

## Supplementary Table 1-Miroux

List of non *E. coli* MP produced in *E. coli* host for structural studies.

T7 expression system: C41(DE3) and C43(DE3) hosts			
PDB via Mpstruc (S. White)	Organism	Description	Name of bacterial host
4EHW	<i>Aquifex aeolicus</i> VF5	Kinase (LpxK)	C41λ(DE3)
4GGM	<i>Bacillus thuringiensis</i> serovar <i>konkukian</i>	Phosphodiester hydrolase (LpxI)	C41λ(DE3)
2J01	<i>Homo sapiens</i>	Phospholemman (FXVD1)	C43λ(DE3)
4F4L	<i>Magnetococcus marinus</i> MC-1	Bacterial voltage-gated sodium channel pore	C41λ(DE3)
2A9H	<i>Streptomyces lividans</i>	Channel (KcsA)	C41λ(DE3)
1WAZ	<i>Morganella morganii</i>	Transporter (MerF)	C43λ(DE3)
4LTO	<i>Alkalilimnicola ehrlichii</i>	Pore-only volt-gated sodium channel (NaVAe1p)	C41λ(DE3)
3P50, 3P4W, 3EAM, 3IGQ	<i>Gloeobacter violaceus</i>	Pentameric ligand-gated ion channel (GLIC)	C43λ(DE3)
3ZKR	<i>Erwinia chrysanthemi</i>	Prokaryotic pentameric ligand-gated ion channel (ELIC) in complex with bromoform:	C43λ(DE3)
4HZU	<i>Lactobacillus brevis</i>	ECF transporter complex	C43λ(DE3)
4A2N	<i>Methanosarcina acetivorans</i>	Transferase (ICMT)	C41λ(DE3)
3KP9	<i>Synechococcus</i> sp.	Thioredoxin domain protein (VKORC1)	C43λ(DE3)
2YVX, 2ZY9	<i>Thermus thermophilus</i> HB8	Transporter (MgtE)	C41λ(DE3)
3UX4	<i>Helicobacter pylori</i> J99	Channel (urea)	C43λ(DE3)
3S0X	<i>Methanococcus maripaludis</i>	Preflagellin aspartyl protease (FlaK)	C43λ(DE3)
3ODJ	<i>Haemophilus influenzae</i>	Peptidase (GlpG)	C43λ(DE3)
4JQ6	Isolated from the Mediterranean Sea	Proteorhodopsin (blue-light absorbing), Med12BPR.	C43λ(DE3)
3TIJ	<i>Vibrio cholerae</i>	Nupc family protein	C41λ(DE3)
4CAD	<i>Methanococcus maripaludis</i>	Protease Rce1 ( CAAX)	C41λ(DE3)
3RFU	<i>Legionella pneumophila</i>	Copper efflux ATPase	C43λ(DE3)
4J72	<i>Aquifex aeolicus</i>	Phospho-MurNAc-pentapeptide translocase (MraY)	C41λ(DE3)
3ZUY	<i>Neisseria meningitidis</i>	Bacterial ASBT homologues	C43λ(DE3)
3WAJ	<i>Archaeoglobus fulgidus</i>	OST with bound zinc & sulfate (AglB)	C43λ(DE3)
2B2F	<i>Archaeoglobus fulgidus</i>	Transporter (Amt-1)	C43λ(DE3)
3F3A, 2QEI, 2A65, 3GJD, 3MPN, 3TT1, 3USG 3QS4, 4MM4	<i>Aquifex aeolicus</i> VF5	Symporter (LeuT)	C41λ(DE3)
