

Appendix A: References

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Appendix B: Initial crystal screen formulations

PEG_Ion

1	2	3	4	5	6
Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel
pH	pH	pH	pH	pH	pH
A 0.2M sodium fluoride 20% PEG 3350	0.2M magnesium chloride hexahydrate 20% PEG 3350	0.2M ammonium chloride 20% PEG 3350	0.2M sodium thiocyanate 20% PEG 3350	0.2M sodium nitrate 20% PEG 3350	0.2M sodium formate 20% PEG 3350
B 0.2M potassium fluoride 20% PEG 3350	0.2M sodium chloride 20% PEG 3350	0.2M sodium iodide 20% PEG 3350	0.2M potassium thiocyanate 20% PEG 3350	0.2M potassium nitrate 20% PEG 3350	0.2M potassium formate 20% PEG 3350
C 0.2M ammonium fluoride 20% PEG 3350	0.2M Calcium chloride dihydrate 20% PEG 3350	0.2M potassium iodide 20% PEG 3350	0.2M lithium nitrate 20% PEG 3350	0.2M ammonium nitrate 20% PEG 3350	0.2M ammonium formate 20% PEG 3350
D 0.2M lithium chloride anhydrous 20% PEG 3350	0.2M potassium chloride 20% PEG 3350	0.2M ammonium iodide 20% PEG 3350	0.2M magnesium nitrate hexahydrate 20% PEG 3350	0.2M magnesium formate 20% PEG 3350	0.2M lithium acetate dihydrate 20% PEG 3350
E 25 % PEG 400	0.1M Citric acid pH 3.5	25 % PEG 400 pH 5.0	25 % PEG 400 pH 5.0	25 % PEG 400 pH 6.0	25 % PEG 400 pH 6.5
F 25 % PEG 3350	0.1M Citric acid pH 3.5	25 % PEG 3350 pH 5.0	25 % PEG 3350 pH 5.0	25 % PEG 3350 pH 6.0	25 % PEG 3350 pH 6.5
G 25 % PEG 8000	0.1M Citric acid pH 3.5	25 % PEG 8000 pH 5.0	25 % PEG 8000 pH 5.0	25 % PEG 8000 pH 6.0	25 % PEG 8000 pH 6.5
H 10 % PEG 20000	0.1M Citric acid pH 3.5	10 % PEG 20000 pH 5.0	10 % PEG 20000 pH 5.0	10 % PEG 20000 pH 6.0	10 % PEG 20000 pH 6.5
7	8	9	10	11	12
Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel
pH	pH	pH	pH	pH	pH
A 0.2M magnesium acetate tetrahydrate 20% PEG 3350	0.2M potassium acetate 20% PEG 3350	0.2M sodium sulfate decahydrate 20% PEG 3350	0.2M potassium sodium tartrate tetrahydrate 20% PEG 3350	0.2M potassium dihydrogen phosphate 20% PEG 3350	0.2M tri-lithium citrate tetrahydrate 20% PEG 3350
B 0.2M zinc acetate dihydrate 20% PEG 3350	0.2M ammonium acetate 20% PEG 3350	0.2M potassium sulfate 20% PEG 3350	0.2M di-ammonium tartrate 20% PEG 3350	0.2M di-potassium hydrogen phosphate 20% PEG 3350	0.2M tri-sodium citrate dihydrate 20% PEG 3350
C 0.2M sodium acetate trihydrate 20% PEG 3350	0.2M lithium sulfate monohydrate 20% PEG 3350	0.2M ammonium sulfate 20% PEG 3350	0.2M sodium dihydrogen phosphate monohydrate 20% PEG 3350	0.2M sodium hydrogen phosphate dihydrate 20% PEG 3350	0.2M tri-potassium citrate monohydrate 20% PEG 3350
D 0.2M calcium acetate hydrate 20% PEG 3350	0.2M magnesium sulfate heptahydrate 20% PEG 3350	0.2M di-sodium tartrate dihydrate 20% PEG 3350	0.2M di-sodium hydrogen phosphate dihydrate 20% PEG 3350	0.2M di-ammonium hydrogen phosphate 20% PEG 3350	0.2M di-ammonium hydrogen citrate 20% PEG 3350
E 25 % PEG 400	0.1M Na HEPES pH 7.0	0.1M Tris HCl pH 8.0	0.1M Tris pH 8.5	0.1M Tris pH 9.0	0.1M Glycine pH 10.0
F 25 % PEG 3350	0.1M Na HEPES pH 7.0	0.1M Tris HCl pH 8.0	0.1M Tris pH 8.5	0.1M Tris pH 9.0	0.1M Glycine pH 10.0
G 25 % PEG 8000	0.1M Na HEPES pH 7.0	0.1M Tris HCl pH 8.0	0.1M Tris pH 8.5	0.1M Tris pH 9.0	0.1M Glycine pH 10.0
H 10 % PEG 20000	0.1M Na HEPES pH 7.0	0.1M Tris HCl pH 8.0	0.1M Tris pH 8.5	0.1M Tris pH 9.0	0.1M Glycine pH 10.0

