

## Kinetically stable proteins

References: Park C, Zhou S, Gilmore J, Marqusee S, J. Mol. Biol, 2007, 368 (5), 1426-37  
Xia K, Manning M, Hesham H, Lin Q, Bystroff C, Colón W, PNAS, 2007, 104 (44), 17329-34

Protein name	sequence length (aa)	TMHs (TMHMM)?	Has PDB?	PDB ID	signal sequence?	multimerization?	DnaK or GroEL substrate?	Reference
Ecotin	142	No	Yes	1ECY	Yes	Dimer	No	Park et al.
Outer membrane protein OmpX	148	No	Yes	1QJ8	Yes	Trimer	No	Xia et al.
(3R)-hydroxymyristoyl ACP dehydratase	151	No	No		No	Hexamer	No	Xia et al.
Xanthine guanine phosphoribosyltransferase	152	No	Yes	1NUL	No	Tetramer	No	Xia et al.
Bacterioferritin	158	No	Yes	1BCF	No	24-mer	No	Park et al., Xia et al.
DNA protection during starvation protein	166	No	Yes	1DPS	No	12-mer	No	Park et al.
Inorganic phosphatase	175	No	Yes	1JFD	No	Hexamer	No	Park et al., Xia et al.
Alkyl hydroperoxide reductase, C22 subunit	187	No	Yes	1YEP	No	10-mer	No	Xia et al.
Phosphoheptose isomerase	192	No	No		No	Tetramer	No	Xia et al.
Superoxide dismutase (Fe)	192	No	Yes	1ISA	No	Dimer	No	Park et al., Xia et al.
Modulator of drug activity B (MdaB)	204	No	Yes	2AMJ	No	Dimer	No	Xia et al.
Superoxide dismutase (Mn)	205	No	Yes	1D5N	No	Dimer	No	Park et al.
30S ribosomal protein S4	206	No	Yes	1VS5	No	21-mer	No	Xia et al.
ycaC	208	No	Yes	1YAC	No	8-mer	Yes	Park et al.
Class B acid phosphatase	212	No	Yes	1N8N	Yes	Tetramer	No	Park et al.
Chloramphenicol acetyltransferase	219	No	Yes	1NOG	No	Trimer	No	Xia et al.
Arginine-binding protein 1	224	No	No		Yes	Monomer	No	Park et al.
Arginine-binding protein 2	224	No	No		Yes	Monomer	No	Park et al.
Ribulose phosphate 3-epimerase	225	No	No		No	N/A	No	Park et al.
Glutamine-binding periplasmic protein	226	No	Yes	1WDN	Yes	Monomer	No	Park et al.
LAO-binding periplasmic protein	238	No	No		Yes	Monomer	No	Park et al.
Purine nucleoside phosphorylase	238	No	Yes	1A69	No	Hexamer	No	Park et al., Xia et al.
Pyridoxine 5 -phosphate synthase	242	No	Yes	1HO1	No	8-mer	No	Xia et al.
Hypothetical UPF0135 protein ybgl	247	No	Yes	1NMO	No	Hexamer	No	Park et al.
Uridine phosphorylase	252	No	Yes	1K3F	No	Hexamer	No	Park et al., Xia et al.
Triosephosphate isomerase Tim	255	No	Yes	1TRE	No	Dimer	No	Park et al., Xia et al.
Deoxyriboaldolase	259	No	Yes	1JCL	No	Dimer	No	Park et al.
Enoyl reductase	261	No	Yes	1DFG	No	Tetramer	No	Xia et al.
Ribose binding periplasmic protein	271	No	Yes	2DRI	Yes	Monomer	Yes	Park et al.
Protein L12	272	No	Yes	2AW4	No	31-mer	No	Xia et al.
Hypothetical oxidoreductase, yghA	294	No	No		No	N/A	No	Park et al.
Cytidine deaminase	294	No	Yes	1CTT	No	Dimer	No	Park et al.
Agmatinase	306	No	No		No		No	Park et al.
Transaldolase	317	No	Yes	1UCW	No	Monomer	No	Xia et al.
Reduced thioredoxin reductase	320	No	Yes	1CL0	No	Dimer	No	Xia et al.
RNA polymerase alpha-subunit N-terminal domain	329	No	Yes	1BDF	No	Dimer	No	Xia et al.
Glyceraldehyde-3-phosphate dehydrogenase A	330	No	Yes	1GAD	No	Tetramer	No	Park et al., Xia et al.
Glycerophosphoryl diester phosphodiesterase	336	No	Yes	1T8Q	Yes	Dimer	No	Xia et al.
Ompf porin	340	No	Yes	1HXX	Yes	Trimer	Yes	Xia et al.
Putrescine-binding protein	344	No	Yes	1A99	Yes	Monomer	No	Park et al.
Galactitol-1-phosphate dehydrogenase	346	No	No		No	N/A	No	Xia et al.
yahK (alcohol dehydrogenase-like)	349	No	Yes	1UUF	No	Dimer	No	Park et al.
Fructose-bisphosphate aldolase	350	No	No		No	N/A	Yes	Xia et al.
Putative receptor	353	No	No		Yes	N/A	No	Xia et al.
Putative periplasmic binding protein, ydcS	359	No	No		Yes	N/A	No	Park et al.
Maltose binding protein	370	No	Yes	1ANF	Yes	Monomer	No	Park et al.
Periplasmic glycerophosphoryl diester phosphodiesterase	371	Yes	Yes	1YDY	Yes	Dimer	No	Xia et al.
Hypothetical protein UTI89 C2371	374	No	No		No	N/A	No	Xia et al.
S-adenosylmethionine synthetase	383	No	Yes	1XRB	No	Dimer	Yes	Xia et al.
Phosphoglycerate kinase	386	No	No		No	Monomer	No	Park et al.
Isoaspartyl dipeptidase	390	No	Yes	1YBQ	No	8-mer	No	Xia et al.
Glucose-1-phosphatase	391	No	Yes	1NT4	Yes	Dimer	No	Park et al.
Elongation factor, Tu	393	No	Yes	1D8T	No	Monomer	No	Xia et al.

