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Product Information

Detergent Screening Kit
Product Number **66317**
Store at 4°C

TECHNICAL BULLETIN

Application

Similar to the additive kit this kit provides a range of detergents, that may be used for optimization. Detergents often interfere with the crystallization process. They are used to influence hydrophobic sample-sample interactions which may cause non-specific aggregation. On the other hand they can also influence the structure of water. The use of detergents is typically required for crystallization of membrane proteins or other proteins, if non-specific aggregation is suspected.

The detergent kit includes 48 defined detergents, that are pre-formulated for ease of use. The concentration of each detergent solution is adjusted to the 10-fold value of critical micelle concentration. The kit includes 100 µl of each pre-formulated detergent.

Quality of reagents – a key to success

The reagents within this kit are formulated using the highest purity reagents available. All solutions are sterile filtered using 0.22 micron filters. All solutions are available separately as 1 ml bottles. Larger quantities are available on request.

Precautions and Disclaimer

This product is for laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

It is recommended that the reagents of this kit be stored at 4 °C. Storage at –20 °C will not adversely affect the kit reagents and the reagents as supplied are stable at room temperature for short-term storage. Kit reagents should not be set under ultraviolet light to protect them from microorganisms.

Handling and Procedures

The application method described below is for the sitting drop method with 10 µl drop size (e.g. in Corning Crystal*EX*™ plates, our product no Z709409). For smaller drop sizes (e.g. 2 or 4 µl in Greiner CrystalQuick™ plates, our produc no. Z666130 and Z617644) smaller volumes with same ratios are used. The detergents can be used for hanging drop and microbatch methods in similar manner.

1. Pipet crystallization reagent into the reservoir.

2. Pipet 5 microliters of sample onto a sitting drop post (50% of drop volume).

3. Pipet 1 microliter of Detergent 1 into the sample drop (10% of drop volume).

4. Pipet 4 microliters of the crystallization reagent into the sample/detergent drop. (40% of drop volume) When mixing use caution to avoid bubbles and to minimize spreading of the drop. Some drop spreading will occur due to the nature of the detergent.

5. Seal the reservoir. Repeat for next detergent. The sealing membrane can be pierced by standard needles used in automatic liquid handling equipment. If you need to remove the sealing membrane, first check for drops hanging at the bottom side of the membrane. If necessary, centrifuge the plate or knock it on the table to get those drops down into the reservoir.

Observation

Drops are typically observed by a stereo microscope at 10 to 100X. Record all observation by scanning every droplet on the slides.

Scan the focal plane for small crystals and record observations for all droplets. Scan the first time shortly after the screen is set up. Then for the first 5-10 days, information may be recorded daily and, thereafter, on a weekly basis. Records should follow the same scheme as without use of detergents.

References

1. Michel, H. (Ed.) Crystallization of membrane proteins, CRC Press, 1991.
2. Ducruix, A., Giege, R. (Eds.), Crystallization of nucleic acids and proteins. The Practical Approach Series. Oxford Univ. Press, (1992).
3. Cudney, B. et al, Screening and optimization strategies for macromolecular crystal growth, Acta Cryst, D50, 414-423, (1994).

66317 Detergent Screening Kit Observation Sheet

Sample: _____ Date: _____

Sample Conzentration: _____ Reservoir Volume: _____

Sample Puffer: _____ Temperature: _____

Reservoir Composition: _____

Drop Volume: Total _____ul Sample_____ul Reservoir_____ul Detergent _____ul

1 Clear Drop
2 Phase Seperation
3 Regular Granular Precipitate
4 Birefringent Precipitate or Microcrystals
5 Posettes or Spherulites
6 Needles (1D Growth)
7 Plates (2D Growth)
8 Single Crystals (3D Growth < 0.2mm)
9 Single Crystals (3D Growth > 0.2mm)