Hampton

1	2	3	4	5	6
Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel
30% MPD 0.02M CaCl2	0.1M NaCH3CO2	2M (NH4)2SO4	25% PEG 8000 0.2M (NH4)2SO4	28% PEG 400 0.2M CaCl2	30% MPD 0.5M (NH4)2SO4
pH 4.6	0.1M NaCH3CO2	pH 5.6	0.1M Na-Cacodylate	0.1M Na-Hepes	0.1M Na-Hepes
25% PEG 4000 0.2M NH4CH3CO2	0.1M NaCH3CO2	0.1M NaCH3CO2	20% PEG 8000 0.2M MgCl2	1.5M LiSO4	10% PEG 6000 MPD
pH 4.6	0.1M NaCH3CO2	pH 5.6	0.1M Na-Cacodylate	0.1M Na-Hepes	5% 0.1M Na-Hepes
25% PEG 4000 0.2M (NH4)2SO4	25% PEG 400 0.1M (NH4)2SO4	2% Polyethyleneimine 0.5M NaCl	30% MPD MgCl2	25% PEG 400 0.2M MgCl2	20% Jelfamine M900
pH 4.6	0.1M NaCH3CO2	0.1M Sodium Citrate	0.1M Na-Cacodylate	0.1M Na-Hepes	0.1M Na-Hepes
20% 2-Propanol 0.2M CaCl2	0.1M NaCH3CO2	35% tert-Butanol	25% PEG 8000 0.2M NaCH3CO2	0.8M KNa-Tartrate	1.6M (NH4)2SO4 0.1M NaCl
pH 4.6	0.1M NaCH3CO2	0.1M NaCH3CO2	0.1M Sodium Citrate	0.1M Na-Hepes	0.1M Na-Hepes
2M Na-Formate	0.1M NaCH3CO2	10% Jelfamine M900 0.01M FeCl2	18% PEG 8000 0.2M ZnCH3CO2	0.8M NaH2PO4 0.8M KH2PO4	2M NH4-Formate
pH 4.6	0.1M NaCH3CO2	0.1M Sodium Citrate	0.1M Na-Cacodylate	0.1M Na-Hepes	0.1M Na-Hepes
8% PEG 4000	0.1M NaCH3CO2	2.5M 1,6-Hexanediol	18% PEG 8000 0.2M CaCH3CO2	1.4M Sodium Citrate	1M NaCH3CO2
pH 4.6	0.1M NaCH3CO2	0.1M Sodium Citrate	0.1M Na-Cacodylate	0.1M Na-Hepes	0.05M Cs2SO4
2M (NH4)2SO4	0.1M NaCH3CO2	0.1M Na-Formate	30% MPD 0.2M Sodium Citrate	2% PEG 400 2M (NH4)2SO4	70% MPD
pH 4.6	0.1M NaCH3CO2	0.1M Na-Cacodylate	0.1M Na-Cacodylate	0.1M Na-Hepes	0.1M Na-Hepes
2M NaCl	0.1M NaCH3CO2	30% 2-Propanol 20% PEG 4000	30% 2-Propanol 0.1M Na-Cacodylate	10% 2-Propanol 20% PEG 4000	4.3M NaCl
pH 4.6	0.1M NaCH3CO2	0.1M Sodium Citrate	0.1M Na-Cacodylate	0.1M Na-Hepes	0.1M Na-Hepes

7	8	9	10	11	12
Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel	Salzkonz. / Fällungsmittel
10% PEG 8000	0.1M Na-Hepes	20% PEG MME 2000 0.1M Ni(II)Cl2	25% PEG MME 550 0.01M ZnSO4	15% PEG 8000 0.5M LiSO4	1.6M Sodium Citrate
pH 7.5	0.1M Na-Hepes	pH 8.5	0.1M MES	0.1M MES	pH 6.5
20% PEG 10000 8% Ethylene Glycol	0.1M Na-Hepes	0.1M Tris-HCl	25% PEG 8000 0.2M (NH4)2SO4	2% PEG 8000 1M LiSO4	25% PEG 1500
pH 7.5	0.1M Na-Hepes	pH 7.5	0.1M MES	0.1M LiSO4	0.2M Mg-Formate
2M (NH4)2SO4	0.1M Tris-HCl	3.4M 1,6-Hexanediol 0.2M MgCl2	0.1M NaH2PO4 0.1M KH2PO4	10% PEG 6000 2M NaCl	
pH 8.5	0.1M Tris-HCl	0.1M Tris	0.1M MES	0.1M NaCl	
25% PEG 4000 0.2M MgCl2	0.1M Tris-HCl	tert-Butanol	2M (NH4)2SO4	0.01M CTAB 0.5M NaCl 0.01M MgCl2	25% Ethylene Glycol
pH 8.5	0.1M Tris-HCl	0.1M Tris	0.1M MES	0.1M NaCl	
25% PEG 400 0.2M Sodium Citrate	0.1M Tris-HCl	1M LiSO4 0.01M Ni(II)Cl2	5% 2-Propanol 2M (NH4)2SO4	2M MgCl2	35% Dioxane
pH 8.5	0.1M Tris-HCl	0.1M Tris	0.1M MES	0.1M Bicine	
25% PEG 4000 0.2M LiSO4	0.1M Tris-HCl	12% Glycerol 1.8M (NH4)2SO4	0.05M CsCl2	20% PEG MME 550 0.1M NaCl	1M Imidazole
pH 8.5	0.1M Tris-HCl	0.1M Tris	0.1M MES	0.1M Bicine	pH 7.0
30% 2-Propanol 0.2M NH4CH3CO2	0.1M Tris-HCl	50% MPD 0.2M NH4H2PO4	1.8M (NH4)2SO4 0.01M CsCl2	2% Dioxane 10% PEG 20000	10% PEG 1000 PEG 8000
pH 8.5	0.1M Tris-HCl	0.1M Tris	0.1M MES	0.1M Bicine	10% Ethanol
25% PEG 4000 0.2M NaCH3CO2	0.1M Tris-HCl	20% Ethanol	30% PEG MME 5000 0.2M (NH4)2SO4	4M Na-Formate	1.5M NaCl
pH 8.5	0.1M Tris-HCl	0.1M Tris	0.1M MES		