4IKV	<i>Geobacillus kaustophilus</i>	Proton-dependent oligopeptide transporter (POT)	C41λ(DE3)ΔacrB
4LDS	<i>Staphylococcus epidermidis</i>	Glucose/H <sup>+</sup> symporter (GlcP)	C41λ(DE3)
3VVN	<i>Pyrococcus furiosus</i>	Multidrug and Toxin Compound Extrusion (MATE)	C41λ(DE3)ΔacrB
4KPP	<i>Archaeoglobus fulgidus</i>	Ca <sup>2+</sup> /H <sup>+</sup> antiporter (CaX)	C41λ(DE3)
4K0J	<i>Cupriavidus metallidurans</i>	ZneA Zn(II)/proton antiporter	C43λ(DE3)
3GIA	<i>Methanocaldococcus jannaschii</i>	protein MJ0609 (ApcT)	C41λ(DE3)
4APS	<i>Streptococcus thermophilus</i>	Transporter (PepTSo)	C43λ(DE3)
2XUT	<i>Shewanella oneidensis</i>	Transporter (PepTSt)	C43λ(DE3)
2V50	<i>Pseudomonas aeruginosa</i>	Transporter (MexB)	C43λ(DE3)
T7 expression system: BL21(DE3) derivatives			
PDB via Mpstruc (S. White)	Organism	Type	Strain(s)
3L7I	<i>Staphylococcus epidermidis</i>	Polymerase (TagF)	BL21λ(DE3)
4G9K	<i>Saccharomyces cerevisiae</i>	NADH dehydrogenase (Ndi1)	BL21λ(DE3)pLysS
3VV9	<i>Trypanosoma brucei brucei</i>	Alternative oxidase (AOX)	BL21λ(DE3)
2XCI	<i>Aquifex aeolicus</i>	Glycosyltransferase (WaaA, KdsB)	BL21CodonPlusλ(DE3)
3RBH	<i>Pseudomonas aeruginosa</i>	Export Protein (AlgE)	BL21CodonPlusλ(DE3)
1H6S, 1BH3	<i>Rhodospseudomonas blastica</i>	Porin (E1M/A116K)	BL21λ(DE3)pLysS
3FID	<i>Salmonella typhimurium</i>	lipid A deacylase (LpxR)	BL21Starλ(DE3)
4E1T	<i>Yersinia pseudotuberculosis</i>	Invasin beta-domain	BL21λ(DE3)
3V8X	<i>Neisseria meningitidis</i>	Transferrin (TbpA)	BL21λ(DE3)
3QRA	<i>Yersinia pestis</i>	Adhesion Protein (Ail)	BL21λ(DE3)
3A2R	<i>Neisseria meningitidis</i>	OuterMP (PorB)	BL21λ(DE3)
2K0L (lsNMR)	<i>Klebsiella pneumoniae</i>	OuterMP (OmpA)	BL21λ(DE3)
2K4T (lsNMR)	<i>Homo sapiens</i>	Anion channel (VDAC-1)	BL21λ(DE3)
3EMN	<i>Mus musculus</i>	Anion channel (VDAC-1)	BL21λ(DE3)
2QDZ	<i>Bordetella pertussis</i>	Transporter (FhaC)	BL21λ(DE3)
1UYN	<i>Haemophilus influenzae</i>	Autotransporter (Trimeric Hia)	BL21λ(DE3)
3B07	<i>Staphylococcus aureus</i>	γ-hemolysin composed of LukF and Hlg2	B834λ(DE3)
4K3B	<i>Neisseria gonorrhoeae</i>	BamA with POTRA domains 1 - 5	BL21λ(DE3)
4K3C	<i>Haemophilus ducreyi</i>	BamA with POTRA domains 4 & 5	BL21λ(DE3)

