calcium chloride                    |
| C8               | 32 % w/v PEG 4,000  | 100 mM TRIS; pH 8.5                 | 5 % v/v Glycerol                                                    |
| C9               | 36 % w/v PEG 4,000  | 50 mM Sodium acetate; pH 5.0        | none                                                                |
| C10              | 5 % w/v PEG 6,000   | 20 mM BIS-TRIS; pH 6.0              | 60 mM di-Ammonium hydrogen citrate, 20 mM Magnesium chloride        |
| C11              | 10 % w/v PEG 6,000  | 50 mM tri-Sodium citrate; pH 4.0    | 100 mM Sodium chloride                                              |
| C12              | 10 % w/v PEG 6,000  | 50 mM HEPES; pH 7.0                 | 200 mM Ammonium acetate, 150 mM Magnesium acetate                   |
| D1               | 15 % w/v PEG 6,000  | 10 mM TRIS; pH 7.5                  | none                                                                |
| D2               | 18 % w/v PEG 6,000  | 50 mM Sodium acetate; pH 5.0        | none                                                                |
| D3               | 20 % w/v PEG 6,000  | 50 mM BIS-TRIS propane; pH 7.0      | 7 % v/v MPD, 5 % v/v 2-Methyl-2-propanol                            |
| D4               | 20 % w/v PEG 6,000  | 50 mM di-Potassium L-Malate; pH 5.0 | 30 mM Calcium chloride                                              |
| D5               | 5 % w/v PEG 8,000   | 50 mM HEPES; pH 7.5                 | 20 mM Magnesium chloride                                            |
| D6               | 10 % w/v PEG 8,000  | 100 mM TRIS; pH 8.0                 | 10 % v/v Glycerol, 1 mM Tris(2-carboxyethyl)phosphine hydrochloride |
| D7               | 10 % w/v PEG 8,000  | 50 mM MES; pH 6.5                   | 200 mM Potassium chloride, 100 mM Magnesium acetate                 |
| D8               | 15 % w/v PEG 8,000  | 50 mM BIS-TRIS propane; pH 6.8      | 100 mM Ammonium sulfate, 10 % v/v Glycerol                          |
| D9               | 15 % w/v PEG 8,000  | 100 mM MES; pH 6.5                  | 200 mM Calcium acetate                                              |
| D10              | 18 % w/v PEG 8,000  | 100 mM TRIS; pH 8.0                 | 200 mM Magnesium formate                                            |
| D11              | 20 % w/v PEG 8,000  | 10 mM TRIS; pH 7.5                  | 10 mM Calcium chloride                                              |
| D12              | 15 % w/v PEG 20,000 | 100 mM MES; pH 6.5                  | 80 mM Manganese (II) chloride                                       |



| Nuc-Pro 3 | Precipitant 1                       | Precipitant 2     | Buffer*                        | Additive                                            |
|-----------|-------------------------------------|-------------------|--------------------------------|-----------------------------------------------------|
| No.       |                                     |                   |                                |                                                     |
| E1        | 1.2 M Ammonium sulfate              | none              | 100 mM HEPES; pH 7.5           | 2 % w/v PEG 400                                     |
| E2        | 20 mM Calcium chloride              | none              | 100 mM Glycine; pH 8.0         | none                                                |
| E3        | 2 M Lithium chloride                | none              | 50 mM MES; pH 6.0              | 200 mM Calcium acetate, 1 mM Cobalt (II) chloride   |
| E4        | 600 mM Lithium sulfate              | none              | 50 mM MES; pH 6.0              | 10 mM Magnesium chloride                            |
| E5        | 1 M Lithium sulfate                 | 8 % w/v PEG 400   | 50 mM HEPES; pH 7.5            | none                                                |
| E6        | 1 M Lithium sulfate                 | none              | none                           | 50 mM tri-Sodium citrate, 3 % w/v 2-Propanol        |
| E7        | 1.2 M Lithium sulfate               | none              | 50 mM MES; pH 6.5              | 30 mM Magnesium chloride                            |
| E8        | 1.2 M Lithium sulfate               | none              | 50 mM MES; pH 6.5              | 50 mM Magnesium chloride, 2 mM Cobalt (II) chloride |
| E9        | 1.5 M Lithium sulfate               | none              | 50 mM TRIS; pH 8.5             | 5 % w/v Glycerol                                    |
| E10       | 1.6 M Lithium sulfate               | 2 % w/v PEG 1,000 | 50 mM HEPES; pH 7.5            | none                                                |
| E11       | 1.7 M Lithium sulfate               | none              | 50 mM HEPES; pH 7.0            | 50 mM Magnesium sulfate                             |
| E12       | 1.7 M Lithium sulfate               | none              | none                           | 10 % w/v Glycerol                                   |
| F1        | 2 M Lithium sulfate                 | none              | none                           | 3 % w/v MPD                                         |
| F2        | 5 mM Magnesium chloride             | none              | 50 mM MES; pH 6.5              | 2.5 mM Cobalt (II) chloride                         |
| F3        | 40 mM Magnesium chloride            | none              | 50 mM MES; pH 6.0              | none                                                |
| F4        | 80 mM Magnesium chloride            | none              | 50 mM HEPES; pH 7.5            | none                                                |
| F5        | 200 mM Sodium chloride              | none              | 50 mM BIS-TRIS propane; pH 7.0 | none                                                |
| F6        | 400 mM Sodium chloride              | none              | 50 mM BIS-TRIS propane; pH 6.8 | none                                                |
| F7        | 600 mM Sodium chloride              | none              | 50 mM MES; pH 6.0              | 100 mM Ammonium acetate, 5 mM Magnesium sulfate     |
| F8        | 2.5 M Sodium chloride               | none              | 50 mM TRIS; pH 7.5             | 200 mM Magnesium chloride                           |
| F9        | 1.8 M Sodium formate                | none              | 100 mM TRIS; pH 8.0            | none                                                |
| F10       | 2 M Sodium formate                  | none              | 100 mM Sodium acetate; pH 4.6  | none                                                |
| F11       | 100 mM di-Sodium hydrogen phosphate | none              | none                           | 80 mM Sodium chloride                               |
| F12       | 1 M di-Sodium tartrate              | none              | 50 mM TRIS; pH 7.5             | 30 mM Magnesium chloride                            |

| Nuc-Pro 4 | Precipitant 1            | Precipitant 2     | Buffer*                           | Additive                                                       |
|-----------|--------------------------|-------------------|-----------------------------------|----------------------------------------------------------------|
| No.       |                          |                   |                                   |                                                                |
| G1        | 10 % w/v 1,6-Hexanediol  | none              | 50 mM MES; pH 6.5                 | 20 mM Magnesium chloride                                       |
| G2        | 20 % w/v 1,6-Hexanediol  | none              | 50 mM HEPES; pH 7.0               | 50 mM Ammonium chloride, 10 mM Magnesium chloride              |
| G3        | 35 % w/v 1,6-Hexanediol  | none              | 50 mM TRIS; pH 8.5                | 75 mM Magnesium sulfate                                        |
| G4        | 10 % v/v MPD             | none              | 50 mM TRIS; pH 7.5                | 50 mM Ammonium acetate                                         |
| G5        | 10 % v/v MPD             | none              | 50 mM HEPES; pH 7.0               | 80 mM Potassium chloride, 10 mM Magnesium sulfate              |
| G6        | 15 % v/v MPD             | none              | 50 mM ADA; pH 6.5                 | 100 mM Sodium acetate                                          |
| G7        | 15 % v/v MPD             | none              | 50 mM di-Sodium succinate; pH 5.5 | 10 mM Magnesium acetate                                        |
| G8        | 18 % v/v MPD             | none              | 20 mM MES; pH 5.8                 | 10 mM Magnesium chloride                                       |
| G9        | 23 % v/v MPD             | none              | 50 mM MES; pH 6.0                 | 100 mM Sodium chloride                                         |
| G10       | 26 % v/v MPD             | none              | 50 mM PIPES; pH 7.0               | 65 mM Magnesium chloride, 1 mM Cobalt (III) Hexamine chloride  |
| G11       | 27 % v/v MPD             | none              | 20 mM MES; pH 5.8                 | 400 mM Sodium chloride, 120 mM Calcium chloride                |
| G12       | 35 % v/v MPD             | none              | 20 mM BIS-TRIS; pH 6.0            | 50 mM Sodium chloride, 10 mM Calcium chloride                  |
| H1        | 50 % v/v MPD             | none              | 100 mM tri-Sodium citrate; pH 5.6 | 10 mM Magnesium chloride                                       |
| H2        | 5 % v/v 2-Propanol       | none              | 50 mM TRIS; pH 7.5                | 10 mM Magnesium chloride                                       |
| H3        | 5 % v/v 2-Propanol       | none              | 50 mM MES; pH 6.5                 | 100 mM Calcium acetate                                         |
| H4        | 9 % v/v 2-Propanol       | none              | 50 mM Imidazole; pH 7.2           | 15 mM Magnesium acetate, 15 mM Magnesium chloride              |
| H5        | 10 % v/v 2-Propanol      | none              | 50 mM MES; pH 6.5                 | 80 mM Ammonium acetate                                         |
| H6        | 10 % v/v 2-Propanol      | none              | 50 mM di-Sodium succinate; pH 5.5 | 2 mM Cobalt (II) chloride                                      |
| H7        | 13 % v/v 2-Propanol      | none              | 50 mM MOPS; pH 7.0                | 200 mM Potassium chloride, 6 mM Cobalt (III) Hexamine chloride |
| H8        | 15 % v/v 2-Propanol      | none              | 50 mM MES; pH 6.0                 | 20 mM Magnesium chloride                                       |
| H9        | 10 % v/v 1,4-Dioxane     | none              | 50 mM HEPES; pH 7.5               | none                                                           |
| H10       | 10 % v/v Ethanol         | none              | 50 mM MES; pH 6.5                 | 20 mM Magnesium chloride, 1 mM Cobalt (II) chloride            |
| H11       | 20 % v/v Ethylene glycol | 5 % w/v PEG 3,350 | none                              | 20 mM Magnesium chloride                                       |
| H12       | 15 % v/v Glycerol        | none              | 100 mM Sodium acetate; pH 4.6     | 200 mM Sodium chloride                                         |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

## JBScreen PEG/Salt

| PEG/Salt 1 | Precipitant        | Additive                               |
|------------|--------------------|----------------------------------------|
| No.        |                    |                                        |
| A1         | 20 % w/v PEG 3,350 | 200 mM Ammonium acetate                |
| A2         | 20 % w/v PEG 3,350 | 200 mM Ammonium chloride               |
| A3         | 20 % w/v PEG 3,350 | 200 mM Ammonium fluoride               |
| A4         | 20 % w/v PEG 3,350 | 200 mM Ammonium formate                |
| A5         | 20 % w/v PEG 3,350 | 200 mM Ammonium iodide                 |
| A6         | 20 % w/v PEG 3,350 | 200 mM Ammonium nitrate                |
| A7         | 20 % w/v PEG 3,350 | 200 mM Ammonium di-hydrogen phosphate  |
| A8         | 20 % w/v PEG 3,350 | 200 mM di-Ammonium hydrogen phosphate  |
| A9         | 20 % w/v PEG 3,350 | 200 mM Ammonium sulfate                |
| A10        | 20 % w/v PEG 3,350 | 200 mM Ammonium sulfite                |
| A11        | 20 % w/v PEG 3,350 | 200 mM Calcium acetate                 |
| A12        | 20 % w/v PEG 3,350 | 200 mM Calcium chloride                |
| B1         | 20 % w/v PEG 3,350 | 200 mM di-Ammonium tartrate            |
| B2         | 20 % w/v PEG 3,350 | 200 mM Potassium formate               |
| B3         | 20 % w/v PEG 3,350 | 200 mM Lithium acetate                 |
| B4         | 20 % w/v PEG 3,350 | 200 mM Lithium chloride                |
| B5         | 20 % w/v PEG 3,350 | 200 mM tri-Lithium citrate             |
| B6         | 20 % w/v PEG 3,350 | 200 mM Lithium nitrate                 |
| B7         | 20 % w/v PEG 3,350 | 200 mM Lithium sulfate                 |
| B8         | 20 % w/v PEG 3,350 | 200 mM Magnesium acetate               |
| B9         | 20 % w/v PEG 3,350 | 200 mM Magnesium chloride              |
| B10        | 20 % w/v PEG 3,350 | 200 mM Magnesium formate               |
| B11        | 20 % w/v PEG 3,350 | 200 mM Magnesium nitrate               |
| B12        | 20 % w/v PEG 3,350 | 200 mM Magnesium sulfate               |
| PEG/Salt 2 | Precipitant        | Additive                               |
| No.        |                    |                                        |
| C1         | 20 % w/v PEG 3,350 | 200 mM Potassium acetate               |
| C2         | 20 % w/v PEG 3,350 | 200 mM Potassium chloride              |
| C3         | 20 % w/v PEG 3,350 | 200 mM Potassium fluoride              |
| C4         | 20 % w/v PEG 3,350 | 200 mM Potassium iodide                |
| C5         | 20 % w/v PEG 3,350 | 200 mM Potassium iodide                |
| C6         | 20 % w/v PEG 3,350 | 200 mM Potassium di-hydrogen phosphate |
| C7         | 20 % w/v PEG 3,350 | 200 mM di-Potassium hydrogen phosphate |
| C8         | 20 % w/v PEG 3,350 | 200 mM Potassium sulfate               |
| C9         | 20 % w/v PEG 3,350 | 200 mM Potassium thiocyanate           |
| C10        | 20 % w/v PEG 3,350 | 200 mM Potassium Sodium tartrate       |
| C11        | 20 % w/v PEG 3,350 | 200 mM Sodium acetate                  |
| C12        | 20 % w/v PEG 3,350 | 200 mM Sodium chloride                 |
| D1         | 20 % w/v PEG 3,350 | 200 mM tri-Sodium citrate              |
| D2         | 20 % w/v PEG 3,350 | 200 mM Sodium fluoride                 |
| D3         | 20 % w/v PEG 3,350 | 200 mM Sodium formate                  |
| D4         | 20 % w/v PEG 3,350 | 200 mM Sodium iodide                   |
| D5         | 20 % w/v PEG 3,350 | 200 mM Sodium thiocyanate              |
| D6         | 20 % w/v PEG 3,350 | 200 mM Sodium nitrate                  |
| D7         | 20 % w/v PEG 3,350 | 200 mM Sodium di-hydrogen phosphate    |
| D8         | 20 % w/v PEG 3,350 | 200 mM di-Sodium hydrogen phosphate    |
| D9         | 20 % w/v PEG 3,350 | 200 mM Sodium sulfate                  |
| D10        | 20 % w/v PEG 3,350 | 200 mM di-Sodium tartrate              |
| D11        | 20 % w/v PEG 3,350 | 200 mM tri-Potassium citrate           |
| D12        | 20 % w/v PEG 3,350 | 200 mM Zinc acetate                    |