Index_HT

	1	2	3	4	5	6
	Salzkonz./ Fällungsmittel	Salzkonz./ Fällungsmittel	Salzkonz./ Fällungsmittel	Salzkonz./ Fällungsmittel	Salzkonz./ Fällungsmittel	Salzkonz./ Fällungsmittel
	pH	pH	pH	pH	pH	pH
A	2M (NH ₄) ₂ SO ₄ 0.1M Citric Acid pH 3.5	3M NaCl 0.1M Na-Hepes pH 7.5	1M NaK-Phosphate pH 8.2	2.4M Na-Naionate pH 7.0	1M Succinic Acid pH 7.0 PEG MME 2000	1M (NH ₄) ₂ SO ₄ 1% PEG 8000 0.1M Na-Hepes pH 7.0
B	2M (NH ₄) ₂ SO ₄ 0.1M Bis-Tris pH 5.3	3M NaCl 0.1M Tris pH 8.5	1.4M Tr-Na-Citrate 0.1M Na-Hepes pH 7.5	1.5M (NH ₄) ₂ SO ₄ NaCl 0.1M Bis-Tris pH 6.5	2% PEG MME 2000 0.1M Bis-Tris pH 6.5	17% PEG 10000 0.1M NH ₄ CH ₃ CO ₂ 0.1M Bis-Tris pH 5.3
C	2M (NH ₄) ₂ SO ₄ 0.1M Bis-Tris pH 6.5	0.3M Mg-Formate 0.1M Bis-Tris pH 5.3	1.6M Tr-NH ₄ -Citrate pH 7.0	0.6M KNa-Tartrate PEG MME 5000 2.5% 0.1M Tris pH 8.5	20% PEG MME 2000 0.2M Trimethylamine-N-oxide 0.1M Tris pH 8.5	30% PEG MME 550 0.05M CaCl ₂ 0.1M Na-Hepes pH 7.5
D	2M (NH ₄) ₂ SO ₄ 0.1M Na-Hepes pH 7.5	0.5M Mg-Formate 0.1M Bis-Tris pH 6.5	0.5M Succinic Acid pH 7.0	20% PEG MME 5000 0.1M Bis-Tris pH 6.5	30% PEG MME 2000 0.1M K-Thiocyanate 0.1M Bis-Tris pH 7.0	30% PEG MME 550 0.05M MgCl ₂ 0.1M Na-Hepes pH 7.5
E	3M NaCl 0.1M Citric Acid pH 3.5	0.5M Mg-Formate 0.1M Na-Hepes pH 7.5	2.1M DL-Malic Acid 0.1M Tris pH 7.0	20% PEG MME 5000 0.1M Na-Hepes pH 7.0	30% PEG MME 2000 0.1M K-Bromide 0.1M Na-Hepes pH 7.0	45% MPD 0.2M CaCl ₂ 0.1M Bis-Tris pH 5.3
F	3M NaCl 0.1M NaOH ₃ CO ₂ pH 4.6	0.3M Mg-Formate 0.1M Tris pH 8.5	2.6M NaOH ₃ CO ₂ pH 5.6	1.1M Na-Naionate pH 7.0 2% Jaffanine M600 pH 7.0	45% MPD 0.2M NH ₄ CH ₃ CO ₂ 0.1M Na-Hepes pH 7.5	45% MPD 0.2M CaCl ₂ 0.1M Bis-Tris pH 6.5
G	3M NaCl 0.1M Bis-Tris pH 5.3	1M NaK-Phosphate pH 5.6	3.5M Na-Formate pH 7.0	30% Jaffanine M600 0.1M Na-Hepes pH 7.0	45% MPD 0.2M NH ₄ CH ₃ CO ₂ 0.1M Tris pH 8.5	45% MPD 0.2M NH ₄ CH ₃ CO ₂ 0.1M Bis-Tris pH 5.3
H	3M NaCl 0.1M Bis-Tris pH 6.5	1M NaK-Phosphate pH 6.9	1.1M Di-NH ₄ -Tartrate pH 7.0	45% Polypropylene Glycole P400 0.1M Bis-Tris pH 6.5	20% Polyvinylpyrrolidone K15 0.05M CaCl ₂ 0.1M Tris pH 8.5	45% MPD 0.2M NH ₄ CH ₃ CO ₂ 0.1M Bis-Tris pH 6.5
7	Salzkonz./ Fällungsmittel	Salzkonz./ Fällungsmittel	Salzkonz./ Fällungsmittel	Salzkonz./ Fällungsmittel	Salzkonz./ Fällungsmittel	Salzkonz./ Fällungsmittel