Sup-Table1-Miroux

2LOU	<i>Homo sapiens</i>	Apelin receptor	BL21λ(DE3)
2MFR	<i>Homo sapiens</i>	Insulin receptor TM domain (AAs 940-980)	BL21λ(DE3)
3VMT	<i>Staphylococcus aureus</i>	Glycosyltransferase	BL21CodonPlusλ(DE3)
2KS1, 2JWA (lsNMR)	<i>Homo sapiens</i>	ErbB1/ErbB2, TM heterodimer	BL21λ(DE3)pLysS
2LZL (lsNMR)	<i>Homo sapiens</i>	Fibroblast growth factor receptor 3 (FGFR3, TM)	BL21λ(DE3)pLysS
2LCX (lsNMR)	<i>Homo sapiens</i>	ErbB4, TM dimer	BL21λ(DE3)pLysS
2L0J, 2LY0, 2KIX	<i>Influenza A</i>	Channel (AM2)	BL21CodonPlusλ(DE3) and BL21λ(DE3)pLysS
2KYV	<i>Homo sapiens</i>	Phospholamban Homopentamer	BL21λ(DE3)
2HAC (lsNMR)	<i>Homo sapiens</i>	TCR-CD3, TM dimer complex	BL21λ(DE3)
2M8R, 3HD7	<i>Rattus norvegicus</i>	Syntaxin 1A, TM & Syntaxin complex	BL21λ(DE3)
2HN2	<i>Thermotoga maritima</i>	Transporter (CorA Mg2+)	BL21CodonPlusλ(DE3)
2H30	<i>Morganella morganii</i>	Transporter (MerF HgII)	BL21λ(DE3)pLysS
4EV6	<i>Methanocaldococcus jannaschii</i>	Transporter (CorA Mg2+)	BL21λ(DE3)Rosetta
3ZRS, 2WLJ, 4LP8	<i>Magnetospirillum magnetotacticum</i>	Channel (KirBac3.1)	BL21CodonPlusλ(DE3)
3DWW (electron microscopy)	<i>Homo sapiens</i>	human microsomal prostaglandin E synthase 1	BL21λ(DE3)pLysS
2XQA, 3EHZ, 4HFI	<i>Gloeobacter violaceus</i>	Channel (pentameric GLIC)	BL21λ(DE3)
2VLO	<i>Herpes simplex</i>	Channel (pentameric ELIC)	BL21λ(DE3)
2Q7M	<i>Homo sapiens</i>	Lipoxygenase protein (FLAP)	BL21λ(DE3)
2M6B	<i>Homo sapiens</i>	Human glycine receptor (hGlyR-α1), TM monomer)	BL21λ(DE3)pLysS
4HTS	<i>Aquifex aeolicus</i>	Twin-arginine translocase receptor (TatC)	BL21λ(DE3)
4HUQ	<i>Lactobacillus brevis</i>	Folate ECF transporter complex	BL21λ(DE3)
3K3F	<i>Desulfovibrio vulgaris</i>	Transporter (Urea)	BL21λ(DE3)
3B60	<i>Salmonella typhimurium</i>	Flippase (MsbA)	BL21λ(DE3)
4DXW	<i>Alpha proteobacterium himb114</i>	Na channel (NaV)	BL21λ(DE3)
3P5N	<i>Staphylococcus aureus</i>	Transporter (RibU)	BL21λ(DE3)
4J9U	<i>Vibrio parahaemolyticus</i>	Potassium ion transporter (TrkH) in complex with TrkA	BL21λ(DE3)
2LNL (ssNMR)	<i>Homo sapiens</i>	Receptor (CXCR1)	BL21λ(DE3)
3QDC, 2KSY, 1H68, 1H2S	<i>Natronomonas pharaonis</i>	Rhodopsin (SRII)	BL21λ(DE3) and BL21λ(DE3) Tuner
4HYJ	<i>Exiguobacterium sibiricum</i>	Proteorhodopsin: Lysine is the proton donor in this novel proteorhodopsin	Rosettaλ(DE3)pLysS
4J7C	<i>Bacillus subtilis</i>	Potassium ion transporter (KtrAB)	BL21λ(DE3)
4HYG	<i>Methanoculleus marisnigri</i>	Presenilin (PSH)	BL21λ(DE3)
4HG6	<i>Rhodobacter sphaeroides</i>	Cellulose synthase/cellulose translocation intermediate (BcsA-BcsB)	Rosetta 2
3QNQ	<i>Bacillus cereus</i>	Transporter (ChbC EIC)	BL21λ(DE3)
3PJZ	<i>Vibrio parahaemolyticus</i>	Transporter (TrkH)	BL21λ(DE3)
4G1U	<i>Yersinia pestis</i>	Transporter (HmuUV)	BL21Goldλ(DE3)
3M71	<i>Haemophilus influenzae</i>	Anion channel (SLAC1)	BL21λ(DE3)pLysS
4KJS	<i>Bacillus subtilis</i>	Ca2+/H+ antiporter (YfkE)	BL21λ(DE3)
4F35	<i>Vibrio cholerae</i>	Symporter	BL21λ(DE3)
3AQP	<i>Thermus thermophilus</i>	(SecDF)	BL21CodonPlusλ(DE3)
4LZ6	<i>Bacillus halodurans</i>	Multidrug and Toxin Compound Extrusion (MATE) transporter (DinF-BH)	BL21λ(DE3)
4BWZ	<i>Thermus thermophilus</i>	Na+/H+ antiporter (NapA)	ΔacrABΔmacABΔyojHI Lemo21λ(DE3)
4M8J	<i>Proteus mirabilis</i>	Carnitine transporter (CaiT)	BL21λ(DE3)pLysS
4HUK	<i>Neisseria gonorrhoeae</i>	Multidrug and Toxin Compound Extrusion (MATE) transporter (NorM)	BL21λ(DE3)
3MKT	<i>Vibrio cholerae</i>	Transporter (NorM & MATE)	BL21λ(DE3)
1KPL	<i>Salmonella typhimurium</i>	Transporter (H+/Cl-)	BL21λ(DE3)