| PEG/Salt 3 |                        | Precipitant | Additive                               |
|------------|------------------------|-------------|----------------------------------------|
| No.        |                        |             |                                        |
| E1         | 20 % w/v PEG 5,000 MME |             | 200 mM Ammonium acetate                |
| E2         | 20 % w/v PEG 5,000 MME |             | 200 mM Ammonium chloride               |
| E3         | 20 % w/v PEG 5,000 MME |             | 200 mM Ammonium fluoride               |
| E4         | 20 % w/v PEG 5,000 MME |             | 200 mM Ammonium formate                |
| E5         | 20 % w/v PEG 5,000 MME |             | 200 mM Ammonium iodide                 |
| E6         | 20 % w/v PEG 5,000 MME |             | 200 mM Ammonium nitrate                |
| E7         | 20 % w/v PEG 5,000 MME |             | 200 mM Ammonium di-hydrogen phosphate  |
| E8         | 20 % w/v PEG 5,000 MME |             | 200 mM di-Ammonium hydrogen phosphate  |
| E9         | 20 % w/v PEG 5,000 MME |             | 200 mM Ammonium sulfate                |
| E10        | 20 % w/v PEG 5,000 MME |             | 200 mM Ammonium sulfite                |
| E11        | 20 % w/v PEG 5,000 MME |             | 200 mM Calcium acetate                 |
| E12        | 20 % w/v PEG 5,000 MME |             | 200 mM Calcium chloride                |
| F1         | 20 % w/v PEG 5,000 MME |             | 200 mM di-Ammonium tartrate            |
| F2         | 20 % w/v PEG 5,000 MME |             | 200 mM Potassium formate               |
| F3         | 20 % w/v PEG 5,000 MME |             | 200 mM Lithium acetate                 |
| F4         | 20 % w/v PEG 5,000 MME |             | 200 mM Lithium chloride                |
| F5         | 20 % w/v PEG 5,000 MME |             | 200 mM tri-Lithium citrate             |
| F6         | 20 % w/v PEG 5,000 MME |             | 200 mM Lithium nitrate                 |
| F7         | 20 % w/v PEG 5,000 MME |             | 200 mM Lithium sulfate                 |
| F8         | 20 % w/v PEG 5,000 MME |             | 200 mM Magnesium acetate               |
| F9         | 20 % w/v PEG 5,000 MME |             | 200 mM Magnesium chloride              |
| F10        | 20 % w/v PEG 5,000 MME |             | 200 mM Magnesium formate               |
| F11        | 20 % w/v PEG 5,000 MME |             | 200 mM Magnesium nitrate               |
| F12        | 20 % w/v PEG 5,000 MME |             | 200 mM Magnesium sulfate               |
| PEG/Salt 4 |                        | Precipitant | Additive                               |
| No.        |                        |             |                                        |
| G1         | 20 % w/v PEG 5,000 MME |             | 200 mM Potassium acetate               |
| G2         | 20 % w/v PEG 5,000 MME |             | 200 mM Potassium chloride              |
| G3         | 20 % w/v PEG 5,000 MME |             | 200 mM Potassium fluoride              |
| G4         | 20 % w/v PEG 5,000 MME |             | 200 mM Potassium iodide                |
| G5         | 20 % w/v PEG 5,000 MME |             | 200 mM Potassium nitrate               |
| G6         | 20 % w/v PEG 5,000 MME |             | 200 mM Potassium di-hydrogen phosphate |
| G7         | 20 % w/v PEG 5,000 MME |             | 200 mM di-Potassium hydrogen phosphate |
| G8         | 20 % w/v PEG 5,000 MME |             | 200 mM Potassium sulfate               |
| G9         | 20 % w/v PEG 5,000 MME |             | 200 mM Potassium thiocyanate           |
| G10        | 20 % w/v PEG 5,000 MME |             | 200 mM Potassium Sodium tartrate       |
| G11        | 20 % w/v PEG 5,000 MME |             | 200 mM Sodium acetate                  |
| G12        | 20 % w/v PEG 5,000 MME |             | 200 mM Sodium chloride                 |
| H1         | 20 % w/v PEG 5,000 MME |             | 200 mM tri-Sodium citrate              |
| H2         | 20 % w/v PEG 5,000 MME |             | 200 mM Sodium fluoride                 |
| H3         | 20 % w/v PEG 5,000 MME |             | 200 mM Sodium formate                  |
| H4         | 20 % w/v PEG 5,000 MME |             | 200 mM Sodium iodide                   |
| H5         | 20 % w/v PEG 5,000 MME |             | 200 mM Sodium thiocyanate              |
| H6         | 20 % w/v PEG 5,000 MME |             | 200 mM Sodium nitrate                  |
| H7         | 20 % w/v PEG 5,000 MME |             | 200 mM Sodium di-hydrogen phosphate    |
| H8         | 20 % w/v PEG 5,000 MME |             | 200 mM di-Sodium hydrogen phosphate    |
| H9         | 20 % w/v PEG 5,000 MME |             | 200 mM Sodium sulfate                  |
| H10        | 20 % w/v PEG 5,000 MME |             | 200 mM di-Sodium tartrate              |
| H11        | 20 % w/v PEG 5,000 MME |             | 200 mM tri-Potassium citrate           |
| H12        | 20 % w/v PEG 5,000 MME |             | 200 mM Zinc acetate                    |

## JBScreen Pentaerythritol

| Pentaerythritol 1 |                  |                               |                           |
|-------------------|------------------|-------------------------------|---------------------------|
| No.               | Precipitant      | Buffer*                       | Additive                  |
| A1                | 25 % w/v PEP 426 | 100 mM Sodium acetate; pH 4.6 | none                      |
| A2                | 35 % w/v PEP 426 | 100 mM Sodium acetate; pH 4.6 | none                      |
| A3                | 45 % w/v PEP 426 | 100 mM Sodium acetate; pH 4.6 | none                      |
| A4                | 25 % w/v PEP 426 | 100 mM MES; pH 6.5            | none                      |
| A5                | 35 % w/v PEP 426 | 100 mM MES; pH 6.5            | none                      |
| A6                | 45 % w/v PEP 426 | 100 mM MES; pH 6.5            | none                      |
| A7                | 25 % w/v PEP 426 | 100 mM HEPES; pH 7.5          | none                      |
| A8                | 35 % w/v PEP 426 | 100 mM HEPES; pH 7.5          | none                      |
| A9                | 45 % w/v PEP 426 | 100 mM HEPES; pH 7.5          | none                      |
| A10               | 25 % w/v PEP 426 | 100 mM TRIS; pH 8.5           | none                      |
| A11               | 35 % w/v PEP 426 | 100 mM TRIS; pH 8.5           | none                      |
| A12               | 45 % w/v PEP 426 | 100 mM TRIS; pH 8.5           | none                      |
| B1                | 25 % w/v PEP 426 | 100 mM Sodium acetate; pH 4.6 | 50 mM Magnesium chloride  |
| B2                | 35 % w/v PEP 426 | 100 mM Sodium acetate; pH 4.6 | 200 mM Ammonium sulfate   |
| B3                | 45 % w/v PEP 426 | 100 mM Sodium acetate; pH 4.6 | 400 mM Potassium chloride |
| B4                | 25 % w/v PEP 426 | 100 mM MES; pH 6.5            | 50 mM Magnesium chloride  |
| B5                | 35 % w/v PEP 426 | 100 mM MES; pH 6.5            | 200 mM Ammonium sulfate   |
| B6                | 45 % w/v PEP 426 | 100 mM MES; pH 6.5            | 400 mM Potassium chloride |
| B7                | 25 % w/v PEP 426 | 100 mM HEPES; pH 7.5          | 50 mM Magnesium chloride  |
| B8                | 35 % w/v PEP 426 | 100 mM HEPES; pH 7.5          | 200 mM Ammonium sulfate   |
| B9                | 45 % w/v PEP 426 | 100 mM HEPES; pH 7.5          | 400 mM Potassium chloride |
| B10               | 25 % w/v PEP 426 | 100 mM TRIS; pH 8.5           | 50 mM Magnesium chloride  |
| B11               | 35 % w/v PEP 426 | 100 mM TRIS; pH 8.5           | 200 mM Ammonium sulfate   |
| B12               | 45 % w/v PEP 426 | 100 mM TRIS; pH 8.5           | 400 mM Potassium chloride |

| Pentaerythritol 2 |                  |                               |                           |
|-------------------|------------------|-------------------------------|---------------------------|
| No.               | Precipitant      | Buffer*                       | Additive                  |
| C1                | 25 % w/v PEP 629 | 100 mM Sodium acetate; pH 4.6 | none                      |
| C2                | 35 % w/v PEP 629 | 100 mM Sodium acetate; pH 4.6 | none                      |
| C3                | 45 % w/v PEP 629 | 100 mM Sodium acetate; pH 4.6 | none                      |
| C4                | 25 % w/v PEP 629 | 100 mM MES; pH 6.5            | none                      |
| C5                | 35 % w/v PEP 629 | 100 mM MES; pH 6.5            | none                      |
| C6                | 45 % w/v PEP 629 | 100 mM MES; pH 6.5            | none                      |
| C7                | 25 % w/v PEP 629 | 100 mM HEPES; pH 7.5          | none                      |
| C8                | 35 % w/v PEP 629 | 100 mM HEPES; pH 7.5          | none                      |
| C9                | 45 % w/v PEP 629 | 100 mM HEPES; pH 7.5          | none                      |
| C10               | 25 % w/v PEP 629 | 100 mM TRIS; pH 8.5           | none                      |
| C11               | 35 % w/v PEP 629 | 100 mM TRIS; pH 8.5           | none                      |
| C12               | 45 % w/v PEP 629 | 100 mM TRIS; pH 8.5           | none                      |
| D1                | 25 % w/v PEP 629 | 100 mM Sodium acetate; pH 4.6 | 50 mM Magnesium chloride  |
| D2                | 35 % w/v PEP 629 | 100 mM Sodium acetate; pH 4.6 | 200 mM Ammonium sulfate   |
| D3                | 45 % w/v PEP 629 | 100 mM Sodium acetate; pH 4.6 | 300 mM Potassium chloride |
| D4                | 25 % w/v PEP 629 | 100 mM MES; pH 6.5            | 50 mM Magnesium chloride  |
| D5                | 35 % w/v PEP 629 | 100 mM MES; pH 6.5            | 200 mM Ammonium sulfate   |
| D6                | 45 % w/v PEP 629 | 100 mM MES; pH 6.5            | 300 mM Potassium chloride |
| D7                | 25 % w/v PEP 629 | 100 mM HEPES; pH 7.5          | 50 mM Magnesium chloride  |
| D8                | 35 % w/v PEP 629 | 100 mM HEPES; pH 7.5          | 200 mM Ammonium sulfate   |
| D9                | 45 % w/v PEP 629 | 100 mM HEPES; pH 7.5          | 300 mM Potassium chloride |
| D10               | 25 % w/v PEP 629 | 100 mM TRIS; pH 8.5           | 50 mM Magnesium chloride  |
| D11               | 35 % w/v PEP 629 | 100 mM TRIS; pH 8.5           | 200 mM Ammonium sulfate   |
| D12               | 45 % w/v PEP 629 | 100 mM TRIS; pH 8.5           | 300 mM Potassium chloride |

| Pentaerythritol 3 |                  |                               |                           |
|-------------------|------------------|-------------------------------|---------------------------|
| No.               | Precipitant      | Buffer*                       | Additive                  |
| E1                | 25 % w/v PEE 270 | 100 mM Sodium acetate; pH 4.6 | none                      |
| E2                | 35 % w/v PEE 270 | 100 mM Sodium acetate; pH 4.6 | none                      |
| E3                | 45 % w/v PEE 270 | 100 mM Sodium acetate; pH 4.6 | none                      |
| E4                | 25 % w/v PEE 270 | 100 mM MES; pH 6.5            | none                      |
| E5                | 35 % w/v PEE 270 | 100 mM MES; pH 6.5            | none                      |
| E6                | 45 % w/v PEE 270 | 100 mM MES; pH 6.5            | none                      |
| E7                | 25 % w/v PEE 270 | 100 mM HEPES; pH 7.5          | none                      |
| E8                | 35 % w/v PEE 270 | 100 mM HEPES; pH 7.5          | none                      |
| E9                | 45 % w/v PEE 270 | 100 mM HEPES; pH 7.5          | none                      |
| E10               | 25 % w/v PEE 270 | 100 mM TRIS; pH 8.5           | none                      |
| E11               | 35 % w/v PEE 270 | 100 mM TRIS; pH 8.5           | none                      |
| E12               | 45 % w/v PEE 270 | 100 mM TRIS; pH 8.5           | none                      |
| F1                | 25 % w/v PEE 270 | 100 mM Sodium acetate; pH 4.6 | 50 mM Magnesium chloride  |
| F2                | 35 % w/v PEE 270 | 100 mM Sodium acetate; pH 4.6 | 200 mM Ammonium sulfate   |
| F3                | 45 % w/v PEE 270 | 100 mM Sodium acetate; pH 4.6 | 400 mM Potassium chloride |
| F4                | 25 % w/v PEE 270 | 100 mM MES; pH 6.5            | 50 mM Magnesium chloride  |
| F5                | 35 % w/v PEE 270 | 100 mM MES; pH 6.5            | 200 mM Ammonium sulfate   |
| F6                | 45 % w/v PEE 270 | 100 mM MES; pH 6.5            | 400 mM Potassium chloride |
| F7                | 25 % w/v PEE 270 | 100 mM HEPES; pH 7.5          | 50 mM Magnesium chloride  |
| F8                | 35 % w/v PEE 270 | 100 mM HEPES; pH 7.5          | 200 mM Ammonium sulfate   |
| F9                | 45 % w/v PEE 270 | 100 mM HEPES; pH 7.5          | 400 mM Potassium chloride |
| F10               | 25 % w/v PEE 270 | 100 mM TRIS; pH 8.5           | 50 mM Magnesium chloride  |
| F11               | 35 % w/v PEE 270 | 100 mM TRIS; pH 8.5           | 200 mM Ammonium sulfate   |
| F12               | 45 % w/v PEE 270 | 100 mM TRIS; pH 8.5           | 400 mM Potassium chloride |