A	1% PEG 3350 1M (NH ₄) ₂ SO ₄ 0.1M Bis-Tris pH 5.3	25% PEG 3350 0.2M NaCl 0.1M Bis-Tris pH 6.5	25% PEG 3350 NH ₄ CH ₃ CO ₂ 0.1M Bis-Tris pH 8.5	20% PEG 3350 0.2M Na-Naionate pH 7.0 0.1M Bis-Tris pH 6.5	35% Penaepranol Propoxylate 0.2M KCl 0.1M Na-Hepes pH 7.5	1M (NH ₄) ₂ SO ₄ 0.1M NaCH ₃ CO ₂ pH 4.6
B	10% PEG 3350 0.2M L-Proline 0.1M Na-Hepes pH 7.5	25% PEG 3350 0.2M NaCl 0.1M Na-Hepes pH 7.5	25% PEG 3350 NH ₄ CH ₃ CO ₂ 0.1M Na-Hepes pH 7.5	20% PEG 3350 0.2M Tr-NH ₄ -Citrate pH 7.0 0.1M Na-Hepes pH 7.0	30% Penaepranol Ethoxygate 0.05M (NH ₄) ₂ SO ₄ 0.1M Bis-Tris pH 8.5	1M MgSO ₄ 0.1M NaCH ₃ CO ₂ pH 4.6
C	12% PEG 3350 0.05M CaCl ₂ 0.05M Ni(II)Cl ₂ 0.1M Na-Hepes pH 7.5	25% PEG 3350 0.2M NaCl 0.1M Tris pH 8.5	25% PEG 3350 NH ₄ CH ₃ CO ₂ 0.1M Tris pH 8.5	15% PEG 3350 0.1M Succinic Acid pH 7.0 0.1M Tris pH 8.5	22% Polyacrylic Acid 5:100 0.05M MgCl ₂ 0.1M Na-Hepes pH 7.5	12% PEG 6000 0.1M NaCl 0.1M NaCH ₃ CO ₂ pH 4.6
D	25% PEG 3350 0.2M (NH ₄) ₂ SO ₄ 0.1M Bis-Tris pH 5.3	25% PEG 3350 0.2M LUSO ₄ 0.1M Bis-Tris pH 5.3	25% PEG 3350 MgCl ₂ 0.1M Bis-Tris pH 5.3	20% PEG 3350 0.15M DL-Malic Acid pH 7.0 0.1M Bis-Tris pH 5.3	15% MPD 0.1M NaCl 0.1M NaCH ₃ CO ₂ pH 4.6	12% PEG 6000 0.1M MgCl ₂ 0.1M NaCH ₃ CO ₂ pH 4.6
E	25% PEG 3350 0.2M (NH ₄) ₂ SO ₄ 0.1M Bis-Tris pH 6.5	25% PEG 3350 0.2M LUSO ₄ 0.1M Bis-Tris pH 6.5	25% PEG 3350 MgCl ₂ 0.1M Bis-Tris pH 6.5	15% PEG 3350 0.1M Na-F-Formate 0.1M Bis-Tris pH 6.5	15% PEG 4000 0.1M ZnCH ₃ CO ₂ 0.1M NaCH ₃ CO ₂ pH 4.6	12% PEG 6000 0.1M LUSO ₄ 0.1M Tr-Na-Citrate pH 5.6
F	25% PEG 3350 0.2M (NH ₄) ₂ SO ₄ 0.1M Na-Hepes pH 7.5	25% PEG 3350 0.2M LUSO ₄ 0.1M Na-Hepes pH 7.5	25% PEG 3350 MgCl ₂ 0.1M Na-Hepes pH 7.5	20% PEG 3350 0.05M ZnCH ₃ CO ₂ 0.1M Na-Hepes pH 7.5	10% PEG 4000 0.2M (NH ₄) ₂ SO ₄ 0.1M NaCH ₃ CO ₂ pH 4.6	12% PEG 6000 0.1M (NH ₄) ₂ HP ₂ O ₄ 0.1M Tr-Na-HCl pH 8.5
G	25% PEG 3350 0.2M (NH ₄) ₂ SO ₄ 0.1M Tris pH 8.5	25% PEG 3350 0.2M LUSO ₄ 0.1M Tris pH 8.5	25% PEG 3350 MgCl ₂ 0.1M Tris pH 8.5	12% PEG 3350 0.05M CdCl ₂ 0.05M MgCl ₂ 0.1M Tris pH 8.5	15% PEG 4000 0.1M NaCH ₃ CO ₂ pH 4.6	25% PEG 400 0.2M NaCl 0.1M Tr-Na-Citrate pH 5.6
H	25% PEG 3350 0.2M NaCl 0.1M Bis-Tris pH 5.3	25% PEG 3350 0.2M NH ₄ CH ₃ CO ₂ 0.1M Bis-Tris pH 5.3	20% PEG 3350 0.2M KNa-Tartrate 0.1M Bis-Tris pH 5.3	12% PEG 3350 0.05M Ni(II)Cl ₂ 0.05M CdCl ₂ 0.1M Na-Hepes pH 7.5	15% PEG 4000 0.1M LUSO ₄ 0.1M Tr-Na-Citrate pH 5.6	25% PEG 400 0.2M LUSO ₄ 0.1M Tr-Na-Citrate pH 5.6