**Arabinose promoter based expression system**

PDB via Mpstruc (S. White)	Organism	Type	Strain(s)
3SY7, 2SY9, 3SYB	<i>Pseudomonas aeruginosa</i>	Channel (OccD1, OprD)	BL21λ(DE3)T1phage resistant
3SZD	<i>Pseudomonas aeruginosa</i>	Channel (OccK2, OpdF)	BL21λ(DE3)T1phage resistant
3SZV, 3T0S, 3T20, 3T24	<i>Pseudomonas aeruginosa</i>	Aromatic Hydrocarbon (OccK3, OpdO)	BL21λ(DE3)T1phage resistant
4GEY	<i>Pseudomonas putida</i>	Carbohydrate-specific transporter (OprB)	BL21λ(DE3)T1phage
2LHF	<i>Pseudomonas aeruginosa</i>	Outer MP (OprH)	PA(ΔoprH)
2X27	<i>Pseudomonas aeruginosa</i>	Outer MP (OprG)	C43λ(DE3)
2X55	<i>Yersinia pestis</i>	Plasminogen activator (Pla)	C43λ(DE3)
3D5K	<i>Pseudomonas aeruginosa</i>	Outer MP (OprM)	C43λ(DE3)
2QTK	<i>Pseudomonas aeruginosa</i>	Benzoate channel (OpdK)	C43λ(DE3)
2ODJ	<i>Pseudomonas aeruginosa</i>	Channel (OprD)	C43λ(DE3)

Sup-Table1-Miroux

3KVN	<i>Pseudomonas aeruginosa</i>	Autotransporter (EstA)	C43λ(DE3) & BL21Starλ(DE3)
3CSL	<i>Serratia marcescens</i>	Heme receptor complex (HasR)	MC4100 derivative
3DWO	<i>Pseudomonas aeruginosa</i>	Fatty acid transporter (FadL)	C43λ(DE3)
3TDO	<i>Clostridium difficile</i>	Hydrosulfide Ion Channel (FNT3)	BL21λ(DE3)pLysS
3ODJ, 2NR9	<i>Haemophilus influenzae</i>	IntraMembrane peptidase (GlpG)	TOP10
3KLY	<i>Vibrio cholerae</i>	Formate transporter (FocA)	C43λ(DE3)
3QF4	<i>Thermotoga maritima</i>	Heterodimeric ABC exporter	C43λ(DE3) or MC1061
1XFH, 3KBC, 3V8F	<i>Pyrococcus horikoshii</i>	Glutamate Transporter Homologue (GltPh)	TOP10 or DH10B
4KY0	<i>Thermococcus kodakarensis</i>	Aspartate Transporter	MC1061
3DL8	<i>Aquifex aeolicus</i>	Channel (SecYEG)	C43λ(DE3)
3MP7	<i>Pyrococcus furiosus</i>	Primed channel (SecYEb)	BL21λ(DE3)AI
3DIN	<i>Thermotoga maritima</i> MSB8	SecYEG protein in complex SecA	BL21λ(DE3)
2QJU	<i>Aquifex aeolicus</i>	Leucine Transporter (LeuT)	BL21λ(DE3)pLysS
3RCE	<i>Campylobacter lari</i>	OST in complex (PglB)	BL21-Gold SCM6
3DH4	<i>Vibrio parahaemolyticus</i>	NaGalactose Transporter (ySGLT)	XL1-blue
2XQ2	<i>Vibrio parahaemolyticus</i>	NaGalactose Transporter (ySGLT)	TOP10

