THE MPD SUITE

FOR SCREENING OF PROTEIN CRYSTALLIZATION CONDITIONS

The MPD Suite provides:

- A ready-to-use kit format to which only protein needs to be added, for easy and fast screening
- 96 precisely defined chemical solutions containing 2-methyl-2,4-pentandiol as precipitant
- A precipitant that lowers the chemical activity of water and thereby reduces the number of electrostatic interactions between the protein and its solvent
- A precipitant that functions as cryoprotectant and thereby protects crystals from breakage due to formation of crystalline ice when performing flash-freezing experiments
- A first set of solutions (conditions 1–48) containing a combination of MPD with 48 different salts known to be effective as co-crystallizers
- A second set of solutions (conditions 49–72) containing different concentrations of MPD in combination with various pH conditions in a 4x6 grid format to precisely define the effect of these factors
- A third set (conditions 73–96) with the most popular solutions from the BMCD enabling screening for different combinations of co-precipitant, salts, and buffers that proved to be successful for other proteins
- An intermediate step between results received from an MPD containing suite (e.g., The Classics Suite), and before a narrower refinement

The MPD Suite is available in 1 ml DWBlock and 10 ml tube formats.

The formulations of the 96 conditions of this screen, together with an order number for the 100 ml refill solution for each condition, are found on pages 2 and 3. Optimization reagent stock solutions for each NeXtal crystallization screen are available on our website. Please contact us with any questions about condition formulations or optimization.

THE MPD SUITE COMPOSITION TABLE

#	Well	Salt	Buffer	Precipitant	100 ml Refill SKU
1	A1	0.2 M Cadmium chloride		40% (v/v) MPD	134501-01
2	A2	0.2 M Potassium fluoride		40% (v/v) MPD	134501-02
3	A3	0.2 M Ammonium fluoride		40% (v/v) MPD	134501-03
4	A4	0.2 M Lithium chloride		40% (v/v) MPD	134501-04
5	A5	0.2 M Magnesium chloride		40% (v/v) MPD	134501-05
6	A6	0.2 M Sodium chloride		40% (v/v) MPD	134501-06
7	A7	0.2 M Calcium chloride		40% (v/v) MPD	134501-07
8	A8	0.2 M Potassium chloride		40% (v/v) MPD	134501-08
9	A9	0.2 M Ammonium chloride		40% (v/v) MPD	134501-09
10	A10	0.2 M Sodium iodide		40% (v/v) MPD	134501-10
11	A11	0.2 M Potassium iodide		40% (v/v) MPD	134501-11
12	A12	0.2 M Ammonium iodide		40% (v/v) MPD	134501-12
13	B1	0.2 M Sodium thiocyanate		40% (v/v) MPD	134501-13
14	B2	0.2 M Potassium thiocyanate		40% (v/v) MPD	134501-14
15	B3	0.2 M Lithium nitrate		40% (v/v) MPD	134501-15
16	B4	0.2 M Magnesium nitrate		40% (v/v) MPD	134501-16
17	B5	0.2 M Sodium nitrate		40% (v/v) MPD	134501-17
18	B6	0.2 M Potassium nitrate		40% (v/v) MPD	134501-18
19	B7	0.2 M Ammonium nitrate		40% (v/v) MPD	134501-19
20	B8	0.2 M Zinc sulfate		40% (v/v) MPD	134501-20
21	B9	0.2 M Sodium formate		40% (v/v) MPD	134501-21
22	B10	0.2 M Potassium formate		40% (v/v) MPD	134501-22
23	B11	0.2 M Ammonium formate		40% (v/v) MPD	134501-23
24	B12	0.2 M Lithium acetate		40% (v/v) MPD	134501-24
25	C1	0.2 M Magnesium acetate		40% (v/v) MPD	134501-25
26	C2	0.2 M Sodium malonate		40% (v/v) MPD	134501-26
27	C3	0.2 M Sodium acetate		40% (v/v) MPD	134501-27
28	C4	0.2 M Calcium acetate		40% (v/v) MPD	134501-28
29	C5	0.2 M Potassium acetate		40% (v/v) MPD	134501-29
30	C6	0.2 M Ammonium acetate		40% (v/v) MPD	134501-30
31	C7	0.2 M Lithium sulfate		40% (v/v) MPD	134501-31
32	C8	0.2 M Magnesium sulfate		40% (v/v) MPD	134501-32
33	C9	0.2 M Cesium chloride		40% (v/v) MPD	134501-33
34	C10	0.2 M Nickel chloride		40% (v/v) MPD	134501-34
35	C11	0.2 M Ammonium sulfate		40% (v/v) MPD	134501-35
36	C12	0.2 M di-Sodium tartrate		40% (v/v) MPD	134501-36
37	D1	0.2 M Potassium/Sodium tartrate		40% (v/v) MPD	134501-37
38	D2	0.2 M di-Ammonium tartrate		40% (v/v) MPD	134501-38
39	D3	0.2 M Sodium phosphate		40% (v/v) MPD	134501-39
40	D4	0.2 M Potassium bromide		40% (v/v) MPD	134501-40
41	D5	0.2 M Sodium bromide		40% (v/v) MPD	134501-41
42	D6	0.2 M di-Potassium phosphate		40% (v/v) MPD	134501-42
43	D7	0.2 M Ammonium phosphate		40% (v/v) MPD	134501-43
44	D8	0.2 M di-Ammonium phosphate		40% (v/v) MPD	134501-44
45	D9	0.2 M tri-Lithium citrate		40% (v/v) MPD	134501-45
46	D10	0.2 M Sodium citrate		40% (v/v) MPD	134501-46
47	D11	0.2 M tri-Potassium citrate		40% (v/v) MPD	134501-47
48	D12	0.18 M tri-Ammonium citrate		40% (v/v) MPD	134501-48