Salt_HT

1		2		3		4		5		6	
Salzkonz. / Fällungsmittel	pH	Salzkonz. / Fällungsmittel	pH	Salzkonz. / Fällungsmittel	pH	Salzkonz. / Fällungsmittel	pH	Salzkonz. / Fällungsmittel	pH	Salzkonz. / Fällungsmittel	pH
A 1.8M NaCH3CO2 pH 7.0	0.1M BisTris-Propane pH 7.0	1.5M NH4Cl pH 7.0	0.1M BisTris-Propane pH 7.0	2.2M NaCl pH 8.5	0.1M BisTris-Propane pH 7.0	1M tr-NH4-Citrate pH 7.0	0.1M BisTris-Propane pH 7.0	0.7M tr-Na-Citrate pH 7.0	0.1M BisTris-Propane pH 7.0	0.4M Mg-Formate pH 7.0	0.1M BisTris-Propane pH 7.0
B 2.7M NaCH3CO2 pH 7.0	0.1M BisTris-Propane pH 7.0	3.5M NH4Cl pH 7.0	0.1M BisTris-Propane pH 7.0	3.2M NaCl pH 7.0	2M tr-NH4-Citrate pH 7.0	1.2M tr-Na-Citrate pH 7.0	0.1M BisTris-Propane pH 7.0	1.2M tr-Na-Citrate pH 7.0	0.1M BisTris-Propane pH 7.0	0.7M Mg-Formate pH 7.0	0.1M BisTris-Propane pH 7.0
C 1.5M (NH4)2SO4 pH 7.0	0.1M BisTris-Propane pH 7.0	0.8M LiSO4 pH 7.0	0.1M BisTris-Propane pH 7.0	1.0M MgSO4 pH 7.0	0.1M BisTris-Propane pH 7.0	0.7M di-NH4-Tartrate pH 7.0	0.1M BisTris-Propane pH 7.0	0.6M K/Na-Tartrate pH 7.0	0.1M BisTris-Propane pH 7.0	0.5M K-Thiocyanate pH 7.0	0.1M BisTris-Propane pH 7.0
D 2.5M (NH4)2SO4 pH 7.0	0.1M BisTris-Propane pH 7.0	1.5M LiSO4 pH 7.0	0.1M BisTris-Propane pH 7.0	1.8M MgSO4 pH 7.0	0.1M BisTris-Propane pH 7.0	1.3M di-NH4-Tartrate pH 7.0	0.1M BisTris-Propane pH 7.0	1.2M K/Na-Tartrate pH 7.0	0.1M BisTris-Propane pH 7.0	4.0M NH4CH3CO2 pH 7.0	0.1M BisTris-Propane pH 7.0
E 1.5M (NH4)2SO4 pH 7.0	0.1M Tris pH 8.5	0.8M LiSO4 pH 8.5	0.1M Tris pH 8.5	1.0M MgSO4 pH 8.5	0.1M Tris pH 8.5	0.7M di-NH4-Tartrate pH 8.5	0.1M Tris pH 8.5	0.7M di-NH4-Tartrate pH 8.5	0.1M Tris pH 8.5	0.4M Mg-Formiat pH 8.5	0.1M Tris pH 8.5
F 2.5M (NH4)2SO4 pH 7.0	0.1M Tris pH 8.5	1.5M LiSO4 pH 8.5	0.1M Tris pH 8.5	1.8M MgSO4 pH 8.5	0.1M Tris pH 8.5	2.4M di-NH4H2PO4 pH 8.5	0.1M Tris pH 8.5	1.4M di-NH4-Tartrate pH 8.5	0.1M Tris pH 8.5	0.7M Mg-Formiat pH 8.5	0.1M Tris pH 8.5
G 1.5M (NH4)2SO4 pH 4.6	0.1M NaCH3CO2 pH 4.6	0.8M LiSO4 pH 4.6	0.1M NaCH3CO2 pH 4.6	1.0M MgSO4 pH 4.6	0.1M NaCH3CO2 pH 4.6	1.5M NH4Cl pH 4.6	0.1M NaCH3CO2 pH 4.6	1.0M di-NH4-Tartrate pH 4.6	0.1M NaCH3CO2 pH 4.6	0.5M K-Thiocyanate pH 4.6	0.1M NaCH3CO2 pH 4.6
H 2.5M (NH4)2SO4 pH 4.6	0.1M NaCH3CO2 pH 4.6	1.5M LiSO4 pH 4.6	0.1M NaCH3CO2 pH 4.6	1.8M MgSO4 pH 4.6	0.1M NaCH3CO2 pH 4.6	3.5M NH4Cl pH 4.6	0.1M NaCH3CO2 pH 4.6	1.8M di-NH4-Tartrate pH 4.6	0.1M NaCH3CO2 pH 4.6	4.0M NH4CH3CO2 pH 4.6	0.1M NaCH3CO2 pH 4.6
7		8		9		10		11		12	
Salzkonz. / Fällungsmittel	pH	Salzkonz. / Fällungsmittel	pH	Salzkonz. / Fällungsmittel	pH	Salzkonz. / Fällungsmittel	pH	Salzkonz. / Fällungsmittel	pH	Salzkonz. / Fällungsmittel	pH
A 2M Na-Formate pH 7.0	0.1M BisTris-Propane pH 7.0	1.2M DL-Malic acid pH 7.0	0.1M BisTris-Propane pH 7.0	1.4M Na-Malonate pH 7.0	0.1M BisTris-Propane pH 7.0	2.5M NH4-Nitrate pH 7.0	0.1M BisTris-Propane pH 7.0	1.5M Na-Nitrate pH 7.0	0.1M BisTris-Propane pH 7.0	0.5M Na-Succinate pH 7.0	0.1M BisTris-Propane pH 7.0
B 3.5M Na-Formate pH 7.0	0.1M BisTris-Propane pH 7.0	1.9M DL-Malic acid pH 7.0	0.1M BisTris-Propane pH 7.0	2.1M Na-Malonate pH 7.0	0.1M BisTris-Propane pH 7.0	6M NH4-Nitrate pH 7.0	0.1M BisTris-Propane pH 7.0	4M Na-Nitrate pH 7.0	0.1M BisTris-Propane pH 7.0	1.0M Na-Succinate pH 7.0	0.1M BisTris-Propane pH 7.0
C 2M Na-Formate pH 8.5	0.1M Tris pH 8.5	1.5M NH4Cl pH 8.5	0.1M Tris pH 8.5	2.2M NaCl pH 8.5	0.1M Tris pH 8.5	2.5M NH4-Nitrate pH 8.5	0.1M Tris pH 8.5	1.5M Na-Nitrate pH 8.5	0.1M Tris pH 8.5	0.7M tr-Na-Citrate pH 8.5	0.1M Tris pH 8.5
D 3.5M Na-Formate pH 8.5	0.1M Tris pH 8.5	3.5M NH4Cl pH 8.5	0.1M Tris pH 8.5	3.5M NaCl pH 8.5	0.1M Tris pH 8.5	6M NH4-Nitrate pH 8.5	0.1M Tris pH 8.5	4M Na-Nitrate pH 8.5	0.1M Tris pH 8.5	1.2M tr-Na-Citrate pH 8.5	0.1M Tris pH 8.5
E 0.6M K/Na-Tartrate pH 8.5	0.1M Tris pH 8.5	0.5M K-Thiocyanate pH 8.5	0.1M Tris pH 8.5	2.5M NaCl pH 8.5	0.1M NaCH3CO2 pH 4.6	2.5M NH4-Nitrate pH 4.6	0.1M NaCH3CO2 pH 4.6	1.5M Na-Nitrate pH 4.6	0.1M NaCH3CO2 pH 4.6	0.7M di-NH4-Tartrate pH 4.6	0.1M NaCH3CO2 pH 4.6
F 1.2M K/Na-Tartrate pH 8.5	0.1M Tris pH 8.5	4M NH4CH3CO3 pH 8.5	0.1M Tris pH 8.5	3.2M NaCl pH 4.6	0.1M NaCH3CO2 pH 4.6	6M NH4-Nitrate pH 4.6	0.1M NaCH3CO2 pH 4.6	4M Na-Nitrate pH 4.6	0.1M NaCH3CO2 pH 4.6	1.2M di-NH4-Tartrate pH 4.6	0.1M NaCH3CO2 pH 4.6
G 0.4M Mg-Formate pH 4.6	0.1M NaCH3CO2 pH 4.6	1M NH4H2PO4 pH 4.6	0.1M NaCH3CO2 pH 4.6	1M NaK-Phosphate pH 5.0	1.8M NaK-Phosphate pH 5.0	1.8M NaK-Phosphate pH 5.0	1.8M NaK-Phosphate pH 5.0	1M NaK-Phosphate pH 8.2	0.6M Na-Malonate pH 5.5	0.1M NaCH3CO2 pH 4.6	0.1M NaCH3CO2 pH 4.6
H 3.5M Na-Formate pH 4.6	0.1M NaCH3CO2 pH 4.6	1.8M NH4H2PO4 pH 4.6	0.1M NaCH3CO2 pH 4.6	1M NaK-Phosphate pH 7.0	1.8M NaK-Phosphate pH 7.0	1.8M NaK-Phosphate pH 7.0	1.8M NaK-Phosphate pH 7.0	1.5M NaK-Phosphate pH 7.0	1.4M Na-Malonate pH 5.5	0.1M NaCH3CO2 pH 4.6	0.1M NaCH3CO2 pH 4.6