**T5 promoter based expression system**

PDB via Mpstruc (S. White)	Organism	Type	Strain(s)
4HHS	<i>Arabidopsis thaliana</i>	Fatty acid α-dioxygenase (α-DOX)	M15
3O44	<i>Vibrio cholerae</i>	Pore-forming toxin (Cytosolin)	Origami B
4G6G	<i>Saccharomyces cerevisiae</i>	Dehydrogenase (Ndi1)	C43λ(DE3)
4GX0	<i>Geobacter sulfurreducens</i>	Channel (GsuK)	BL21λ(DE3)
3RBZ, 4EI2 4HYO, 4L73, 1LNQ, 3LDC, 4H33	<i>Methanothermobacter thermautotrophicus</i>	Potassium channel and mutants (MthK)	XL1-Blue, SG1309
3STL, 3OR7, 3EFF, 1BL8	<i>Listeria monocytogenes</i>	Channel (KyLm)	XL1-Blue
3E86, 3KOD, 3OUF, 3T1C, 3E86, 2Q67, 2AHY	<i>Streptomyces lividans</i>	Channel (KcsA)	XL1-Blue
1ORQ	<i>Bacillus cereus</i>	Channel (NaK)	SG13009
3V5U	<i>Aeropyrum pernix</i>	Channel (KyAP)	XL1-Blue
	<i>Methanocaldococcus janaschii</i>	Exchanger (NaCa)	BL21λ(DE3)pLysS

**Tetracyclin promoter based expression system**

PDB via Mpstruc (S. White)	Organism	Type	Strain(s)
2LME	<i>Yersinia enterocolitica</i>	Autotransporter (trimeric YadA)	BL21λ(DE3)
2GR8	<i>Haemophilus influenzae</i>	Trimeric autotransporter (Hia)	B834
3IGA	<i>Streptomyces lividans</i>	Potassium channel (KcsA)	JM-83
3BEH	<i>Mesorhizobium loti</i> Mloti	K1 cyclic nucleotide-regulated K+-channel	JM83
4DOJ, 2WIT	<i>Corynebacterium glutamicum</i>	Glycine betaine transporter (BetP)	DH5a
3NCY	<i>Salmonella enterica</i>	Antiporter (AdiC)	BL21 RIL-Xλ(DE3)
3NDO	<i>Synechocystis sp. pcc 6803</i>	H+/Cl- Eukaryotic Exchange Transporter	BL21λ(DE3) variant strain from Stratagene lot # 0420399

**Other promoter (Tac, Trp, Rham) based expression system**

PDB via Mpstruc (S. White)	Organism	Type	Strain(s)
1LKF	<i>Staphylococcus aureus</i>	Component of γ-hemolysin (LukF)	B834 and DH5a
4HSC	<i>Streptococcus pyogenes</i>	Streptolysin O pore-forming toxin	XL-1 Blue
1CWV	<i>Yersinia pseudotuberculosis</i>	Invasin C-terminal passenger domain	not found
2M6X (1sNMR)	<i>Hepatitis C virus</i>	p7 hexamer channels (isolate EUH1480)	DH5α
1ZLL, 2M3B	<i>Homo sapiens</i>	Phospholamban homopentamer	BL21λ(DE3)
2KNC (1sNMR)	<i>Homo sapiens</i>	Human Integrin αIIbβ3 transmembrane-cytoplasmic heterodimer	BL21λ(DE3)
3VOU	<i>Bacillus weihenstephanensis</i> (NaK) and <i>Sulfitobacter pontiacus</i> (NaV)	NaK channel chimera with grafted C-terminal region of a NaV channel	KRX strain (Promega)
2F2B	<i>Methanothermobacter marburgensis</i>	Aquaporin water channel (AqpM)	not found
4BUO	<i>Rattus norvegicus</i>	Neurotensin receptor produced by direct evolution (NTS1)	BL21 TUNER
2M3G (1s NMR)	<i>Anabaena</i> (Nostoc) sp. PCC7120	Sensory Rhodopsin	BL21-Codonplus-RIL
2JLN	<i>Microbacterium liquefaciens</i>	Benzyl-hydantoin transporter (Mhp1)	BLR (Novagen)
4C7R	<i>Corynebacterium glutamicum</i>	Glycine betaine transporter (BetP)	DH5α
3W9J	<i>Pseudomonas aeruginosa</i>	Bacterial multi-drug efflux transporter (MexB)	JM109