THE MPD SUITE COMPOSITION TABLE

#	Well	Salt	Buffer	Precipitant	100 ml Refill SKU
49	E1		0.1 M Citric acid pH 4.0	10% (v/v) MPD	134501-49
50	E2		0.1 M Sodium acetate pH 5.0	10% (v/v) MPD	134501-50
51	E3		0.1 M MES pH 6.0	10% (v/v) MPD	134501-51
52	E4		0.1 M HEPES pH 7.0	10% (v/v) MPD	134501-52
53	E5		0.1 M TRIS pH 8.0	10% (v/v) MPD	134501-53
54	E6		0.1 M BICINE pH 9.0	10% (v/v) MPD	134501-54
55	E7		0.1 M Citric acid pH 4.0	20% (v/v) MPD	134501-55
56	E8		0.1 M Sodium acetate pH 5.0	20% (v/v) MPD	134501-56
57	E9		0.1 M MES pH 6.0	20% (v/v) MPD	134501-57
58	E10		0.1 M HEPES pH 7.0	20% (v/v) MPD	134501-58
59	E11		0.1 M TRIS pH 8.0	20% (v/v) MPD	134501-59
60	E12		0.1 M BICINE pH 9.0	20% (v/v) MPD	134501-60
61	F1		0.1 M Citric acid pH 4.0	40% (v/v) MPD	134501-61
62	F2		0.1 M Sodium acetate pH 5.0	40% (v/v) MPD	134501-62
63	F3		0.1 M MES pH 6.0	40% (v/v) MPD	134501-63
64	F4		0.1 M HEPES pH 7.0	40% (v/v) MPD	134501-64
65	F5		0.1 M TRIS pH 8.0	40% (v/v) MPD	134501-65
66	F6		0.1 M BICINE pH 9.0	40% (v/v) MPD	134501-66
67	F7		0.1 M Sodium acetate pH 4.0	65% (v/v) MPD	134501-67
68	F8		0.1 M Sodium acetate pH 5.0	65% (v/v) MPD	134501-68
69	F9		0.1 M MES pH 6.0	65% (v/v) MPD	134501-69
70	F10		0.1 M HEPES pH 7.0	65% (v/v) MPD	134501-70
71	F11		0.1 M TRIS pH 8.0	65% (v/v) MPD	134501-71
72	F12		0.1 M BICINE pH 9.0	65% (v/v) MPD	134501-72
73	G1	0.1 M Sodium citrate	0.1 M HEPES sodium salt pH 7.5	10% (w/v) MPD	134501-73
74	G2	0.05 M Magnesium chloride	0.1 M TRIS.HCl pH 8.5	12% (w/v) MPD	134501-74
75	G3	0.02 M Calcium chloride	0.1 M Sodium acetate pH 4.6	15% (w/v) MPD	134501-75
76	G4		0.1 M Imidazole.HCl pH 8.0	15% (w/v) MPD; 5% (w/v) PEG 4000	134501-76
77	G5	0.2 M Ammonium acetate	0.1 M Sodium citrate pH 5.6	15% (w/v) MPD	134501-77
78	G6	0.2 M Magnesium acetate	0.1 M MES sodium salt pH 6.5	15% (w/v) MPD	134501-78