1	2	3	4	5	6
Satzkonz./ Fällungsmittel	Satzkonz./ Fällungsmittel	Satzkonz./ Fällungsmittel	Satzkonz./ Fällungsmittel	Satzkonz./ Fällungsmittel	Satzkonz./ Fällungsmittel
20% PEG 400 0,1M Calcium acetate	0,1M Hepes pH 7,0	15% PEG MME 2000 0,15M NaCl	0,1M Tris pH 8,5	15% PEG 3350 0,1M (NH ₄) ₂ SO ₄	0,1M Hepes pH 7,5
20% PEG MME 500	0,1M Tris pH 8,0	20% PEG MME 2000	0,1M Citric acid pH 6,5	20% PEG 3350 0,1M NaCl	0,1M Tris pH 8,0
20% PEG 1000	0,1M MES pH 6,5	20% PEG MME 2000 0,2M NaCl	0,1M Hepes pH 7,0	20% PEG 3350 0,1M MgCl ₂	0,1M Tris pH 8,0
20% PEG 1500	0,1M MES pH 6,5	20% PEG MME 2000 0,1M Lithium sulfate	0,1M MES pH 6,0	20% PEG 3350 MgCl ₂	0,1M MES pH 6,5
20% PEG 400	0,1M Citric acid pH 5,5	20% PEG 400	0,1M MES pH 6,5	0,1M Na- Caodylate pH 6,0	0,1M Na- Caodylate pH 6,0
20% PEG 3350	0,1M Citric acid pH 5,5	20% PEG 400	0,1M MES pH 6,5	0,1M MOPS pH 7,0	0,1M MOPS pH 7,0
15% PEG MME 5000	0,1M Citric acid pH 5,5	15% PEG MME 5000	0,1M MES pH 6,5	0,1M MOPS pH 7,0	0,1M MOPS pH 7,0
15% PEG 20000	0,1M Citric acid pH 5,5	15% PEG 20000	0,1M MES pH 6,5	0,1M MOPS pH 7,0	0,1M MOPS pH 7,0