Aspartate aminotransferase	396	No	Yes	1AAW	No	Dimer	No	Park et al.
2-Amino-3-ketobutyrate CoA ligase	401	No	Yes	1FC4	No	Dimer	No	Xia et al.
beta-Ketoacyl-acyl synthase li	412	No	Yes	2GFW	No	Dimer	Yes	Xia et al.
Transcription termination factor Rho	419	No	Yes	1PVO	No	12-mer	No	Xia et al.
Maltoporin Lamb	421	No	Yes	1MAL	Yes	Trimer	No	Xia et al.
Fructose-bisphosphate aldolase class II	421	No	Yes	1ZEN	No	Dimer	No	Xia et al.
Peptidase B	427	No	No		No	Hexamer	No	Park et al.
Outer membrane protein TolC	428	No	Yes	1EK9	Yes	Trimer	Yes	Xia et al.
Proline dipeptidase	443	No	No		No	N/A	Yes	Xia et al.
Glutathione reductase	450	No	Yes	1GET	No	Dimer	No	Park et al.
Glutamine synthetase	469	No	Yes	2GLS	No	12-mer	No	Xia et al.
Pyruvate kinase I	470	No	Yes	1PKY	No	Tetramer	No	Park et al.
Dihydrolipoyl dehydrogenase	473	No	No		No	Dimer	No	Park et al., Xia et al.
Predicted GTPase	490	No	No		No	N/A	No	Xia et al.
Aspartate ammonia-lyase (aspartase)	493	No	Yes	1JSW	No	Tetramer	No	Xia et al.
Leucyl aminopeptidase	503	No	Yes	1GYT	No	Hexamer	No	Xia et al.
Periplasmic oligopeptide-binding protein	517	Yes	No		Yes	Monomer	No	Park et al.
UDP-sugar hydrolase (5'-nucleotidase)	525	No	Yes	1HPI	Yes	Monomer	No	Park et al.
Trehalase	535	No	No		Yes	Monomer	No	Park et al.
Glycerol kinase	537	No	Yes	1GLA	No	8-mer	No	Xia et al.
Phosphoenolpyruvate carboxykinase	540	No	Yes	1AYL	No	Monomer	No	Park et al.
GroEL	548	No	Yes	2EU1	No	7-mer	No	Xia et al.
Unnamed protein	549	No	No		No	Dimer	No	Xia et al.
L-fucose isomerase	591	No	Yes	1FUI	No	Trimer	No	Xia et al.
Elongation factor EF-2	704	No	No		No	Monomer	No	Xia et al.
Catalase; hydroperoxidase HPI(I)	726	No	No		No	Dimer	Yes	Xia et al.
Unnamed protein	733	No	Yes	1ZO1	No	Dimer	No	Xia et al.
Catalase HPII	753	No	Yes	1GGE	No	Tetramer	No	Park et al.

Summary	<200 aa: 10	at least 1	PDB: 58	sig. seq.: 21	Monomers: 15	Chaperone substrates: 9
	>200 aa: 71	TM helix: 2	no PDB: 23		no sig. seq.: 60	
					Trimers: 6	
					Tetramers: 8	
					Pentamers: 0	
					Hexamers: 7	
					>Hexamers: 12	
					unspecific oligomers: 0	