79	G7	0.2 M Sodium citrate	0.1 M HEPES sodium salt pH 7.5	15% (w/v) MPD	134501-79
80	G8	0.1 M Sodium citrate	0.1 M HEPES sodium salt pH 7.5	20% (w/v) MPD	134501-80
81	G9		0.1 M Imidazole.HCl pH 8.0	20% (w/v) MPD	134501-81
82	G10	0.2 M Sodium chloride		20% (w/v) MPD; 4% (w/v) Glycerol	134501-82
83	G11	0.02 M Calcium chloride	0.1 M Sodium acetate pH 4.6	30% (w/v) MPD	134501-83
84	G12	0.2 M Ammonium acetate	0.1 M Sodium citrate pH 5.6	30% (w/v) MPD	134501-84
85	H1	0.2 M Magnesium acetate	0.1 M MES sodium salt pH 6.5	30% (w/v) MPD	134501-85
86	H2	0.5 M Ammonium sulfate	0.1 M HEPES sodium salt pH 7.5	30% (w/v) MPD	134501-86
87	H3	0.2 M Sodium citrate	0.1 M HEPES sodium salt pH 7.5	30% (w/v) MPD	134501-87
88	H4		0.1 M HEPES sodium salt pH 7.5	30% (w/v) MPD; 5% (w/v) PEG 4000	134501-88
89	H5		0.1 M Imidazole.HCl pH 8.0	30% (w/v) MPD;10% (w/v) PEG 4000	134501-89
90	H6			30% (w/v) MPD; 20% (w/v) Ethanol	134501-90
91	H7			35% (w/v) MPD	134501-91
92	H8		0.1 M Imidazole.HCl pH 8.0	35% (w/v) MPD	134501-92
93	H9		0.1 M TRIS.HCl pH 8.5	40% (w/v) MPD	134501-93
94	H10		0.1 M HEPES sodium salt pH 7.5	47% (w/v) MPD	134501-94
95	H11			47% (w/v) MPD; 2% (w/v) tert-Butanol	134501-95
96	H12			50% (w/v) MPD	134501-96

Other NeXtal Crystallization Screens Available

- The Classics Suite
- The Classics Lite Suite
- The Classics II Suite
- The Cryos Suite
- The PEGs Suite
- The $AmSO_4$ Suite
- The MPD Suite
- The Anions Suite
- The Cations Suite
- The pHClear Suite
- The pHClear II Suite
- The MbClass Suite
- The MbClass II Suite
- The Protein Complex Suite
- The PEGs II Suite
- The ComPAS Suite
- The PACT Suite
- The Nucleix Suite
- The JCSG+ Suite
- The JCSG Core I-IV Suites
- The Opti-Salts Suite

NeXtal Biotechnologies
6201 Trust Drive
Holland, OH 43528
P: +1.419.794.7890
F: +1.419.491.1002
W: nextalbiotech.com
E: customerservice@nextalbiotech.com

NeXtal