7	8	9	10	11	12
Satzkonz./ Fällungsmittel	Satzkonz./ Fällungsmittel	Satzkonz./ Fällungsmittel	Satzkonz./ Fällungsmittel	Satzkonz./ Fällungsmittel	Satzkonz./ Fällungsmittel
10% PEG 6000 0,1M NaCl	0,1M Hepes pH 7,0	12% PEG 8000 0,1M Citric acid pH 5,5	0,1M Hepes pH 7,5	12% PEG 8000 0,1M (NH ₄) ₂ SO ₄	0,1M Citric acid pH 5,5
10% PEG 6000 0,1M Calcium acetate	0,1M Hepes pH 7,5	12% PEG 8000 0,1M NaCl	0,1M Na- Caodylate pH 6,0	12% PEG 8000 Caodylate pH 6,0	0,1M Na- Caodylate pH 6,5
15% PEG 6000	0,1M Tris pH 8,0	12% PEG 8000 0,1M Magnesium acetate	0,1M MES pH 6,5	12% PEG 8000 0,1M CaCl ₂	0,1M Na- Caodylate pH 6,5
8% PEG 8000	0,1M MES pH 6,0	12% PEG 8000 0,1M KCl	0,1M Hepes pH 7,0	12% PEG 20000 CaCl ₂	0,1M Na- Caodylate pH 6,5
20% PEG 400	0,1M Na- Caodylate pH 6,0	20% PEG 400	0,1M Citric acid pH 6,5	20% PEG 400	0,1M Na- Caodylate pH 6,0
20% PEG 3350	0,1M Na- Caodylate pH 6,0	20% PEG 3350	0,1M Citric acid pH 6,5	20% PEG 3350	0,1M Na- Caodylate pH 6,0
15% PEG MME 5000	0,1M Na- Caodylate pH 6,0	15% PEG MME 5000	0,1M Citric acid pH 6,5	15% PEG MME 5000	0,1M Na- Caodylate pH 6,0
15% PEG 20000	0,1M Na- Caodylate pH 6,0	15% PEG 20000	0,1M Citric acid pH 6,5	15% PEG 20000	0,1M Na- Caodylate pH 6,0

HuMag

1	2	3	4	5	6
Satzkonz./ Fällungsmittel	pH	Satzkonz./ Fällungsmittel	pH	Satzkonz./ Fällungsmittel	pH
A 0,05M K-Oxalate pH 7,0 Na-Malonate pH 7,0	1M	0,01M K-Oxalate pH 7,0 0,8M Succinic acid pH 7,0	0,1M NaK-Phosphate 10% Glycerol	50% PEG 400 0,2M LSO4	0,1M NaCH3CO2 25% PEG 4000 15% Glycerol 0,2M (NH4)2SO4
B 0,05M K-Oxalate pH 9,1 Na-Malonate pH 9,0	1M	0,05M K-Oxalate pH 9,1 0,8M Succinic acid pH 9,0	0,1M Bicine pH 9,0 0,2M LSO4	1M Tris-Na-Citrate 1,5M Tris-K-Citrate	0,1M Na-Cacodylate pH 6,5 10% PEG 8000 0,1M Hepes pH 7,0
C 0,1M K-Oxalate pH 9,1		0,01M K-Oxalate pH 9,1 0,8M Succinic acid pH 9,0	0,1M Tris pH 8,0 LSO4	1,5M Tris-K-Citrate	0,1M Tris-HCl pH 10% PEG 8000 0,1M Bicine pH 9,0
D 0,1M K-Oxalate pH 7,0		0,8M Succinic acid pH 9,0	3,2M (NH4)2SO4	0,1M Citric acid pH 5,0 1,4M Tris-Na-Citrate	0,1M NaCH3CO2 20% PEG 8000 5,0
E 1,5M (NH4)2SO4		1M Na-Malonate pH 7,0 0,6M Succinic acid pH 7,0	50% Ethylene Glycol 0,2M MgCl2	10% PEG 3000 0,2M ZnCH3CO2	0,1M NaCH3CO2 20% PEG 8000 0,1M Bicine pH 9,0
F 1,5M Na-Malonate pH 7,0		1,6M Na-Malonate pH 7,0 0,2M Succinic acid pH 7,0	70% MPD 0,2M MgCl2	0,1M NaK-Phosphate 20% PEG 3000	0,1M NaCltrate 20% PEG 8000 0,2M LiCl2 0,1M Citric acid pH
G 1,5M Na-Malonate pH 9,0		1M Na-Malonate pH 7,0 Na-Formiate pH 7,0	10% 2-Propanol 0,2M ZnCH3CO2	0,1M Na-Cacodylate pH 6,5	0,1M Imidazole 10% PEG 8000 8,0
H 0,05M K-Oxalate pH 7,0 0,8M Succinic acid pH 7,0		2M Na-Formiate pH 9,1	10% 2-Propanol 0,2M NaCl	0,1M Hepes pH 7,5 0,1M Na-Cacodylate CaCH3CO2	20% PEG 3350 10% 2- Propanol