| Pentaerythritol 4 |                  |                               |                           |
|-------------------|------------------|-------------------------------|---------------------------|
| No.               | Precipitant      | Buffer*                       | Additive                  |
| G1                | 25 % w/v PEE 797 | 100 mM Sodium acetate; pH 4.6 | none                      |
| G2                | 35 % w/v PEE 797 | 100 mM Sodium acetate; pH 4.6 | none                      |
| G3                | 45 % w/v PEE 797 | 100 mM Sodium acetate; pH 4.6 | none                      |
| G4                | 25 % w/v PEE 797 | 100 mM MES; pH 6.5            | none                      |
| G5                | 35 % w/v PEE 797 | 100 mM MES; pH 6.5            | none                      |
| G6                | 45 % w/v PEE 797 | 100 mM MES; pH 6.5            | none                      |
| G7                | 25 % w/v PEE 797 | 100 mM HEPES; pH 7.5          | none                      |
| G8                | 35 % w/v PEE 797 | 100 mM HEPES; pH 7.5          | none                      |
| G9                | 45 % w/v PEE 797 | 100 mM HEPES; pH 7.5          | none                      |
| G10               | 25 % w/v PEE 797 | 100 mM TRIS; pH 8.5           | none                      |
| G11               | 35 % w/v PEE 797 | 100 mM TRIS; pH 8.5           | none                      |
| G12               | 45 % w/v PEE 797 | 100 mM TRIS; pH 8.5           | none                      |
| H1                | 25 % w/v PEE 797 | 100 mM Sodium acetate; pH 4.6 | 50 mM Magnesium chloride  |
| H2                | 35 % w/v PEE 797 | 100 mM Sodium acetate; pH 4.6 | 200 mM Ammonium sulfate   |
| H3                | 45 % w/v PEE 797 | 100 mM Sodium acetate; pH 4.6 | 400 mM Potassium chloride |
| H4                | 25 % w/v PEE 797 | 100 mM MES; pH 6.5            | 50 mM Magnesium chloride  |
| H5                | 35 % w/v PEE 797 | 100 mM MES; pH 6.5            | 200 mM Ammonium sulfate   |
| H6                | 45 % w/v PEE 797 | 100 mM MES; pH 6.5            | 400 mM Potassium chloride |
| H7                | 25 % w/v PEE 797 | 100 mM HEPES; pH 7.5          | 50 mM Magnesium chloride  |
| H8                | 35 % w/v PEE 797 | 100 mM HEPES; pH 7.5          | 200 mM Ammonium sulfate   |
| H9                | 45 % w/v PEE 797 | 100 mM HEPES; pH 7.5          | 400 mM Potassium chloride |
| H10               | 25 % w/v PEE 797 | 100 mM TRIS; pH 8.5           | 50 mM Magnesium chloride  |
| H11               | 35 % w/v PEE 797 | 100 mM TRIS; pH 8.5           | 200 mM Ammonium sulfate   |
| H12               | 45 % w/v PEE 797 | 100 mM TRIS; pH 8.5           | 400 mM Potassium chloride |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

## JBScreen PACT++

| PACT++ 1 |                    |                               |                           |
|----------|--------------------|-------------------------------|---------------------------|
| No.      | Precipitant        | Buffer*                       | Additive                  |
| A1       | 25 % w/v PEG 1,500 | 100 mM SPG buffer; pH 4.0     | none                      |
| A2       | 25 % w/v PEG 1,500 | 100 mM SPG buffer; pH 5.0     | none                      |
| A3       | 25 % w/v PEG 1,500 | 100 mM SPG buffer; pH 6.0     | none                      |
| A4       | 25 % w/v PEG 1,500 | 100 mM SPG buffer; pH 7.0     | none                      |
| A5       | 25 % w/v PEG 1,500 | 100 mM SPG buffer; pH 8.0     | none                      |
| A6       | 25 % w/v PEG 1,500 | 100 mM SPG buffer; pH 9.0     | none                      |
| A7       | 20 % w/v PEG 6,000 | 100 mM Sodium acetate; pH 5.0 | 200 mM Sodium chloride    |
| A8       | 20 % w/v PEG 6,000 | 100 mM Sodium acetate; pH 5.0 | 200 mM Ammonium chloride  |
| A9       | 20 % w/v PEG 6,000 | 100 mM Sodium acetate; pH 5.0 | 200 mM Lithium chloride   |
| A10      | 20 % w/v PEG 6,000 | 100 mM Sodium acetate; pH 5.0 | 200 mM Magnesium chloride |
| A11      | 20 % w/v PEG 6,000 | 100 mM Sodium acetate; pH 5.0 | 200 mM Calcium chloride   |
| A12      | 20 % w/v PEG 6,000 | 100 mM Sodium acetate; pH 5.0 | 10 mM Zinc chloride       |
| B1       | 25 % w/v PEG 1,500 | 100 mM MIB buffer; pH 4.0     | none                      |
| B2       | 25 % w/v PEG 1,500 | 100 mM MIB buffer; pH 5.0     | none                      |
| B3       | 25 % w/v PEG 1,500 | 100 mM MIB buffer; pH 6.0     | none                      |
| B4       | 25 % w/v PEG 1,500 | 100 mM MIB buffer; pH 7.0     | none                      |
| B5       | 25 % w/v PEG 1,500 | 100 mM MIB buffer; pH 8.0     | none                      |
| B6       | 25 % w/v PEG 1,500 | 100 mM MIB buffer; pH 9.0     | none                      |
| B7       | 20 % w/v PEG 6,000 | 100 mM MES; pH 6.0            | 200 mM Sodium chloride    |
| B8       | 20 % w/v PEG 6,000 | 100 mM MES; pH 6.0            | 200 mM Ammonium chloride  |
| B9       | 20 % w/v PEG 6,000 | 100 mM MES; pH 6.0            | 200 mM Lithium chloride   |
| B10      | 20 % w/v PEG 6,000 | 100 mM MES; pH 6.0            | 200 mM Magnesium chloride |
| B11      | 20 % w/v PEG 6,000 | 100 mM MES; pH 6.0            | 200 mM Calcium chloride   |
| B12      | 20 % w/v PEG 6,000 | 100 mM MES; pH 6.0            | 10 mM Zinc chloride       |
| PACT++ 2 |                    |                               |                           |
| No.      | Precipitant        | Buffer*                       | Additive                  |
| C1       | 25 % w/v PEG 1,500 | 100 mM TBG Buffer; pH 4.0     | none                      |
| C2       | 25 % w/v PEG 1,500 | 100 mM TBG Buffer; pH 5.0     | none                      |
| C3       | 25 % w/v PEG 1,500 | 100 mM TBG Buffer; pH 6.0     | none                      |
| C4       | 25 % w/v PEG 1,500 | 100 mM TBG Buffer; pH 7.0     | none                      |
| C5       | 25 % w/v PEG 1,500 | 100 mM TBG Buffer; pH 8.0     | none                      |
| C6       | 25 % w/v PEG 1,500 | 100 mM TBG Buffer; pH 9.0     | none                      |
| C7       | 20 % w/v PEG 6,000 | 100 mM HEPES; pH 7.0          | 200 mM Sodium chloride    |
| C8       | 20 % w/v PEG 6,000 | 100 mM HEPES; pH 7.0          | 200 mM Ammonium chloride  |
| C9       | 20 % w/v PEG 6,000 | 100 mM HEPES; pH 7.0          | 200 mM Lithium chloride   |
| C10      | 20 % w/v PEG 6,000 | 100 mM HEPES; pH 7.0          | 200 mM Magnesium chloride |
| C11      | 20 % w/v PEG 6,000 | 100 mM HEPES; pH 7.0          | 200 mM Calcium chloride   |
| C12      | 20 % w/v PEG 6,000 | 100 mM HEPES; pH 7.0          | 10 mM Zinc chloride       |
| D1       | 25 % w/v PEG 1,500 | 100 mM MMT buffer; pH 4.0     | none                      |
| D2       | 25 % w/v PEG 1,500 | 100 mM MMT buffer; pH 5.0     | none                      |
| D3       | 25 % w/v PEG 1,500 | 100 mM MMT buffer; pH 6.0     | none                      |
| D4       | 25 % w/v PEG 1,500 | 100 mM MMT buffer; pH 7.0     | none                      |
| D5       | 25 % w/v PEG 1,500 | 100 mM MMT buffer; pH 8.0     | none                      |
| D6       | 25 % w/v PEG 1,500 | 100 mM MMT buffer; pH 9.0     | none                      |
| D7       | 20 % w/v PEG 6,000 | 100 mM TRIS; pH 8.0           | 200 mM Sodium chloride    |
| D8       | 20 % w/v PEG 6,000 | 100 mM TRIS; pH 8.0           | 200 mM Ammonium chloride  |
| D9       | 20 % w/v PEG 6,000 | 100 mM TRIS; pH 8.0           | 200 mM Lithium chloride   |
| D10      | 20 % w/v PEG 6,000 | 100 mM TRIS; pH 8.0           | 200 mM Magnesium chloride |
| D11      | 20 % w/v PEG 6,000 | 100 mM TRIS; pH 8.0           | 200 mM Calcium chloride   |
| D12      | 20 % w/v PEG 6,000 | 100 mM TRIS; pH 8.0           | 10 mM Zinc chloride       |

| <b>PACT++ 3</b> |                    |                                 |                                   |
|-----------------|--------------------|---------------------------------|-----------------------------------|
| <b>No.</b>      | <b>Precipitant</b> | <b>Buffer*</b>                  | <b>Additive</b>                   |
| E1              | 20 % w/v PEG 3,350 | none                            | 200 mM Sodium fluoride            |
| E2              | 20 % w/v PEG 3,350 | none                            | 200 mM Sodium bromide             |
| E3              | 20 % w/v PEG 3,350 | none                            | 200 mM Sodium iodide              |
| E4              | 20 % w/v PEG 3,350 | none                            | 200 mM Potassium thiocyanate      |
| E5              | 20 % w/v PEG 3,350 | none                            | 200 mM Sodium nitrate             |
| E6              | 20 % w/v PEG 3,350 | none                            | 200 mM Sodium formate             |
| E7              | 20 % w/v PEG 3,350 | none                            | 200 mM Sodium acetate             |
| E8              | 20 % w/v PEG 3,350 | none                            | 200 mM Sodium sulfate             |
| E9              | 20 % w/v PEG 3,350 | none                            | 200 mM Potassium Sodium tartrate  |
| E10             | 20 % w/v PEG 3,350 | none                            | 200 mM Sodium Potassium phosphate |
| E11             | 20 % w/v PEG 3,350 | none                            | 200 mM tri-Sodium citrate         |
| E12             | 20 % w/v PEG 3,350 | none                            | 200 mM di-Sodium malonate         |
| F1              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM Sodium fluoride            |
| F2              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM Sodium bromide             |
| F3              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM Sodium iodide              |
| F4              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM Potassium thiocyanate      |
| F5              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM Sodium nitrate             |
| F6              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM Sodium formate             |
| F7              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM Sodium acetate             |
| F8              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM Sodium sulfate             |
| F9              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM Potassium Sodium tartrate  |
| F10             | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM Sodium Potassium phosphate |
| F11             | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM tri-Sodium citrate         |
| F12             | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 6.5 | 200 mM di-Sodium malonate         |
| <b>PACT++ 4</b> |                    |                                 |                                   |
| <b>No.</b>      | <b>Precipitant</b> | <b>Buffer*</b>                  | <b>Additive</b>                   |
| G1              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM Sodium fluoride            |
| G2              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM Sodium bromide             |
| G3              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM Sodium iodide              |
| G4              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM Potassium thiocyanate      |
| G5              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM Sodium nitrate             |
| G6              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM Sodium formate             |
| G7              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM Sodium acetate             |
| G8              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM Sodium sulfate             |
| G9              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM Potassium Sodium tartrate  |
| G10             | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | none                              |
| G11             | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM tri-Sodium citrate         |
| G12             | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 7.5 | 200 mM di-Sodium malonate         |
| H1              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM Sodium fluoride            |
| H2              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM Sodium bromide             |
| H3              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM Sodium iodide              |
| H4              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM Potassium thiocyanate      |
| H5              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM Sodium nitrate             |
| H6              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM Sodium formate             |
| H7              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM Sodium acetate             |
| H8              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM Sodium sulfate             |
| H9              | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM Potassium Sodium tartrate  |
| H10             | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 20 mM Sodium Potassium phosphate  |
| H11             | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM tri-Sodium citrate         |
| H12             | 20 % w/v PEG 3,350 | 100 mM BIS-TRIS propane; pH 8.5 | 200 mM di-Sodium malonate         |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

## JBScreen JCSG++

| JCSG++ 1 | Precipitant 1      | Precipitant 2           | Buffer*                                    | Additive                                    |
|----------|--------------------|-------------------------|--------------------------------------------|---------------------------------------------|
| No.      |                    |                         |                                            |                                             |
| A1       | 50 % v/v PEG 400   | none                    | 100 mM Sodium acetate; pH 4.5              | 200 mM Lithium sulfate                      |
| A2       | 20 % w/v PEG 3,000 | none                    | 100 mM tri-Sodium citrate; pH 5.5          | none                                        |
| A3       | 20 % w/v PEG 3,350 | none                    | none                                       | 200 mM di-Ammonium hydrogen citrate; pH 5.0 |
| A4       | 30 % v/v MPD       | none                    | 100 mM Sodium acetate; pH 4.6              | 20 mM Calcium chloride                      |
| A5       | 20 % w/v PEG 3,350 | none                    | none                                       | 200 mM Magnesium formate; pH 5.9            |
| A6       | 20 % w/v PEG 1,000 | none                    | 100 mM Potassium phosphate citrate; pH 4.2 | 200 mM Lithium sulfate                      |
| A7       | 20 % w/v PEG 8,000 | none                    | 100 mM CHES; pH 9.5                        | none                                        |
| A8       | 20 % w/v PEG 3,350 | none                    | none                                       | 200 mM Ammonium formate; pH 6.6             |
| A9       | 20 % w/v PEG 3,350 | none                    | none                                       | 200 mM Ammonium chloride; pH 6.3            |
| A10      | 20 % w/v PEG 3,350 | none                    | none                                       | 200 mM Potassium formate; pH 7.3            |
| A11      | 50 % v/v MPD       | none                    | 100 mM TRIS; pH 8.5                        | 200 mM Ammonium di-hydrogen phosphate       |
| A12      | 20 % w/v PEG 3,350 | none                    | none                                       | 200 mM Potassium nitrate; pH 6.9            |
| B1       | none               | none                    | 100 mM tri-Sodium citrate; pH 4.0          | 800 mM Ammonium sulfate                     |
| B2       | 20 % w/v PEG 3,350 | none                    | none                                       | 200 mM Sodium thiocyanate; pH 6.9           |
| B3       | 20 % w/v PEG 6,000 | none                    | 100 mM BICINE; pH 9.0                      | none                                        |
| B4       | 10 % w/v PEG 8,000 | 8 % v/v Ethylene glycol | 100 mM HEPES; pH 7.5                       | none                                        |
| B5       | 40 % v/v MPD       | 5 % w/v PEG 8,000       | 100 mM MES; pH 6.5                         | none                                        |
| B6       | 40 % v/v Ethanol   | 5 % w/v PEG 1,000       | 100 mM Potassium phosphate citrate; pH 4.2 | none                                        |
| B7       | 8 % w/v PEG 4,000  | none                    | 100 mM Sodium acetate; pH 4.6              | none                                        |
| B8       | 10 % w/v PEG 8,000 | none                    | 100 mM TRIS; pH 7.0                        | 200 mM Magnesium chloride                   |
| B9       | 20 % w/v PEG 6,000 | none                    | 100 mM tri-Sodium citrate; pH 5.0          | none                                        |
| B10      | 50 % v/v PEG 200   | none                    | 100 mM MES; pH 6.5                         | 200 mM Magnesium chloride                   |
| B11      | none               | none                    | none                                       | 1.6 M tri-Sodium citrate                    |
| B12      | 20 % w/v PEG 3,350 | none                    | none                                       | 200 mM tri-Potassium citrate; pH 8.3        |