No.	Product No.	Name	Date:	Date:	Date:	Date:	Date:	Date:
1.	**50006**	Hexyl-beta-D-glucoside 200 mM						
2.	**44615**	Heptyl-beta-D-glucoside 150 mM						
3.	**18842**	Octyl-beta-D-glucoside 100 mM						
4.	**30887**	Octyl-alpha/beta-glucoside 100 mM						
5.	**11448**	Nonyl-beta-D-glucoside 50 mM						
6.	**04978**	Methyl-6-O-(N-heptylcarbamoyl)-alpha-D-glucopyranoside (HECAMEG) 200 mM						
7.	**42387**	Triethyleneglycol monoocyl ether 1 mM						
8.	**41957**	Triethyleneglycol monodecyl ether 1 mM						
9.	**07891**	Triethyleneglycol monododecyl ether 1 mM						
10.	**13172**	Tetraethylenglykolmonooctylether 1 mM						
11.	**07888**	Tetraethyleneglycol monodecyl ether 1 mM						
12.	**16802**	Tetraethyleneglycol monododecyl ether 1 mM						
13.	**28000**	Pentaethyleneglycol monodecyl ether 1 mM						
14.	**04556**	Pentaethyleneglycol monododecyl ether 1 mM						
15.	**03269**	Hexaethyleneglycol monodecyl ether 1 mM						
16.	**15931**	Hexaethyleneglycol monododecyl ether 1 mM						
17.	**39376**	Heptaethyleneglycol monodecyl ether 1 mM						
18.	**49534**	Heptaethyleneglycol monododecyl ether 1 mM						
19.	**07511**	Octaethyleneglycol monodecyl ether 1 mM						
20.	**55377**	Octaethyleneglycol monododecyl ether 1 mM						
21.	**40913**	Nonaethyleneglycol monododecyl ether 1 mM						
22.	**07509**	Decyl-beta-D-maltoside 10 mM						
23.	**04836**	Undecyl-beta-D-maltoside 10 mM						
24.	**54202**	Dodecyl-beta-D-maltoside 3 mM						
25.	**08386**	Hexadecyl-beta-D-maltoside 0.1 mM						
26.	**54280**	Cyclohexylmethyl-beta-D-maltoside 500 mM						
27.	**19164**	2-Cyclohexylethyl-beta-D-maltoside 200 mM						
28.	**41583**	6-Cyclohexylpentyl-beta-D-maltoside 30 mM						
29.	**51793**	6-Cyclohexylhexyl-beta-D-maltoside 30 mM						
30.	**39489**	Heptyl-beta-D-thioglucoside 300 mM						
31.	**07818**	Nonyl-beta-D-1-thiomaltopyranoside 30 mM						
32.	**38498**	Decyl-beta-D-1-thiomaltopyranoside 10 mM						
33.	**19899**	CHAPS 100 mM						
34.	**39490**	MEGA-8 500 mM						
35.	**44882**	MEGA-9 200 mM						
36.	**43104**	N,N-Dimethylhexylamine N-oxide 100 mM						
37.	**41261**	N,N-Dimethyloctylamine N-oxide 100 mM						
38.	**49556**	N,N-Dimethylnonylamine N-oxide 100 mM						
39.	**18705**	N,N-Dimethyldecylamine N-oxide 100 mM						
40.	**57915**	N,N-Dimethyldodecylamine N-oxide 100 mM						
41.	**54185**	3-(N,N-Dimethyloctylammonio)propanesulfonate 500 mM						
42.	**54196**	3-(N,N-Dimethyldecylammonio)propanesulfonate 300 mM						
43.	**16974**	3-(N,N-Dimethyldodecylammonio)propanesulfonate 30 mM						
44.	**53502**	3-(N,N-Dimethylmyristoylammonio)propanesulfonate 3 mM						
45.	**44490**	3-(N,N-Dimethylpalmitoylammonio)propanesulfonate 0.3 mM						
46.	**38544**	O-(n-Octyl)-phosphorylcholine 1 M						
47.	**55461**	O-(n-Decyl)-phosphorylcholine 100 mM						
48.	**16448**	O-(n-Tetradecyl)-phosphorylcholine 1.5 M						

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