7	8	9	10	11	12
Satzkonz./ Fällungsmittel	pH	Satzkonz./ Fällungsmittel	pH	Satzkonz./ Fällungsmittel	pH
A 10% PEG 8000 8% Ethylene Glycol	0,1M Hepes pH 7,5	33% PEG MME 2000 0,1M NaCl	0,1M NaCH3CO2 pH 5,0	5% PEG 6000 6% Glycerol 0,1M MgCl2	0,1M Na-Cacodylate pH 6,5
B 20% PEG 8000	0,1M CHES pH 9,5	10% PEG 4000 0,2M ZnCl2	0,1M NaCH3CO2 pH 5,0	16% PEG 8000 18% 2- Propanol	0,1M Na-Citrate pH 5,6 Propanol
C 30% PEG 8000 0,2M LSO4	0,1M NaCH3CO2 pH 4,6	17% PEG 4000 0,2M NH4CH3CO2	0,1M Hepes pH 7,5	20% PEG 10000	0,1M Hepes pH 7,5
D 5% PEG 8000 40% MPD	0,1M Na- Cacodylate pH 7,0	1% PEG/MME 5000 0,8M NaK-Tartrate	0,1M Tris-HCl pH 8,5	20% PEG 10000	0,1M Tris-HCl pH 8,5
E 30% PEG MME 550 0,1M (NH4)2SO4	0,1M NaCH3CO2 pH 5,0	20% PEG/MME 5000 0,2M Na- Ibocyanate	0,9M Tris-NH4-Citrate	0,9M Tris-NH4-Citrate	0,1M Bis-Tris pH 6,5
F 10% PEG MME 2000	0,1M Tris- HCl pH 6,5	20% PEG/MME 5000 0,2M K- Nitrate	0,1M Bis-Tris pH 6,5	0,9M Tris-NH4-Citrate	0,1M NaCH3CO2 pH
G 25% PEG MME 2000 0,1M LiCl2	0,1M MES pH 6,5	23% PEG/MME 5000 10% 2- Propanol 0,1M (NH4)2SO4	0,1M MES pH 6,5	1,4M (NH4)2SO4 28% Ethylene Glycol 0,2M ZnCl2	0,1M NaCH3CO2 pH
H 30% PEG MME 2000 0,1M Na-thiocyanate	1% PEG 6000 3,4M Na- Formate	0,1M Tris-HCl pH 8,5	1,4M (NH4)2SO4	0,1M MES pH 6,5	30% PEG 300 0,1M NaCH3CO2 pH

Appendix C: Abbreviations

APS	ammonium persulfate
Arf	ADP ribosylating factor
CD	circular dichroism
COG	conserved oligomeric Golgi
COP	coat protein complex
DHHC-CRD	polytopic membrane proteins with the sequence DHHC and a cysteine-rich domain
DLS	dynamic light scattering
DMEM	Dulbecco's modified Eagle's medium
DNA	desoxyribonucleic acid
DTB	desthiobiotin
DTT	1,4-dithiothreitol
ECL	enhanced chemiluminescence
EDTA	ethylene diamine tetraacetate
ER	endoplasmic reticulum
GAP	GTPase activating proteins
GAPDH	glyceraldehydephosphate dehydrogenase
GARP	Golgi-associated retrograde protein
GDF	GDI displacement factors
GDI	GDP dissociation inhibitors
GDP	guanosine di phosphate
GEF	guanine nucleotide exchange factors
GF	gel-filtration
GSH	glutathion
GST	glutathion-S-transferase
GTP	guanosine tri phosphate
HA	hemagglutinin
HEK cell	human embryonic kidney cell
HOPS	homotypic fusion and vacuole protein sorting
HRP	horseradish peroxidase
IP	immuno-precipitation
IPTG	isopropyl thiogalactoside

K_m	Michaelis-Menten constant
LIC	ligation independent cloning
NCS	non-crystallographic symmetry
NSF	N-ethylmaleimide-sensitive factor
NTA	nitrilotriacetic acid
PAGE	poly acrylamide gel electrophorsis
Pal-CoA	palmitoyl-coenzym A
PCR	polymerase chain reaction
PEG	polyethylene glycol
PMSF	phenylmethysulfonyl fluoride
QCM	QuikChange mutagenesis
Rab	Ras-related in brain
rmsd	root mean square deviation
SAD	single wavelength anomalous dispersion
SDS	sodium dodecylsulfate
SEDT	spondyloepiphyseal dysplasia tarda
SNAP	soluble N-ethylmaleimide-sensitive factor attachment protein
SNARE	soluble N-ethylmaleimide sensitive factor attachment protein receptor
SRP	signal recognition particle
TEMRD	N,N,N',N'-tetramethylethylenediamine
TEV	tobacco etch virus
TLS	translation, libration, screw-motion
TRAPP	transport protein particle
TRIS	tris(hydroxymethyl)-aminomethan
wt	wild-type

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