| JCSG++ 2 | Precipitant 1                       | Precipitant 2                          | Buffer*                                    | Additive                              |
|----------|-------------------------------------|----------------------------------------|--------------------------------------------|---------------------------------------|
| No.      |                                     |                                        |                                            |                                       |
| C1       | 20 % w/v PEG 8,000                  | none                                   | 100 mM Potassium phosphate citrate; pH 4.2 | 200 mM Sodium chloride                |
| C2       | 20 % w/v PEG 6,000                  | none                                   | 100 mM tri-Sodium citrate; pH 4.0          | 1 M Lithium chloride                  |
| C3       | 20 % w/v PEG 3,350                  | none                                   | none                                       | 200 mM Ammonium nitrate; pH 6.3       |
| C4       | 10 % w/v PEG 6,000                  | none                                   | 100 mM HEPES; pH 7.0                       | none                                  |
| C5       | 800 mM Sodium di-hydrogen phosphate | 800 mM Potassium di-hydrogen phosphate | 100 mM HEPES; pH 7.5                       | none                                  |
| C6       | 40 % v/v PEG 300                    | none                                   | 100 mM Potassium phosphate citrate; pH 4.2 | none                                  |
| C7       | 10 % w/v PEG 3,000                  | none                                   | 100 mM Sodium acetate; pH 4.5              | 200 mM Zinc acetate                   |
| C8       | 20 % v/v Ethanol                    | none                                   | 100 mM TRIS; pH 8.5                        | none                                  |
| C9       | 25 % v/v 1,2-Propanediol            | 10 % v/v Glycerol                      | 100 mM Sodium Potassium phosphate; pH 6.2  | none                                  |
| C10      | 10 % w/v PEG 20,000                 | 2 % v/v 1,4-Dioxane                    | 100 mM BICINE; pH 9.0                      | none                                  |
| C11      | none                                | none                                   | 100 mM Sodium acetate; pH 4.6              | 2 M Ammonium sulfate                  |
| C12      | 10 % w/v PEG 1,000                  | 10 % w/v PEG 8,000                     | none                                       | none                                  |
| D1       | 24 % w/v PEG 1,500                  | 20 % v/v Glycerol                      | none                                       | none                                  |
| D2       | 30 % v/v PEG 400                    | none                                   | 100 mM HEPES; pH 7.5                       | 200 mM Magnesium chloride             |
| D3       | 50 % v/v PEG 200                    | none                                   | 100 mM Sodium Potassium phosphate; pH 6.2  | 200 mM Sodium chloride                |
| D4       | 30 % w/v PEG 8,000                  | none                                   | 100 mM Sodium acetate; pH 4.5              | 200 mM Lithium sulfate                |
| D5       | 70 % v/v MPD                        | none                                   | 100 mM HEPES; pH 7.5                       | none                                  |
| D6       | 20 % w/v PEG 8,000                  | none                                   | 100 mM TRIS; pH 8.5                        | 200 mM Magnesium chloride             |
| D7       | 40 % v/v PEG 400                    | none                                   | 100 mM TRIS; pH 8.5                        | 200 mM Lithium sulfate                |
| D8       | 40 % v/v MPD                        | none                                   | 100 mM TRIS; pH 8.0                        | none                                  |
| D9       | 25.5 % w/v PEG 4,000                | 15 % v/v Glycerol                      | none                                       | 170 mM Ammonium sulfate               |
| D10      | 40 % v/v PEG 300                    | none                                   | 100 mM MES; pH 6.5                         | 200 mM Calcium acetate                |
| D11      | 14 % v/v 2-Propanol                 | 30 % v/v Glycerol                      | 70 mM Sodium acetate; pH 4.6               | 140 mM Calcium chloride               |
| D12      | 16 % w/v PEG 8,000                  | 20 % v/v Glycerol                      | none                                       | 40 mM Potassium di-hydrogen phosphate |



| JCSG++ 3 |                                      |                  |                                   |                                    |
|----------|--------------------------------------|------------------|-----------------------------------|------------------------------------|
| No.      | Precipitant 1                        | Precipitant 2    | Buffer*                           | Additive                           |
| E1       | none                                 | None             | 100 mM MES; pH 6.5                | 1 M tri-Sodium citrate             |
| E2       | 2 M Ammonium sulfate                 | None             | 100 mM MES; pH 6.5                | 200 mM Sodium chloride             |
| E3       | 10 % v/v 2-Propanol                  | None             | 100 mM HEPES; pH 7.5              | 200 mM Sodium chloride             |
| E4       | 1.26 M Ammonium sulfate              | None             | 100 mM TRIS; pH 8.5               | 200 mM Lithium sulfate             |
| E5       | 40 % v/v MPD                         | None             | 100 mM CAPS; pH 10.5              | none                               |
| E6       | 20 % w/v PEG 3,000                   | None             | 100 mM Imidazole; pH 8.0          | 200 mM Zinc acetate                |
| E7       | 10 % v/v 2-Propanol                  | None             | 100 mM MES; pH 6.5                | 200 mM Zinc acetate                |
| E8       | none                                 | None             | 100 mM Sodium acetate; pH 4.5     | 1 M di-Ammonium hydrogen phosphate |
| E9       | none                                 | None             | 100 mM MES; pH 6.5                | 1.6 M Magnesium sulfate            |
| E10      | 10 % w/v PEG 6,000                   | None             | 100 mM BICINE; pH 9.0             | none                               |
| E11      | 14.4 % w/v PEG 8,000                 | 20% v/v Glycerol | 80 mM MES; pH 6.5                 | 160 mM Calcium acetate             |
| E12      | 10 % w/v PEG 8,000                   | None             | 100 mM Imidazole; pH 8.0          | none                               |
| F1       | 30 % v/v Jeffamine® M-600            | None             | 100 mM MES; pH 6.5                | 50 mM Cesium chloride              |
| F2       | none                                 | None             | 100 mM tri-Sodium citrate; pH 5.0 | 3.15 M Ammonium sulfate            |
| F3       | 20 % v/v MPD                         | None             | 100 mM TRIS; pH 8.0               | none                               |
| F4       | 20 % v/v Jeffamine® M-600            | None             | 100 mM HEPES; pH 7.5              | none                               |
| F5       | 50 % v/v Ethylene glycol             | None             | 100 mM TRIS; pH 8.5               | 200 mM Magnesium chloride          |
| F6       | 10 % v/v MPD                         | None             | 100 mM BICINE; pH 9.0             | none                               |
| F7       | none                                 | None             | none                              | 800 mM di-Sodium succinate; pH 7.0 |
| F8       | none                                 | None             | none                              | 2.1 M di-Sodium DL-malate; pH 7.0  |
| F9       | none                                 | None             | none                              | 2.4 M di-Sodium malonate; pH 7.0   |
| F10      | 0.5 % w/v Jeffamine® ED-2001; pH 7.0 | None             | 100 mM HEPES; pH 7.0              | 1.1 M di-Sodium malonate; pH 7.0   |
| F11      | 1 % w/v PEG 2,000 MME                | None             | 100 mM HEPES; pH 7.0              | 1 M di-Sodium succinate; pH 7.0    |
| F12      | 30 % v/v Jeffamine® M-600; pH 7.0    | None             | 100 mM HEPES; pH 7.0              | none                               |

| JCSG++ 4 |                                               |  |                         |                                                                                                      |
|----------|-----------------------------------------------|--|-------------------------|------------------------------------------------------------------------------------------------------|
| No.      | Precipitant                                   |  | Buffer*                 | Additive                                                                                             |
| G1       | 30 % w/v Jeffamine® ED-2001; pH 7.0           |  | 100 mM HEPES; pH 7.0    | none                                                                                                 |
| G2       | 22 % w/v Poly(acrylic acid sodium salt) 5,100 |  | 100 mM HEPES; pH 7.5    | 20 mM Magnesium chloride                                                                             |
| G3       | 20 % w/v Polyvinylpyrrolidone K15             |  | 100 mM TRIS; pH 8.5     | 100 mM Cobalt (II) chloride                                                                          |
| G4       | 20 % w/v PEG 2,000                            |  | 100 mM TRIS; pH 8.5     | 200 mM Trimethylamine N-oxide                                                                        |
| G5       | 12 % w/v PEG 3,350                            |  | 100 mM HEPES; pH 7.5    | 5 mM Cobalt (II) chloride, 5 mM Cadmium chloride, 5 mM Nickel (II) chloride, 5 mM Magnesium chloride |
| G6       | 20 % w/v PEG 3,350                            |  | none                    | 200 mM di-Sodium malonate; pH 7.0                                                                    |
| G7       | 15 % w/v PEG 3,350                            |  | none                    | 100 mM di-Sodium succinate; pH 7.0                                                                   |
| G8       | 20 % w/v PEG 3,350                            |  | none                    | 150 mM di-Sodium DL-malate; pH 7.0                                                                   |
| G9       | 30 % w/v PEG 2,000 MME                        |  | none                    | 100 mM Potassium thiocyanate                                                                         |
| G10      | 30 % w/v PEG 2,000 MME                        |  | none                    | 150 mM Potassium bromide                                                                             |
| G11      | none                                          |  | 100 mM BIS-TRIS; pH 5.5 | 2 M Ammonium sulfate                                                                                 |
| G12      | none                                          |  | 100 mM BIS-TRIS; pH 5.5 | 3 M Sodium chloride                                                                                  |
| H1       | none                                          |  | 100 mM BIS-TRIS; pH 5.5 | 300 mM Magnesium formate                                                                             |
| H2       | 1 % w/v PEG 3,350                             |  | 100 mM BIS-TRIS; pH 5.5 | 1 M Ammonium sulfate                                                                                 |
| H3       | 25 % w/v PEG 3,350                            |  | 100 mM BIS-TRIS; pH 5.5 | none                                                                                                 |
| H4       | 45 % v/v MPD                                  |  | 100 mM BIS-TRIS; pH 5.5 | 200 mM Calcium chloride                                                                              |
| H5       | 45 % v/v MPD                                  |  | 100 mM BIS-TRIS; pH 5.5 | 200 mM Ammonium acetate                                                                              |
| H6       | 17 % w/v PEG 10,000                           |  | 100 mM BIS-TRIS; pH 5.5 | 100 mM Ammonium acetate                                                                              |
| H7       | 25 % w/v PEG 3,350                            |  | 100 mM BIS-TRIS; pH 5.5 | 200 mM Ammonium sulfate                                                                              |
| H8       | 25 % w/v PEG 3,350                            |  | 100 mM BIS-TRIS; pH 5.5 | 200 mM Sodium chloride                                                                               |
| H9       | 25 % w/v PEG 3,350                            |  | 100 mM BIS-TRIS; pH 5.5 | 200 mM Lithium sulfate                                                                               |
| H10      | 25 % w/v PEG 3,350                            |  | 100 mM BIS-TRIS; pH 5.5 | 200 mM Ammonium acetate                                                                              |
| H11      | 25 % w/v PEG 3,350                            |  | 100 mM BIS-TRIS; pH 5.5 | 200 mM Magnesium chloride                                                                            |
| H12      | 45 % v/v MPD                                  |  | 100 mM HEPES; pH 7.5    | 200 mM Ammonium acetate                                                                              |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