## Supplementary Table 2-Miroux

List of *E. coli* MP produced in *E. coli* hosts for structural studies

PDB via Mpstruc (S. White)	Type of membrane proteins	Name of bacterial host
<b>MONOTOPIIC</b>		
1B12	Signal Peptidase (SPase) in complex with a $\beta$ -lactam inhibitor	BL21 $\lambda$ (DE3)
2QCU	Glycerol-3-phosphate dehydrogenase (GlpD, native).	XL1blue/JM109
1J79, 1XGE	Dihydroorotate Dehydrogenase.	XL1blue
<b>BETA BARRELS</b>		
1MPF	OmpF Porin from colicin-resistant.	BZB1107
1GFM	OmpF Porin, D113G mutant.	Top10
1BT9, 300E	OmpF Porin, D74A mutant.	BL21 $\lambda$ (DE3)
1HXX	OmpF Porin, Y106F Mutant.	BL21 $\lambda$ (DE3)Domp8
3HW9, 2ZFG	OmpF Porin	MH225
2J1N	OmpC Osmoporin.	BZB1107
2XE1	OmpC Osmoporin clinical variant OmpC06.	HN705 Domp8
2F1C	OmpG *monomeric* porin.	C43 $\lambda$ (DE3)
2IWW	OmpG *monomeric* porin.	C41 $\lambda$ (DE3)
2JQY	OmpG by solution NMR spectroscopy.	BL21 $\lambda$ (DE3)pLysS
1MPM, 1MAL, 1AF6	LamB Maltoporin in complex with maltose.	K12 pop6510
1EK9, 1TQQ	Outer membrane protein TolC central to multidrug efflux and protein export.	BL21 $\lambda$ (DE3)
2VDE	TolC outer membrane protein (Y362F, R367E), partially open state.	C43 $\lambda$ (DE3) and C41 $\lambda$ (DE3)
3PIK, 4K7R, 4K7K, 4K34	CusC, the Outer Membrane Component of a Heavy Metal Efflux Pump.	C43 $\lambda$ (DE3)/BL21Star $\lambda$ (DE3)
1NQE/F/G/H	BtuB cobalamin transporter.	not found
1UJW	BtuB with bound colicin E3 R-domain.	TNE012 (K12 tsx-ompA- ompB- )
2GSK	BtuB:TonB.	BL21Star $\lambda$ (DE3)pLysS
2YSU	Complex of the Colicin E2 R-domain and Its BtuB Receptor.	TNE012 (K12 tsx-ompA- ompB- )
2HDI	Colicin I receptor Cir in complex with Colicin Ia binding domain.	BL21 $\lambda$ (DE3)
1QJP/1BXW, 1G90	OmpA.	BL21 $\lambda$ (DE3)
2JMM	OmpA with four shortened loops: NMR Structure DHPC micelles.	BL21 $\lambda$ (DE3)Gold
1I78	OmpT outer membrane protease.	BL21 $\lambda$ (DE3), DH5 $\alpha$ and B884
2F1V	OmpW outer membrane protein.	C43 $\lambda$ (DE3)
1ORM, 1Q9F	OmpX: , NMR (DHPC micelles).	BL21 $\lambda$ (DE3)pLysS
2M06	OmpX in optimized nanodiscs: NMR Structure In DPC micelles.	BL21 $\lambda$ (DE3)
1FW2	OmpLA (PldA) outer membrane phospholipase A monomer with Ca <sup>++</sup> .	BL21 $\lambda$ (DE3)