## Pi-Screens

| Pi-minimal<br>No. | Precipitant                               | Buffer*                            | Additive                        |
|-------------------|-------------------------------------------|------------------------------------|---------------------------------|
| A1                | 600 mM Sodium Potassium phosphate; pH 4.0 | 150 mM Sodium formate; pH 4.0      | 160 mM Potassium bromide        |
| A2                | 24 % v/v PEG 550 MME                      | 150 mM Sodium acetate; pH 4.5      | 8 % v/v PEG 300                 |
| A3                | 2 M Ammonium nitrate                      | 150 mM di-Sodium DL-malate; pH 5.0 | 160 mM Magnesium sulfate        |
| A4                | 10 % w/v PEG 20,000                       | 150 mM tri-Sodium citrate; pH 5.5  | 32 mM Sodium fluoride           |
| A5                | 30 % w/v PEG 1,000                        | 150 mM MES; pH 6.0                 | 80 mM Potassium thiocyanate     |
| A6                | 1.6 M Sodium chloride                     | 150 mM MES; pH 6.5                 | 160 mM Sodium iodide            |
| A7                | 24 % w/v PEG 4,000                        | 150 mM MOPS; pH 7.0                | 8 % v/v 1,2-Propanediol         |
| A8                | 800 mM Lithium sulfate                    | 150 mM HEPES; pH 7.5               | none                            |
| A9                | 20 % w/v PEG 5,000 MME                    | 150 mM TRIS; pH 8.0                | 8 % v/v Ethylene glycol         |
| A10               | 36 % w/v Glycerol                         | 150 mM TAPS; pH 8.5                | 80 mM Potassium Sodium tartrate |
| A11               | 1.4 M Ammonium sulfate                    | 150 mM AMPD - TRIS buffer; pH 9.0  | 8 % v/v MPD                     |
| A12               | 20 % w/v PEG 8,000                        | 150 mM CAPSO; pH 9.5               | 8 % v/v 2-Butanol               |
| B1                | 2.29 M Ammonium nitrate                   | 150 mM Sodium formate; pH 4.0      | 70 mM Calcium chloride          |
| B2                | 11.4 % w/v PEG 20,000                     | 150 mM Sodium acetate; pH 4.5      | 7 % v/v Ethylene glycol         |
| B3                | 34.3 % w/v PEG 1,000                      | 150 mM di-Sodium DL-malate; pH 5.0 | 70 mM Potassium Sodium tartrate |
| B4                | 1.83 M Sodium chloride                    | 150 mM tri-Sodium citrate; pH 5.5  | 7 % v/v MPD                     |
| B5                | 27.4 % w/v PEG 4,000                      | 150 mM MES; pH 6.0                 | 7 % v/v 2-Butanol               |
| B6                | 910 mM Lithium sulfate                    | 150 mM MES; pH 6.5                 | 140 mM Potassium bromide        |
| B7                | 22.9 % w/v PEG 5,000 MME                  | 150 mM MOPS; pH 7.0                | 7 % v/v PEG 300                 |
| B8                | 41.1 % w/v Glycerol                       | 150 mM HEPES; pH 7.5               | 140 mM Magnesium sulfate        |
| B9                | 1.6 M Ammonium sulfate                    | 150 mM TRIS; pH 8.0                | 28 mM Sodium fluoride           |
| B10               | 22.9 % w/v PEG 8,000                      | 150 mM TAPS; pH 8.5                | 70 mM Potassium thiocyanate     |
| B11               | 690 mM Sodium Potassium phosphate; pH 9.0 | 150 mM AMPD - TRIS buffer; pH 9.0  | 140 mM Sodium iodide            |
| B12               | 28 % v/v PEG 550 MME                      | 150 mM CAPSO; pH 9.5               | 7 % v/v 1,2-Propanediol         |
| C1                | 38.6 % w/v PEG 1,000                      | 150 mM Sodium formate; pH 4.0      | 120 mM Magnesium sulfate        |
| C2                | 2.06 M Sodium chloride                    | 150 mM Sodium acetate; pH 4.5      | 24 mM Sodium fluoride           |
| C3                | 30.9 % w/v PEG 4,000                      | 150 mM di-Sodium DL-malate; pH 5.0 | 60 mM Potassium thiocyanate     |
| C4                | 1.03 M Lithium sulfate                    | 150 mM tri-Sodium citrate; pH 5.5  | 120 mM Sodium iodide            |
| C5                | 25.7 % w/v PEG 5,000 MME                  | 150 mM MES; pH 6.0                 | 6 % v/v 1,2-Propanediol         |
| C6                | 46.3 % w/v Glycerol                       | 150 mM MES; pH 6.5                 | 60 mM Calcium chloride          |
| C7                | 1.8 M Ammonium sulfate                    | 150 mM MOPS; pH 7.0                | 6 % v/v Ethylene glycol         |
| C8                | 25.7 % w/v PEG 8,000                      | 150 mM HEPES; pH 7.5               | 60 mM Potassium Sodium tartrate |
| C9                | 770 mM Sodium Potassium phosphate; pH 8.0 | 150 mM TRIS; pH 8.0                | 6 % v/v MPD                     |
| C10               | 31 % v/v PEG 550 MME                      | 150 mM TAPS; pH 8.5                | 6 % v/v 2-Butanol               |
| C11               | 2.57 M Ammonium nitrate                   | 150 mM AMPD - TRIS buffer; pH 9.0  | 120 mM Potassium bromide        |
| C12               | 12.9 % w/v PEG 20,000                     | 150 mM CAPSO; pH 9.5               | 6 % v/v PEG 300                 |
| D1                | 34.3 % w/v PEG 4,000                      | 150 mM Sodium formate; pH 4.0      | none                            |
| D2                | 1.14 M Lithium sulfate                    | 150 mM Sodium acetate; pH 4.5      | 5 % v/v MPD                     |
| D3                | 28.6 % w/v PEG 5,000 MME                  | 150 mM di-Sodium DL-malate; pH 5.0 | 5 % v/v 2-Butanol               |
| D4                | 51.4 % w/v Glycerol                       | 150 mM tri-Sodium citrate; pH 5.5  | 100 mM Potassium bromide        |
| D5                | 2 M Ammonium sulfate                      | 150 mM MES; pH 6.0                 | 5 % v/v PEG 300                 |
| D6                | 28.6 % w/v PEG 8,000                      | 150 mM MES; pH 6.5                 | 100 mM Magnesium sulfate        |
| D7                | 860 mM Sodium Potassium phosphate; pH 7.0 | 150 mM MOPS; pH 7.0                | 20 mM Sodium fluoride           |
| D8                | 34 % v/v PEG 550 MME                      | 150 mM HEPES; pH 7.5               | 50 mM Potassium thiocyanate     |
| D9                | 2.86 M Ammonium nitrate                   | 150 mM TRIS; pH 8.0                | 100 mM Sodium iodide            |
| D10               | 14.3 % w/v PEG 20,000                     | 150 mM TAPS; pH 8.5                | 5 % v/v 1,2-Propanediol         |
| D11               | 42.9 % w/v PEG 1,000                      | none                               | 50 mM Calcium chloride          |
| D12               | 2.29 M Sodium chloride                    | 150 mM CAPSO; pH 9.5               | 5 % v/v Ethylene glycol         |

| Pi-minimal<br>No. | Precipitant                                  | Buffer*                            | Additive                                   |
|-------------------|----------------------------------------------|------------------------------------|--------------------------------------------|
| E1                | 31.4 % w/v PEG 5,000 MME                     | 150 mM Sodium formate; pH 4.0      | 40 mM Potassium thiocyanate                |
| E2                | 56.6 % w/v Glycerol                          | 150 mM Sodium acetate; pH 4.5      | 80 mM Sodium iodide                        |
| E3                | 2.2 M Ammonium sulfate                       | 150 mM di-Sodium DL-malate; pH 5.0 | 4 % v/v 1,2-Propanediol                    |
| E4                | 31.4 % w/v PEG 8,000                         | 150 mM tri-Sodium citrate; pH 5.5  | none                                       |
| E5                | 940 mM Sodium Potassium phosphate;<br>pH 6.0 | 150 mM MES; pH 6.0                 | 4 % v/v Ethylene glycol                    |
| E6                | 37.7 % v/v PEG 550 MME                       | 150 mM MES; pH 6.5                 | 40 mM Potassium Sodium tartrate            |
| E7                | 3.14 M Ammonium nitrate                      | 150 mM MOPS; pH 7.0                | 4 % v/v MPD                                |
| E8                | 15.7 % w/v PEG 20,000                        | 150 mM HEPES; pH 7.5               | 4 % v/v 2-Butanol                          |
| E9                | 47.1 % w/v PEG 1,000                         | 150 mM TRIS; pH 8.0                | 80 mM Potassium bromide                    |
| E10               | 2.51 M Sodium chloride                       | 150 mM TAPS; pH 8.5                | 4 % v/v PEG 300                            |
| E11               | 37.7 % w/v PEG 4,000                         | 150 mM AMPD - TRIS buffer; pH 9.0  | 80 mM Magnesium sulfate                    |
| E12               | 1.26 M Lithium sulfate                       | 150 mM CAPSO; pH 9.5               | none                                       |
| F1                | 2.4 M Ammonium sulfate                       | 150 mM Sodium formate; pH 4.0      | 3 % v/v 2-Butanol                          |
| F2                | 34.3 % w/v PEG 8,000                         | 150 mM Sodium acetate; pH 4.5      | 60 mM Potassium bromide                    |
| F3                | 1.03 M Sodium Potassium phosphate;<br>pH 5.0 | 150 mM di-Sodium DL-malate; pH 5.0 | 3 % v/v PEG 300                            |
| F4                | 42 % v/v PEG 550 MME                         | none                               | 60 mM Magnesium sulfate                    |
| F5                | 3.43 M Ammonium nitrate                      | 150 mM MES; pH 6.0                 | 12 mM Sodium fluoride                      |
| F6                | 17.1 % w/v PEG 20,000                        | 150 mM MES; pH 6.5                 | 30 mM Potassium thiocyanate                |
| F7                | 51.4 % w/v PEG 1,000                         | 150 mM MOPS; pH 7.0                | 60 mM Sodium iodide                        |
| F8                | 2.74 M Sodium chloride                       | 150 mM HEPES; pH 7.5               | 3 % v/v 1,2-Propanediol                    |
| F9                | 41.1 % w/v PEG 4,000                         | 150 mM TRIS; pH 8.0                | 30 mM Calcium chloride                     |
| F10               | 1.37 M Lithium sulfate                       | 150 mM TAPS; pH 8.5                | 3 % v/v Ethylene glycol                    |
| F11               | 34.3 % w/v PEG 5,000 MME                     | 150 mM AMPD - TRIS buffer; pH 9.0  | 30 mM Potassium Sodium tartrate            |
| F12               | 61.7 % w/v Glycerol                          | 150 mM CAPSO; pH 9.5               | 3 % v/v MPD                                |
| G1                | 1.11 M Sodium Potassium phosphate; pH<br>4.0 | 150 mM Sodium formate; pH 4.0      | 2 % v/v 1,2-Propanediol                    |
| G2                | 44.6 % v/v PEG 550 MME                       | 150 mM Sodium acetate; pH 4.5      | none                                       |
| G3                | 3.71 M Ammonium nitrate                      | 150 mM di-Sodium DL-malate; pH 5.0 | 2 % v/v Ethylene glycol                    |
| G4                | 18.6 % w/v PEG 20,000                        | 150 mM tri-Sodium citrate; pH 5.5  | 20 mM Potassium Sodium tartrate            |
| G5                | 55.7 % w/v PEG 1,000                         | 150 mM MES; pH 6.0                 | 2 % v/v MPD                                |
| G6                | 2.97 M Sodium chloride                       | 150 mM MES; pH 6.5                 | 2 % v/v 2-Butanol                          |
| G7                | 44.6 % w/v PEG 4,000                         | 150 mM MOPS; pH 7.0                | 40 mM Potassium bromide                    |
| G8                | 1.49 M Lithium sulfate                       | 150 mM HEPES; pH 7.5               | 2 % v/v PEG 300                            |
| G9                | 37.1 % w/v PEG 5,000 MME                     | 150 mM TRIS; pH 8.0                | 40 mM Magnesium sulfate                    |
| G10               | 66.9 % w/v Glycerol                          | 150 mM TAPS; pH 8.5                | 8 mM Sodium fluoride                       |
| G11               | 2.6 M Ammonium sulfate                       | 150 mM AMPD - TRIS buffer; pH 9.0  | 20 mM Potassium thiocyanate                |
| G12               | 37.1 % w/v PEG 8,000                         | 150 mM CAPSO; pH 9.5               | 40 mM Sodium iodide                        |
| H1                | 4 M Ammonium nitrate                         | 150 mM Sodium formate; pH 4.0      | 1 % v/v PEG 300                            |
| H2                | 20 % w/v PEG 20,000                          | 150 mM Sodium acetate; pH 4.5      | 20 mM Magnesium sulfate                    |
| H3                | 60 % w/v PEG 1,000                           | 150 mM di-Sodium DL-malate; pH 5.0 | 4 mM Sodium fluoride                       |
| H4                | 3.2 M Sodium chloride                        | 150 mM tri-Sodium citrate; pH 5.5  | 10 mM Potassium thiocyanate                |
| H5                | 48 % w/v PEG 4,000                           | 150 mM MES; pH 6.0                 | 20 mM Sodium iodide                        |
| H6                | 1.6 M Lithium sulfate                        | 150 mM MES; pH 6.5                 | 1 % v/v 1,2-Propanediol                    |
| H7                | 40 % w/v PEG 5,000 MME                       | 150 mM MOPS; pH 7.0                | 10 mM Calcium chloride                     |
| H8                | 72 % w/v Glycerol                            | 150 mM HEPES; pH 7.5               | 1 % v/v Ethylene glycol                    |
| H9                | 2.8 M Ammonium sulfate                       | 150 mM TRIS; pH 8.0                | 10 mM Potassium Sodium tartrate;<br>pH 7.0 |
| H10               | 40 % w/v PEG 8,000                           | 150 mM TAPS; pH 8.5                | 1 % v/v MPD                                |
| H11               | 1.2 M Sodium Potassium phosphate; pH<br>9.0  | 150 mM AMPD - TRIS buffer; pH 9.0  | 1 % v/v 2-Butanol                          |
| H12               | 48 % v/v PEG 550 MME                         | 150 mM CAPSO; pH 9.5               | 20 mM Potassium bromide                    |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

| Pi-PEG<br>No. | Precipitant              | Buffer*                      | Additive                 |
|---------------|--------------------------|------------------------------|--------------------------|
| A1            | 22.5 % v/v PEG 200       | 50 mM Sodium acetate; pH 4.8 | none                     |
| A2            | 20 % v/v PEG 300         | 50 mM Sodium acetate; pH 5.2 | none                     |
| A3            | 20 % v/v PEG 350 MME     | 50 mM MES; pH 5.6            | none                     |
| A4            | 20 % v/v PEG 400         | 50 mM MES; pH 6.0            | none                     |
| A5            | 20 % v/v PEG 550 MME     | 50 mM ADA; pH 6.4            | none                     |
| A6            | 20 % v/v PEG 600         | 50 mM ADA; pH 6.8            | none                     |
| A7            | 17.5 % w/v PEG 1,000     | 50 mM HEPES; pH 7.1          | none                     |
| A8            | 17.5 % w/v PEG 1,500     | 50 mM HEPES; pH 7.3          | none                     |
| A9            | 15 % w/v PEG 2,000       | 50 mM TRIS; pH 7.6           | none                     |
| A10           | 15 % w/v PEG 2,000 MME   | 50 mM TRIS; pH 8.0           | none                     |
| A11           | 15 % w/v PEG 3,000       | 50 mM BICINE; pH 8.4         | none                     |
| A12           | 15 % w/v PEG 4,000       | 50 mM BICINE; pH 8.8         | none                     |
| B1            | 15 % w/v PEG 1,500       | 50 mM Sodium acetate; pH 4.8 | 3.6 % w/v PEG 4,000      |
| B2            | 12.9 % w/v PEG 2,000     | 50 mM Sodium acetate; pH 5.2 | 6.4 % v/v PEG 200        |
| B3            | 12.9 % w/v PEG 2,000 MME | 50 mM MES; pH 5.6            | 5.7 % v/v PEG 300        |
| B4            | 12.9 % w/v PEG 3,000     | 50 mM MES; pH 6.0            | 5.7 % v/v PEG 350 MME    |
| B5            | 12.9 % w/v PEG 4,000     | 50 mM ADA; pH 6.4            | 5.7 % v/v PEG 400        |
| B6            | 19.3 % v/v PEG 200       | 50 mM ADA; pH 6.8            | 5.7 % v/v PEG 550 MME    |
| B7            | 17.1 % v/v PEG 300       | 50 mM HEPES; pH 7.1          | 5.7 % v/v PEG 600        |
| B8            | 17.1 % v/v PEG 350 MME   | 50 mM HEPES; pH 7.3          | 5 % w/v PEG 1,000        |
| B9            | 17.1 % v/v PEG 400       | 50 mM TRIS; pH 7.6           | 5 % w/v PEG 1,500        |
| B10           | 17.1 % v/v PEG 550 MME   | 50 mM TRIS; pH 8.0           | 4.3 % w/v PEG 2,000      |
| B11           | 17.1 % v/v PEG 600       | 50 mM BICINE; pH 8.4         | 4.3 % w/v PEG 2,000 MME  |
| B12           | 15 % w/v PEG 1,000       | 50 mM BICINE; pH 8.8         | 4.3 % w/v PEG 3,000      |
| C1            | 14.3 % v/v PEG 350 MME   | 50 mM Sodium acetate; pH 4.8 | 11.4 % v/v PEG 300       |
| C2            | 14.3 % v/v PEG 400       | 50 mM Sodium acetate; pH 5.2 | 11.4 % v/v PEG 350 MME   |
| C3            | 14.3 % v/v PEG 550 MME   | 50 mM MES; pH 5.6            | 11.4 % v/v PEG 400       |
| C4            | 14.3 % v/v PEG 600       | 50 mM MES; pH 6.0            | 11.4 % v/v PEG 550 MME   |
| C5            | 12.5 % w/v PEG 1,000     | 50 mM ADA; pH 6.4            | 11.4 % v/v PEG 600       |
| C6            | 12.5 % w/v PEG 1,500     | 50 mM ADA; pH 6.8            | 10 % w/v PEG 1,000       |
| C7            | 10.7 % w/v PEG 2,000     | 50 mM HEPES; pH 7.1          | 10 % w/v PEG 1,500       |
| C8            | 10.7 % w/v PEG 2,000 MME | 50 mM HEPES; pH 7.3          | 8.6 % w/v PEG 2,000      |
| C9            | 10.7 % w/v PEG 3,000     | 50 mM TRIS; pH 7.6           | 8.6 % w/v PEG 2,000 MME  |
| C10           | 10.7 % w/v PEG 4,000     | 50 mM TRIS; pH 8.0           | 8.6 % w/v PEG 3,000      |
| C11           | 16.1 % v/v PEG 200       | 50 mM BICINE; pH 8.4         | 7.1 % w/v PEG 4,000      |
| C12           | 14.3 % v/v PEG 300       | 50 mM BICINE; pH 8.8         | 12.9 % v/v PEG 200       |
| D1            | 8.6 % w/v PEG 2,000 MME  | 50 mM Sodium acetate; pH 4.8 | 17.1 % v/v PEG 400       |
| D2            | 8.6 % w/v PEG 3,000      | 50 mM Sodium acetate; pH 5.2 | 17.1 % v/v PEG 550 MME   |
| D3            | 8.6 % w/v PEG 4,000      | 50 mM MES; pH 5.6            | 17.1 % v/v PEG 600       |
| D4            | 12.9 % v/v PEG 200       | 50 mM MES; pH 6.0            | 15 % w/v PEG 1,000       |
| D5            | 11.4 % v/v PEG 300       | 50 mM ADA; pH 6.4            | 15 % w/v PEG 1,500       |
| D6            | 11.4 % v/v PEG 350 MME   | 50 mM ADA; pH 6.8            | 12.9 % w/v PEG 2,000     |
| D7            | 11.4 % v/v PEG 400       | 50 mM HEPES; pH 7.1          | 12.9 % w/v PEG 2,000 MME |
| D8            | 11.4 % v/v PEG 550 MME   | 50 mM HEPES; pH 7.3          | 12.9 % w/v PEG 3,000     |
| D9            | 11.4 % v/v PEG 600       | 50 mM TRIS; pH 7.6           | 10.7 % w/v PEG 4,000     |
| D10           | 10 % w/v PEG 1,000       | 50 mM TRIS; pH 8.0           | 19.3 % v/v PEG 200       |
| D11           | 10 % w/v PEG 1,500       | 50 mM BICINE; pH 8.4         | 17.1 % v/v PEG 300       |
| D12           | 8.6 % w/v PEG 2,000      | 50 mM BICINE; pH 8.8         | 17.1 % v/v PEG 350 MME   |

| Pi-PEG<br>No. | Precipitant             | Buffer*                      | Additive                 |
|---------------|-------------------------|------------------------------|--------------------------|
| E1            | 8.6 % v/v PEG 550 MME   | 50 mM Sodium acetate; pH 4.8 | 22.9 % v/v PEG 600       |
| E2            | 8.6 % v/v PEG 600       | 50 mM Sodium acetate; pH 5.2 | 20 % w/v PEG 1,000       |
| E3            | 7.5 % w/v PEG 1,000     | 50 mM MES; pH 5.6            | 20 % w/v PEG 1,500       |
| E4            | 7.5 % w/v PEG 1,500     | 50 mM MES; pH 6.0            | 17.1 % w/v PEG 2,000     |
| E5            | 6.4 % w/v PEG 2,000     | 50 mM ADA; pH 6.4            | 17.1 % w/v PEG 2,000 MME |
| E6            | 6.4 % w/v PEG 2,000 MME | 50 mM ADA; pH 6.8            | 17.1 % w/v PEG 3,000     |
| E7            | 6.4 % w/v PEG 3,000     | 50 mM HEPES; pH 7.1          | 14.3 % w/v PEG 4,000     |
| E8            | 6.4 % w/v PEG 4,000     | 50 mM HEPES; pH 7.3          | 25.7 % v/v PEG 200       |
| E9            | 9.6 % v/v PEG 200       | 50 mM TRIS; pH 7.6           | 22.9 % v/v PEG 300       |
| E10           | 8.6 % v/v PEG 300       | 50 mM TRIS; pH 8.0           | 22.9 % v/v PEG 350 MME   |
| E11           | 8.6 % v/v PEG 350 MME   | 50 mM BICINE; pH 8.4         | 22.9 % v/v PEG 400       |
| E12           | 8.6 % v/v PEG 400       | 50 mM BICINE; pH 8.8         | 22.9 % v/v PEG 550 MME   |
| F1            | 4.3 % w/v PEG 4,000     | 50 mM Sodium acetate; pH 4.8 | 25 % w/v PEG 1,500       |
| F2            | 6.4 % v/v PEG 200       | 50 mM Sodium acetate; pH 5.2 | 21.4 % w/v PEG 2,000     |
| F3            | 5.7 % v/v PEG 300       | 50 mM MES; pH 5.6            | 21.4 % w/v PEG 2,000 MME |
| F4            | 5.7 % v/v PEG 350 MME   | 50 mM MES; pH 6.0            | 21.4 % w/v PEG 3,000     |
| F5            | 5.7 % v/v PEG 400       | 50 mM ADA; pH 6.4            | 17.9 % w/v PEG 4,000     |
| F6            | 5.7 % v/v PEG 550 MME   | 50 mM ADA; pH 6.8            | 32.1 % v/v PEG 200       |
| F7            | 5.7 % v/v PEG 600       | 50 mM HEPES; pH 7.1          | 28.6 % v/v PEG 300       |
| F8            | 5 % w/v PEG 1,000       | 50 mM HEPES; pH 7.3          | 28.6 % v/v PEG 350 MME   |
| F9            | 5 % w/v PEG 1,500       | 50 mM TRIS; pH 7.6           | 28.6 % v/v PEG 400       |
| F10           | 4.3 % w/v PEG 2,000     | 50 mM TRIS; pH 8.0           | 28.6 % v/v PEG 550 MME   |
| F11           | 4.3 % w/v PEG 2,000 MME | 50 mM BICINE; pH 8.4         | 28.6 % v/v PEG 600       |
| F12           | 4.3 % w/v PEG 3,000     | 50 mM BICINE; pH 8.8         | 25 % w/v PEG 1,000       |
| G1            | 2.5 % w/v PEG 1,000     | 50 mM Sodium acetate; pH 4.8 | 25.7 % w/v PEG 2,000 MME |
| G2            | 2.5 % w/v PEG 1,500     | 50 mM Sodium acetate; pH 5.2 | 25.7 % w/v PEG 3,000     |
| G3            | 2.1 % w/v PEG 2,000     | 50 mM MES; pH 5.6            | 21.4 % w/v PEG 4,000     |
| G4            | 2.1 % w/v PEG 2,000 MME | 50 mM MES; pH 6.0            | 38.6 % v/v PEG 200       |
| G5            | 2.1 % w/v PEG 3,000     | 50 mM ADA; pH 6.4            | 34.3 % v/v PEG 300       |
| G6            | 2.1 % w/v PEG 4,000     | 50 mM ADA; pH 6.8            | 34.3 % v/v PEG 350 MME   |
| G7            | 3.2 % v/v PEG 200       | 50 mM HEPES; pH 7.1          | 34.3 % v/v PEG 400       |
| G8            | 2.9 % v/v PEG 300       | 50 mM HEPES; pH 7.3          | 34.3 % v/v PEG 550 MME   |
| G9            | 2.9 % v/v PEG 350 MME   | 50 mM TRIS; pH 7.6           | 34.3 % v/v PEG 600       |
| G10           | 2.9 % v/v PEG 400       | 50 mM TRIS; pH 8.0           | 30 % w/v PEG 1,000       |
| G11           | 2.9 % v/v PEG 550 MME   | 50 mM BICINE; pH 8.4         | 30 % w/v PEG 1,500       |
| G12           | 2.9 % v/v PEG 600       | 50 mM BICINE; pH 8.8         | 25.7 % w/v PEG 2,000     |
| H1            | none                    | 50 mM Sodium acetate; pH 4.8 | 25 % w/v PEG 4,000       |
| H2            | none                    | 50 mM Sodium acetate; pH 5.2 | 45 % v/v PEG 200         |
| H3            | none                    | 50 mM MES; pH 5.6            | 40 % v/v PEG 300         |
| H4            | none                    | 50 mM MES; pH 6.0            | 40 % v/v PEG 350 MME     |
| H5            | none                    | 50 mM ADA; pH 6.4            | 40 % v/v PEG 400         |
| H6            | none                    | 50 mM ADA; pH 6.8            | 40 % v/v PEG 550 MME     |
| H7            | none                    | 50 mM HEPES; pH 7.1          | 40 % v/v PEG 600         |
| H8            | none                    | 50 mM HEPES; pH 7.3          | 35 % w/v PEG 1,000       |
| H9            | none                    | 50 mM TRIS; pH 7.6           | 35 % w/v PEG 1,500       |
| H10           | none                    | 50 mM TRIS; pH 8.0           | 30 % w/v PEG 2,000       |
| H11           | none                    | 50 mM BICINE; pH 8.4         | 30 % w/v PEG 2,000 MME   |
| H12           | none                    | 50 mM BICINE; pH 8.8         | 30 % w/v PEG 3,000       |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

## JBScreen Wizard

| Wizard 1 | Precipitant                                                                | Buffer*                                   | Additive                  |
|----------|----------------------------------------------------------------------------|-------------------------------------------|---------------------------|
| No.      |                                                                            |                                           |                           |
| 12/A1    | 20 % w/v PEG 8,000                                                         | 100 mM CHES; pH 9.5                       | none                      |
| 12/A2    | 10 % v/v 2-Propanol                                                        | 100 mM HEPES; pH 7.5                      | 200 mM Sodium chloride    |
| 12/A3    | 15 % v/v Ethanol                                                           | 100 mM CHES; pH 9.5                       | none                      |
| 12/A4    | 35 % v/v MPD                                                               | 100 mM Imidazole; pH 8.0                  | 200 mM Magnesium chloride |
| 12/A5    | 30 % v/v PEG 400                                                           | 100 mM CAPS; pH 10.5                      | none                      |
| 12/A6    | 20 % w/v PEG 3,000                                                         | 100 mM tri-Sodium citrate; pH 5.5         | none                      |
| 12/A7    | 10 % w/v PEG 8,000                                                         | 100 mM MES; pH 6.0                        | 200 mM Zinc acetate       |
| 12/A8    | 2 M Ammonium sulfate                                                       | 100 mM tri-Sodium citrate; pH 5.5         | none                      |
| 12/A9    | 1 M di-Ammonium hydrogen phosphate                                         | 100 mM Sodium acetate; pH 4.5             | none                      |
| 12/A10   | 20 % w/v PEG 2,000 MME                                                     | 100 mM TRIS; pH 7.0                       | none                      |
| 12/A11   | 20 % v/v 1,4-Butanediol                                                    | 100 mM MES; pH 6.0                        | 200 mM Lithium sulfate    |
| 12/A12   | 20 % w/v PEG 1,000                                                         | 100 mM Imidazole; pH 8.0                  | 200 mM Calcium acetate    |
| 12/B1    | 1.26 M Ammonium sulfate                                                    | 100 mM MES; pH 6.5                        | none                      |
| 12/B2    | 1 M tri-Sodium citrate                                                     | 100 mM MES; pH 6.5                        | none                      |
| 12/B3    | 10 % w/v PEG 3,000                                                         | 100 mM Imidazole; pH 8.0                  | 200 mM Lithium sulfate    |
| 12/B4    | 2.5 M Sodium chloride                                                      | 100 mM Sodium Potassium phosphate; pH 6.2 | none                      |
| 12/B5    | 30 % w/v PEG 8,000                                                         | 100 mM Sodium acetate; pH 4.5             | 200 mM Lithium sulfate    |
| 12/B6    | 1 M Potassium Sodium tartrate                                              | 100 mM Imidazole; pH 8.0                  | 200 mM Sodium chloride    |
| 12/B7    | 20 % w/v PEG 1,000                                                         | 100 mM TRIS; pH 7.0                       | none                      |
| 12/B8    | 400 mM Sodium di-hydrogen phosphate, 1.6 M di-Potassium hydrogen phosphate | 100 mM Imidazole; pH 8.0                  | 200 mM Sodium chloride    |
| 12/B9    | 20 % w/v PEG 8,000                                                         | 100 mM HEPES; pH 7.5                      | none                      |
| 12/B10   | 10 % v/v 2-Propanol                                                        | 100 mM TRIS; pH 8.5                       | none                      |
| 12/B11   | 15 % v/v Ethanol                                                           | 100 mM Imidazole; pH 8.0                  | 200 mM Magnesium chloride |
| 12/B12   | 35 % v/v MPD                                                               | 100 mM TRIS; pH 7.0                       | 200 mM Sodium chloride    |
| 12/C1    | 30 % v/v PEG 400                                                           | 100 mM TRIS; pH 8.5                       | 200 mM Magnesium chloride |
| 12/C2    | 10 % w/v PEG 3,000                                                         | 100 mM CHES; pH 9.5                       | none                      |
| 12/C3    | 1.2 M Sodium di-hydrogen phosphate, 800 mM di-Potassium hydrogen phosphate | 100 mM CAPS; pH 10.5                      | 200 mM Lithium sulfate    |
| 12/C4    | 20 % w/v PEG 3,000                                                         | 100 mM HEPES; pH 7.5                      | 200 mM Sodium chloride    |
| 12/C5    | 10 % w/v PEG 8,000                                                         | 100 mM CHES; pH 9.5                       | 200 mM Sodium chloride    |
| 12/C6    | 1.26 M Ammonium sulfate                                                    | 100 mM Sodium acetate; pH 4.5             | 200 mM Sodium chloride    |
| 12/C7    | 20 % w/v PEG 8,000                                                         | 100 mM Sodium phosphate citrate; pH 4.2   | 200 mM Sodium chloride    |
| 12/C8    | 10 % w/v PEG 3,000                                                         | 100 mM Sodium Potassium phosphate; pH 6.2 | none                      |
| 12/C9    | 2 M Ammonium sulfate                                                       | 100 mM CAPS; pH 10.5                      | 200 mM Lithium sulfate    |
| 12/C10   | 1 M di-Ammonium hydrogen phosphate                                         | 100 mM Imidazole; pH 8.0                  | none                      |
| 12/C11   | 20 % v/v 1,4-Butanediol                                                    | 100 mM Sodium acetate; pH 4.5             | none                      |
| 12/C12   | 1 M tri-Sodium citrate                                                     | 100 mM Imidazole; pH 8.0                  | none                      |
| 12/D1    | 2.5 M Sodium chloride                                                      | 100 mM Imidazole; pH 8.0                  | none                      |
| 12/D2    | 1 M Potassium Sodium tartrate                                              | 100 mM CHES; pH 9.5                       | 200 mM Lithium sulfate    |
| 12/D3    | 20 % w/v PEG 1,000                                                         | 100 mM Sodium phosphate citrate; pH 4.2   | 200 mM Lithium sulfate    |
| 12/D4    | 10 % v/v 2-Propanol                                                        | 100 mM MES; pH 6.0                        | 200 mM Calcium acetate    |
| 12/D5    | 30 % w/v PEG 3,000                                                         | 100 mM CHES; pH 9.5                       | none                      |
| 12/D6    | 15 % v/v Ethanol                                                           | 100 mM TRIS; pH 7.0                       | none                      |
| 12/D7    | 35 % v/v MPD                                                               | 100 mM Sodium Potassium phosphate; pH 6.2 | none                      |
| 12/D8    | 30 % v/v PEG 400                                                           | 100 mM Sodium acetate; pH 4.5             | 200 mM Calcium acetate    |
| 12/D9    | 20 % w/v PEG 3,000                                                         | 100 mM Sodium acetate; pH 4.5             | none                      |
| 12/D10   | 10 % w/v PEG 8,000                                                         | 100 mM Imidazole; pH 8.0                  | 200 mM Calcium acetate    |
| 12/D11   | 1.26 M Ammonium sulfate                                                    | 100 mM TRIS; pH 8.5                       | 200 mM Lithium sulfate    |
| 12/D12   | 20 % w/v PEG 1,000                                                         | 100 mM Sodium acetate; pH 4.5             | 200 mM Zinc acetate       |