1ILZ	OmpLA (PldA) active-site mutant (N156A).	BL21 $\lambda$ (DE3) $\Delta$ pldA
2WJR	NanC Porin, model for KdgM porin family.	BL21 $\lambda$ (DE3)pLysS
1MM4, 1MM5, 1THQ, 3GP6	PagP outer membrane palmitoyl transferase.	BL21 $\lambda$ (DE3)
1T16, 3PGR	FadL long-chain fatty acid transporter.	C43 $\lambda$ (DE3)
3DWN	FadL long-chain fatty acid transporter A77E/S100R mutant.	Ls6164, C43 $\lambda$ (DE3)
1BY3	FhuA, Ferrichrome-iron receptor without ligand. With ligand: 1BY5.	B834(DE3)/BL21 $\lambda$ (DE3)
1QKC, 1FI1, 2FCP	FhuA in complex with albomycin.	AW740 [DompF zch:TnlO DotnpCftuA31]
1FCP	SeMet-FhuA.	DL41
2GRX	FhuA in complex with TonB.	AW740
1FEP, 1PNZ	FepA, Ferric enterobactin receptor.	BL21 $\lambda$ (DE3)
1KMO	FecA, siderophore transporter.	UT5600
2VQI	P pilus usher translocation domain.	B834 $\lambda$ (DE3)
3RFZ	P pilus FimD usher bound to FimC:FimH substrate.	B834 $\lambda$ (DE3)
4J30	P pilus FimD usher in complex with FimC:FimF:FimG:FimH.	Tuner $\lambda$ (DE3)
2YNK	Wzi outer-membrane lectin.	Top10/B834 $\lambda$ (DE3)
2QOM, 3SLJ, 3SZE	EspP autotransporter.	BL21 $\lambda$ (DE3)
3AEH	Hbp (hemoglobin protease) self-cleaving autotransporter with truncated passenger.	C43 $\lambda$ (DE3)
1WXR	Hbp (hemoglobin protease) full-length passenger domain.	DH5 $\alpha$
4-E1S, 1F02	Intimin outer membrane $\beta$ -domain.	BL21 $\lambda$ (DE3)
4C00	TamA Autotransporter, full length.	BL21 $\lambda$ (DE3)
<b>TRANSMEMBRANE PROTEINS: ALPHA-HELICAL</b>		
3FWM	Peptidoglycan Glycosyltransferase penicillin-binding protein 1b.	BL21 $\lambda$ (DE3)
2WCD	Cytolysin A (ClyA, aka HlyE).	Tuner $\lambda$ (DE3)
2J58	Wza translocon for capsular polysaccharides.	LE392
3JQO	Type IV outer membrane secretion complex.	B834 $\lambda$ (DE3)
20AU, 2VV5	MscS voltage-modulated mechanosensitive channel.	BL21 $\lambda$ (DE3)
1RC2, 209D, 3NK5	AqpZ aquaporin water channel.	C43 $\lambda$ (DE3)
2ABM	AqpZ aquaporin showing two conformations of Arg-189.	BL21 $\lambda$ (DE3)pLysS
1FX8, 1LDF	GlpF glycerol facilitator channel.	not found
3KCU	FocA, pentameric aquaporin-like formate transporter.	BL21 $\lambda$ (DE3)
1U7G	AmtB ammonia channel (mutant).	C41 $\lambda$ (DE3)
1XQF, 2NMR, 2NUU, 2NS1	AmtB ammonia channel.	C43 $\lambda$ (DE3)