| Wizard 2 | Precipitant                                                                   | Buffer*                                   | Additive                  |
|----------|-------------------------------------------------------------------------------|-------------------------------------------|---------------------------|
| No.      |                                                                               |                                           |                           |
| 12/E1    | 10 % w/v PEG 3,000                                                            | 100 mM Sodium acetate; pH 4.5             | 200 mM Zinc acetate       |
| 12/E2    | 35 % v/v MPD                                                                  | 100 mM MES; pH 6.0                        | 200 mM Lithium sulfate    |
| 12/E3    | 20 % w/v PEG 8,000                                                            | 100 mM TRIS; pH 8.5                       | 200 mM Magnesium chloride |
| 12/E4    | 2 M Ammonium sulfate                                                          | 100 mM MES; pH 6.5                        | 200 mM Sodium chloride    |
| 12/E5    | 20 % v/v 1,4-Butanediol                                                       | 100 mM HEPES; pH 7.5                      | 200 mM Sodium chloride    |
| 12/E6    | 10 % v/v 2-Propanol                                                           | 100 mM Sodium phosphate citrate; pH 4.2   | 200 mM Lithium sulfate    |
| 12/E7    | 30 % w/v PEG 3,000                                                            | 100 mM TRIS; pH 7.0                       | 200 mM Sodium chloride    |
| 12/E8    | 10 % w/v PEG 8,000                                                            | 100 mM Sodium Potassium phosphate; pH 6.2 | 200 mM Sodium chloride    |
| 12/E9    | 2 M Ammonium sulfate                                                          | 100 mM Sodium phosphate citrate; pH 4.2   | none                      |
| 12/E10   | 1 M di-Ammonium hydrogen phosphate                                            | 100 mM TRIS; pH 8.5                       | none                      |
| 12/E11   | 10 % v/v 2-Propanol                                                           | 100 mM MES; pH 6.5                        | 200 mM Zinc acetate       |
| 12/E12   | 30 % v/v PEG 400                                                              | 100 mM MES; pH 6.5                        | 200 mM Lithium sulfate    |
| 12/F1    | 15 % v/v Ethanol                                                              | 100 mM tri-Sodium citrate; pH 5.5         | 200 mM Lithium sulfate    |
| 12/F2    | 20 % w/v PEG 1,000                                                            | 100 mM Sodium Potassium phosphate; pH 6.2 | 200 mM Sodium chloride    |
| 12/F3    | 1.26 M Ammonium sulfate                                                       | 100 mM HEPES; pH 7.5                      | none                      |
| 12/F4    | 1 M tri-Sodium citrate                                                        | 100 mM CHES; pH 9.5                       | none                      |
| 12/F5    | 2.5 M Sodium chloride                                                         | 100 mM TRIS; pH 7.0                       | 200 mM Magnesium chloride |
| 12/F6    | 20 % w/v PEG 3,000                                                            | 100 mM TRIS; pH 7.0                       | 200 mM Calcium acetate    |
| 12/F7    | 1.6 M Sodium di-hydrogen phosphate,<br>400 mM di-Potassium hydrogen phosphate | 100 mM Sodium phosphate citrate; pH 4.2   | none                      |
| 12/F8    | 15 % v/v Ethanol                                                              | 100 mM MES; pH 6.0                        | 200 mM Zinc acetate       |
| 12/F9    | 35 % v/v MPD                                                                  | 100 mM Sodium acetate; pH 4.5             | none                      |
| 12/F10   | 10 % v/v 2-Propanol                                                           | 100 mM Imidazole; pH 8.0                  | none                      |
| 12/F11   | 15 % v/v Ethanol                                                              | 100 mM HEPES; pH 7.5                      | 200 mM Magnesium chloride |
| 12/F12   | 30 % w/v PEG 8,000                                                            | 100 mM Imidazole; pH 8.0                  | 200 mM Sodium chloride    |
| 12/G1    | 35 % v/v MPD                                                                  | 100 mM HEPES; pH 7.5                      | 200 mM Sodium chloride    |
| 12/G2    | 30 % v/v PEG 400                                                              | 100 mM CHES; pH 9.5                       | none                      |
| 12/G3    | 10 % w/v PEG 3,000                                                            | 100 mM MES; pH 6.5                        | 200 mM Magnesium chloride |
| 12/G4    | 20 % w/v PEG 8,000                                                            | 100 mM MES; pH 6.0                        | 200 mM Calcium acetate    |
| 12/G5    | 1.26 M Ammonium sulfate                                                       | 100 mM CHES; pH 9.5                       | 200 mM Sodium chloride    |
| 12/G6    | 20 % v/v 1,4-Butanediol                                                       | 100 mM Imidazole; pH 8.0                  | 200 mM Zinc acetate       |
| 12/G7    | 1 M tri-Sodium citrate                                                        | 100 mM TRIS; pH 7.0                       | 200 mM Sodium chloride    |
| 12/G8    | 20 % w/v PEG 1,000                                                            | 100 mM TRIS; pH 8.5                       | none                      |
| 12/G9    | 1 M di-Ammonium hydrogen phosphate                                            | 100 mM tri-Sodium citrate; pH 5.5         | 200 mM Sodium chloride    |
| 12/G10   | 10 % w/v PEG 8,000                                                            | 100 mM Imidazole; pH 8.0                  | none                      |
| 12/G11   | 800 mM Sodium di-hydrogen phosphate,<br>1.2 M di-Potassium hydrogen phosphate | 100 mM Sodium acetate; pH 4.5             | none                      |
| 12/G12   | 10 % w/v PEG 3,000                                                            | 100 mM Sodium phosphate citrate; pH 4.2   | 200 mM Sodium chloride    |
| 12/H1    | 1 M Potassium Sodium tartrate                                                 | 100 mM TRIS; pH 7.0                       | 200 mM Lithium sulfate    |
| 12/H2    | 2.5 M Sodium chloride                                                         | 100 mM Sodium acetate; pH 4.5             | 200 mM Lithium sulfate    |
| 12/H3    | 20 % w/v PEG 8,000                                                            | 100 mM CAPS; pH 10.5                      | 200 mM Sodium chloride    |
| 12/H4    | 20 % w/v PEG 3,000                                                            | 100 mM Imidazole; pH 8.0                  | 200 mM Zinc acetate       |
| 12/H5    | 2 M Ammonium sulfate                                                          | 100 mM TRIS; pH 7.0                       | 200 mM Lithium sulfate    |
| 12/H6    | 30 % v/v PEG 400                                                              | 100 mM HEPES; pH 7.5                      | 200 mM Sodium chloride    |
| 12/H7    | 10 % w/v PEG 8,000                                                            | 100 mM TRIS; pH 7.0                       | 200 mM Magnesium chloride |
| 12/H8    | 20 % w/v PEG 1,000                                                            | 100 mM MES; pH 6.5                        | 200 mM Magnesium chloride |
| 12/H9    | 1.26 M Ammonium sulfate                                                       | 100 mM MES; pH 6.0                        | none                      |
| 12/H10   | 1 M di-Ammonium hydrogen phosphate                                            | 100 mM Imidazole; pH 8.0                  | 200 mM Sodium chloride    |
| 12/H11   | 2.5 M Sodium chloride                                                         | 100 mM Imidazole; pH 8.0                  | 200 mM Zinc acetate       |
| 12/H12   | 800 mM Potassium Sodium tartrate                                              | 100 mM MES; pH 6.0                        | none                      |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

| Wizard 3 | Precipitant                                                                    | Buffer*                           | Additive                                                    |
|----------|--------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------|
| No.      |                                                                                |                                   |                                                             |
| 34/A1    | 20 % w/v PEG 3,350                                                             | none                              | 200 mM di-Ammonium hydrogen citrate                         |
| 34/A2    | 30 % v/v MPD                                                                   | 100 mM Sodium acetate; pH 4.6     | 20 mM Calcium chloride                                      |
| 34/A3    | 20 % w/v PEG 3,350                                                             | none                              | 200 mM Magnesium formate                                    |
| 34/A4    | 20 % w/v PEG 3,350                                                             | none                              | 200 mM Ammonium formate                                     |
| 34/A5    | 20 % w/v PEG 3,350                                                             | none                              | 200 mM Ammonium chloride                                    |
| 34/A6    | 20 % w/v PEG 3,350                                                             | none                              | 200 mM Barium chloride                                      |
| 34/A7    | 50 % v/v MPD                                                                   | 100 mM TRIS; pH 8.5               | 200 mM Ammonium di-hydrogen phosphate                       |
| 34/A8    | 20 % w/v PEG 3,350                                                             | none                              | 200 mM Potassium nitrate                                    |
| 34/A9    | 800 mM Ammonium sulfate                                                        | 100 mM tri-Sodium citrate; pH 4.0 | none                                                        |
| 34/A10   | 20 % w/v PEG 3,350                                                             | none                              | 200 mM Sodium thiocyanate                                   |
| 34/A11   | 20 % w/v PEG 6,000                                                             | 100 mM BICINE; pH 9.0             | none                                                        |
| 34/A12   | 10 % w/v PEG 8,000                                                             | 100 mM HEPES; pH 7.5              | 8 % v/v Ethylene glycol                                     |
| 34/B1    | 8 % w/v PEG 4,000                                                              | 100 mM Sodium acetate; pH 4.6     | none                                                        |
| 34/B2    | 20 % w/v PEG 6,000                                                             | 100 mM tri-Sodium citrate; pH 5.0 | none                                                        |
| 34/B3    | 1.6 M tri-Sodium citrate                                                       | none                              | none                                                        |
| 34/B4    | 20 % w/v PEG 3,350                                                             | none                              | 200 mM tri-Potassium citrate                                |
| 34/B5    | 20 % w/v PEG 4,000                                                             | 100 mM tri-Sodium citrate; pH 5.5 | 10 % v/v 2-Propanol                                         |
| 34/B6    | 20 % w/v PEG 6,000                                                             | 100 mM tri-Sodium citrate; pH 4.0 | 1 M Lithium chloride                                        |
| 34/B7    | 20 % w/v PEG 3,350                                                             | none                              | 200 mM Ammonium nitrate                                     |
| 34/B8    | 10 % w/v PEG 6,000                                                             | 100 mM HEPES; pH 7.0              | none                                                        |
| 34/B9    | 800 mM Sodium di-hydrogen phosphate,<br>800 mM di-Potassium hydrogen phosphate | 100 mM HEPES; pH 7.5              | none                                                        |
| 34/B10   | 20 % v/v Ethanol                                                               | 100 mM TRIS; pH 8.5               | none                                                        |
| 34/B11   | 10 % w/v PEG 20,000                                                            | 100 mM BICINE; pH 9.0             | 2 % v/v 1,4-Dioxane                                         |
| 34/B12   | 2 M Ammonium sulfate                                                           | 100 mM Sodium acetate; pH 4.6     | none                                                        |
| 34/C1    | 10 % w/v PEG 1,000                                                             | none                              | 10 % w/v PEG 8,000                                          |
| 34/C2    | 24 % w/v PEG 1,500                                                             | none                              | 20 % v/v Glycerol                                           |
| 34/C3    | 30 % v/v PEG 400                                                               | 100 mM HEPES; pH 7.5              | 200 mM Magnesium chloride                                   |
| 34/C4    | 70 % v/v MPD                                                                   | 100 mM HEPES; pH 7.5              | none                                                        |
| 34/C5    | 40 % v/v MPD                                                                   | 100 mM TRIS; pH 8.0               | none                                                        |
| 34/C6    | 25.5 % w/v PEG 4,000                                                           | none                              | 170 mM Ammonium sulfate, 15 % v/v Glycerol                  |
| 34/C7    | 14 % v/v 2-Propanol                                                            | 70 mM Sodium acetate; pH 4.6      | 140 mM Calcium chloride, 30 % v/v Glycerol                  |
| 34/C8    | 16 % w/v PEG 8,000                                                             | none                              | 40 mM Potassium di-hydrogen phosphate,<br>20 % v/v Glycerol |
| 34/C9    | 1.6 M Magnesium sulfate                                                        | 100 mM MES; pH 6.5                | none                                                        |
| 34/C10   | 10 % w/v PEG 6,000                                                             | 100 mM BICINE; pH 9.0             | none                                                        |
| 34/C11   | 14.4 % w/v PEG 8,000                                                           | 80 mM MES; pH 6.5                 | 160 mM Calcium acetate, 20 % v/v Glycerol                   |
| 34/C12   | 30 % v/v Jeffamine® M-600; pH 7.0                                              | 100 mM MES; pH 6.5                | 50 mM Cesium chloride                                       |
| 34/D1    | 3.2 M Ammonium sulfate                                                         | 100 mM tri-Sodium citrate; pH 5.0 | none                                                        |
| 34/D2    | 15 % w/v PEG 10,000                                                            | 100 mM tri-Sodium citrate; pH 5.5 | 2 % v/v 1,4-Dioxane                                         |
| 34/D3    | 20 % v/v Jeffamine® M-600; pH 7.0                                              | 100 mM HEPES; pH 7.5              | none                                                        |
| 34/D4    | 10 % v/v MPD                                                                   | 100 mM BICINE; pH 9.0             | none                                                        |
| 34/D5    | 28 % v/v PEG 400                                                               | 100 mM HEPES; pH 7.5              | 200 mM Calcium chloride                                     |
| 34/D6    | 30 % w/v PEG 4,000                                                             | 100 mM TRIS; pH 8.5               | 200 mM Lithium sulfate                                      |
| 34/D7    | 30 % w/v PEG 8,000                                                             | none                              | 200 mM Ammonium sulfate                                     |
| 34/D8    | 30 % w/v PEG 5,000 MME                                                         | 100 mM TRIS; pH 8.0               | 200 mM Lithium sulfate                                      |
| 34/D9    | 1.5 M Ammonium sulfate                                                         | 100 mM TRIS; pH 8.5               | 12 % v/v Glycerol                                           |
| 34/D10   | 50 % v/v MPD                                                                   | 100 mM TRIS; pH 8.5               | 200 mM Ammonium chloride                                    |
| 34/D11   | 30 % w/v PEG 5,000 MME                                                         | 100 mM MES; pH 6.5                | 200 mM Ammonium sulfate                                     |
| 34/D12   | 20 % w/v PEG 10,000                                                            | 100 mM HEPES; pH 7.5              | none                                                        |



| Wizard 4 |                                               |                                         |                                                           |
|----------|-----------------------------------------------|-----------------------------------------|-----------------------------------------------------------|
| No.      | Precipitant                                   | Buffer*                                 | Additive                                                  |
| 34/E1    | 20 % v/v Glycerol                             | none                                    | 40 mM di-Potassium hydrogen phosphate, 16 % w/v PEG 8,000 |
| 34/E2    | 15 % v/v Ethanol                              | 100 mM TRIS; pH 8.0                     | 100 mM Sodium chloride, 5 % v/v MPD                       |
| 34/E3    | 40 % v/v Ethanol                              | 100 mM Sodium phosphate citrate; pH 4.2 | 5 % w/v PEG 1,000                                         |
| 34/E4    | 200 mM Ammonium sulfate                       | 100 mM BIS-TRIS; pH 5.5                 | none                                                      |
| 34/E5    | 2 M Ammonium sulfate                          | 100 mM Sodium acetate; pH 5.5           | 2 % v/v PEG 400                                           |
| 34/E6    | 800 mM Ammonium sulfate                       | 100 mM tri-Sodium citrate; pH 4.0       | none                                                      |
| 34/E7    | 2 M Lithium sulfate                           | 100 mM Sodium acetate; pH 4.5           | 100 mM Magnesium sulfate, 5 % v/v 2-Propanol              |
| 34/E8    | 2 M Lithium sulfate                           | 100 mM TRIS; pH 8.5                     | 2 % v/v PEG 400                                           |
| 34/E9    | 2 M Lithium sulfate                           | 100 mM Sodium acetate; pH 5.5           | 100 mM Magnesium sulfate, 5 % v/v PEG 400                 |
| 34/E10   | 50 % v/v PEG 200                              | 100 mM MES; pH 6.5                      | 200 mM Magnesium chloride                                 |
| 34/E11   | 40 % v/v PEG 300                              | 100 mM MES; pH 6.5                      | 200 mM Calcium acetate                                    |
| 34/E12   | 30 % v/v Jeffamine® M-600; pH 7.0             | 100 mM HEPES; pH 7.0                    | none                                                      |
| 34/F1    | 800 mM di-Sodium succinate; pH 7.0            | none                                    | none                                                      |
| 34/F2    | 40 % v/v PEG 400                              | 100 mM TRIS; pH 8.5                     | 200 mM Lithium sulfate                                    |
| 34/F3    | 50 % v/v PEG 400                              | 100 mM Sodium acetate; pH 4.5           | 200 mM Lithium sulfate                                    |
| 34/F4    | 15 % v/v PEG 550 MME                          | 100 mM MES; pH 6.5                      | none                                                      |
| 34/F5    | 25 % w/v PEG 1,500                            | 100 mM SPG buffer; pH 5.5               | none                                                      |
| 34/F6    | 25 % w/v PEG 1,500                            | 100 mM SPG buffer; pH 8.5               | none                                                      |
| 34/F7    | 25 % w/v PEG 1,500                            | 100 mM MMT buffer; pH 6.5               | none                                                      |
| 34/F8    | 25 % w/v PEG 1,500                            | 100 mM MMT buffer; pH 9.0               | none                                                      |
| 34/F9    | 25 % w/v PEG 1,500                            | 100 mM MIB buffer; pH 5.0               | none                                                      |
| 34/F10   | 25 % w/v PEG 1,500                            | 100 mM MIB buffer; pH 7.0               | none                                                      |
| 34/F11   | 12 % w/v PEG 1,500                            | 100 mM Sodium acetate; pH 5.5           | 2.5 M Sodium chloride, 1.5 % v/v MPD                      |
| 34/F12   | 2.4 M di-Sodium malonate                      | none                                    | none                                                      |
| 34/G1    | 30 % w/v PEG 2,000 MME                        | none                                    | 150 mM Potassium bromide                                  |
| 34/G2    | 10 % w/v PEG 2,000 MME                        | 100 mM Sodium acetate; pH 5.5           | 200 mM Ammonium sulfate                                   |
| 34/G3    | 20 % w/v PEG 2,000 MME                        | 100 mM TRIS; pH 8.5                     | 200 mM Trimethylamine N-oxide                             |
| 34/G4    | 20 % w/v PEG 3,350                            | 100 mM BIS-TRIS propane; pH 6.5         | 200 mM Sodium fluoride                                    |
| 34/G5    | 20 % w/v PEG 3,350                            | 100 mM tri-Sodium citrate; pH 4.0       | 200 mM tri-Sodium citrate                                 |
| 34/G6    | 20 % w/v PEG 3,350                            | 100 mM BIS-TRIS propane; pH 8.5         | 200 mM di-Sodium malonate                                 |
| 34/G7    | 20 % w/v Poly(acrylic acid sodium salt) 5,100 | 100 mM HEPES; pH 7.0                    | 20 mM Magnesium chloride                                  |
| 34/G8    | 2.1 M di-Sodium DL-malate; pH 7.0             | none                                    | none                                                      |
| 34/G9    | 800 mM di-Potassium hydrogen phosphate        | 100 mM HEPES; pH 7.5                    | 800 mM Sodium di-hydrogen phosphate                       |
| 34/G10   | 20 % w/v PEG 6,000                            | 100 mM MES; pH 6.0                      | 200 mM Ammonium chloride                                  |
| 34/G11   | 20 % w/v PEG 6,000                            | 100 mM HEPES; pH 7.0                    | 200 mM Sodium chloride                                    |
| 34/G12   | 20 % w/v PEG 6,000                            | 100 mM TRIS; pH 8.0                     | 200 mM Lithium chloride                                   |
| 34/H1    | 20 % w/v Polyvinylpyrrolidone K15             | 100 mM TRIS; pH 8.5                     | 100 mM Cobalt (II) chloride                               |
| 34/H2    | 50 % v/v Ethylene glycol                      | 100 mM TRIS; pH 8.5                     | 200 mM Magnesium chloride                                 |
| 34/H3    | 20 % w/v PEG 8,000                            | 100 mM Imidazole; pH 6.5                | 3 % v/v MPD                                               |
| 34/H4    | 20 % w/v PEG 8,000                            | 100 mM TRIS; pH 8.5                     | 100 mM Magnesium chloride, 20 % v/v PEG 400               |
| 34/H5    | 20 % w/v PEG 8,000                            | 100 mM HEPES; pH 7.5                    | 200 mM Ammonium sulfate, 10 % v/v 2-Propanol              |
| 34/H6    | 30 % v/v MPD                                  | 100 mM Sodium acetate; pH 4.5           | 25 % w/v PEG 1,500                                        |
| 34/H7    | 30 % v/v MPD                                  | 100 mM Imidazole; pH 6.5                | 200 mM Ammonium sulfate, 10 % w/v PEG 3,350               |
| 34/H8    | 30 % v/v MPD                                  | 100 mM TRIS; pH 8.5                     | 500 mM Sodium chloride, 8 % w/v PEG 8,000                 |
| 34/H9    | 40 % v/v 2-Propanol                           | 100 mM Imidazole; pH 6.5                | 15 % w/v PEG 8,000                                        |
| 34/H10   | 30 % v/v 2-Propanol                           | 100 mM TRIS; pH 8.5                     | 30 % w/v PEG 3,350                                        |
| 34/H11   | 17 % w/v PEG 10,000                           | 100 mM BIS-TRIS; pH 5.5                 | 100 mM Ammonium acetate                                   |
| 34/H12   | 15 % w/v PEG 20,000                           | 100 mM HEPES; pH 7.0                    | none                                                      |

\*pH values indicated are those of the 1.0 M buffer stock solution prior to dilution with other components

# Terms and Conditions of Sales

## Ordering

You have the following options when ordering products directly from Jena Bioscience:

- Mail orders
- Telephone orders
- 24 hour fax ordering
- Online ordering

### Please provide us with the following information when ordering:

- Your name, name of institution
- Billing and shipping address
- PO number (if applicable)
- Catalog number of products and quantities needed
- Contact person and contact data for questions

## Mail orders

Please send your mail orders to the following address:

Jena Bioscience GmbH  
Loebstedter Strasse 71  
07749 Jena, Germany

## Telephone orders

We will accept telephone orders from Monday to Friday between 8:00 am and 16:00 pm Central European Time.  
+49 – 3641 – 628 5000

## 24 hour fax ordering

Please send your fax order to:  
+49 – 3641 – 628 5100

## Online ordering

Jena Bioscience products can be ordered online. When ordering by e-mail, please direct your orders to [orders@jenabioscience.com](mailto:orders@jenabioscience.com)

Products can also be ordered online in our online shop:  
<http://www.jenabioscience.com>

## Important Notice:

Products that have been ordered by mistake cannot be returned to Jena Bioscience. Products that are returned unrequestedly to Jena Bioscience will not be accepted, but fully charged to the customer's account.

## Shipping

The standard shipping term is CPT (Incoterms 2010). Jena Bioscience decides on the shipping carrier.

Alternatively, customer may arrange shipping himself or elect a carrier of his choice, e.g. by providing his carrier account number.

In this case, products will be shipped at customer's risk and Jena Bioscience will not be liable for loss, damage or thawing of products.

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Please note that the prices of products in the catalog and on our website do not include freight charges, duties, taxes or customs fees.

Freight charges will be prepaid and added to the invoice. Freight charges for online orders are indicated when you check out of the online store. If you need information on freight charges for your particular order, please contact us with all necessary information.

Jena Bioscience will not pay any duties, taxes or customs fees.

Products and prices are subject to change without notice. Current pricing will be confirmed at the time of your order. No minimum order required.

We offer free shipping of all orders worth EUR 250+ (excl. VAT) within Germany.

## Payment

Invoices will be issued after your order has been shipped and will be sent to the billing address by separate mail. Invoices will not be included within the shipments. In case of partial deliveries, separate invoices will be issued after each shipment has left Jena Bioscience. You will find payment information (bank addresses and account data) on each invoice. Jena Bioscience accepts payment by:

### Check

Please send your payment checks to the following address:

Jena Bioscience GmbH  
Loebstedter Strasse 71  
07749 Jena, Germany

We kindly ask you to make sure that our invoice number and your customer number appear on the check.

### Wire transfer

All information necessary for wire transfers will be shown on each invoice.

Our VAT number (for EU customers): DE 195825742

### Credit card

Jena Bioscience accepts the following credit cards:

- VISA
- Mastercard
- American Express

If you wish to pay by credit card, please provide the following credit card information:

- Card holder
- Card number
- Expiry date
- Security code (VISA / Mastercard: 3 digits, to be found on your card's back side in the upper right corner of the signature field; AmEx: usually 4 digits (sometimes only three), to be found on the front side of your card above the card number)

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**Billing address**

**Shipping address**

|                       |                      |
|-----------------------|----------------------|
| Customer number       | Name                 |
| University/Company    | University/Company   |
| Institute/Department  | Institute/Department |
| Address               | Address              |
| Postcode              | Postcode             |
| City/Signature        | City/Signature       |
| VAT number (EEC only) | Phone                |
| PO number             | Fax                  |
| Date / Signature      | Email                |

If you wish to pay by credit card, please provide the following credit card information:

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(VISA / Mastercard: 3 digits on card's back side, upper right corner of signature field; AmEx: 4 digits, card's front side, above card number)

|    | Catalog number | Product | Quantity | Net Price per Item EURO | Net Price all Items EURO |
|----|----------------|---------|----------|-------------------------|--------------------------|
| 1  |                |         |          |                         |                          |
| 2  |                |         |          |                         |                          |
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| 11 |                |         |          |                         |                          |
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| 13 |                |         |          |                         |                          |
| 14 |                |         |          |                         |                          |
|    |                |         |          | Total                   |                          |



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ACCCACGAAAGGGAA ATAAGC AACO TTCAGGGAAGAA CTAUAACTGCCAC ACCCACGAAAGGGAA ATAAGC AACO TTCAGGGAAGAA  
TTCAGGGAAGAA CTAUAACTGCCAC **ACCCACGAAAGGGAA ATAAGC AACO TTCAGGGAAGAA CTAUAACTGCCAC** ACCCACGAAAGGGAA  
ACCCACGAAAGGGAA ATAAGC AACO TTCAGGGAAGAA CTAUAACTGCCAC ACCCACGAAAGGGAA ATAAGC AACO TTCAGGGAAGAA

**Crystallography**