3TXT, 3UBB, 2LEP, 4HDD	GlpG rhomboid-family intramembrane protease.	BL21λ(DE3)
2LZS	TatA, Twin arginine translocase.	BL21λ(DE3)pLysS
1OTS, 2EXW, 4FG6	H <sup>+</sup> /Cl <sup>-</sup> Exchange Transporter: Formerly ClC Chloride Channel.	BL21λ(DE3)
3NMO	Monomeric H <sup>+</sup> /Cl <sup>-</sup> Exchange Transporter.	stratagene
4ENE	H <sup>+</sup> /Cl <sup>-</sup> Exchange Transporter (truncated). Truncation: Residues 2-16 at N-terminal and 461-464 at C-terminal.	stratagene
1OY6	AcrB bacterial multi-drug efflux transporter.	DH5α
1T9T, 2GIF	AcrB bacterial multi-drug efflux transporter.	C43λ(DE3)
2HQC	AcrB bacterial multi-drug efflux transporter.	BL21λ(DE3)Gold
2DHH, 2RDD, 2W1B, 3A0B, 3W9H, 1IWG	AcrB bacterial multi-drug efflux transporter.	JM109
3K07, 3NE5	CusA metal-ion efflux pump.	BL21λ(DE3)
300C	CusB membrane fusion protein (apo protein).	DH5α
3B5D	EmrE bacterial multi-drug efflux transporter with bound TPP substrate.	BL21λ(DE3)
1PV7, 2CFQ	LacY Lactose Permease Transporter.	not found
2V8N	LacY Lactose Permease (wild-type) with TDG.	XL1blue
2Y5Y	LacY Lactose Permease with covalently bound MTS-gal.	C43λ(DE3)
4OAA	LacY Lactose Permease Transporter (G46W/G262W mutant) with bound lactose analog.	C41λ(DE3)
3O7Q	FucP Fucose Transporter in outward-facing conformation.	BL21λ(DE3)
1PW4	GlpT Glycerol-3-Phosphate Transporter.	LMG194
2GFP	EmrD Multidrug Transporter.	not found
4GBY	XylE proton:xylose symporter with bound D-xylose.	BL21λ(DE3)
4AJ3	XylE proton:xylose symporter in partially occluded inward-open state.	C41λ(DE3)
4IU9	NarU nitrate transporter.	not found
4JR9	NarK nitrate/nitrite exchanger. A member of the nitrate/nitrite porter family (NNP).	C41λ(DE3)
3WDO	YajR drug efflux transporter.	C43λ(DE3)
3QE7	Nucleobase/ascorbate transporter (NAT) UraA uracil/H <sup>+</sup> symporter.	BI21λ(DE3)
3HFX	CaiT carnitine transporter.	C41λ(DE3)
2WSX	CaiT carnitine transporter Fully-open inward-facing conformation.	BL21λ(DE3)
3LRB, 3L1L, 3OB6	AdiC Arginine:Agmatine Antiporter.	BL21λ(DE3)
4DJK	GadC glutamate-GABA antiporter.	not found
2QFI, 3H90	YiiP Zinc Transporter.	BL21λ(DE3)
1ZCD	NhaA Na <sup>+</sup> /H <sup>+</sup> antiporte.	rk20
3F1	NhaA Na <sup>+</sup> /H <sup>+</sup> antiporter Difference maps show structural changes with changes in pH.	BL21λ(DE3)
1L7V, 2QI9	BtuCD Vitamin B12 Transporter.	BL21λ(DE3)
4F3	BtuCD-F Vitamin B12 Transporter with bound AMP-PNP.	BL21λ(DE3)CodonPlusRIPL
2R6G, 4JBW, 3PV0	MalFGK2-MBP Maltose uptake transporter complex.	HN741
3RLF	MalFGK2-MBP Maltose uptake transporter complex with bound MgAMPPNP.	HN597 (DuncB-C i1ur:TnlO araD lac rpsLi/F' laca lacZ::Tn5, proA+ proB+)
4KHZ, 4KI0	MalFGK <sub>2</sub> -MBP Maltose uptake transporter complex; pre-translocation conformation bound to maltoheptaose.	AD126, Top10F', BL21λ(DE3)
3DHW	MetNI Methionine uptake transporter complex MetN-C2 domain.	BL21λ(DE3)Gold
3OAA	F1-ATPase in an autoinhibited conformation.	not found
1A91	Subunit C of the F1Fo ATP synthase.	MEG119
2KDC	Diacylglycerol kinase (DAGK). Domain-swapped homotrimer.	BL21λ(DE3) WH1061
3ZE4	Diacylglycerol kinase (DAGK).	not found
2QCU	Glycerol-3-phosphate dehydrogenase (GlpD, native).	XL1Blue
1Q16, 1SIW, 1Y4Z	NarGHI Nitrate Reductase A.	LCB2048
2LTQ	DsbB in POPE lipid bilayer: Cys41Ser mutant. Solid-state NMR used to refine the X-ray structure 2ZUQ.	C43λ(DE3)
4GD3, 3USE	O <sub>2</sub> -tolerant Hydrogenase-1 in complex with cytochrome b: Structure includes transmembrane helices.	FT004
3M9C, 3RKO	Electron Transport Chain Complexes I.	BL21λ(DE3)
1FUM	Electron Transport Chain Complexes: Complex II Fumarate Reductase Complex	not found
1LOV	Native Fumarate Reductase Complex: +HQNO.	DW35
1KQF	Formate dehydrogenase-N: HQNO complex.	GL101
1NEK, 2ACZ, 2WDQ, 2WP9	Succinate:quinone oxidoreductase (SQR, Complex II).	MC4100
1FFT	Electron Transport Chain Complexes: Complex IV (Cytochrome C Oxidase).	GO105 lacking terminal oxydases