

Results for Homework 2: Protein Similarity Search

Species	Score	Accession	Protein Name	Protein Description
Mesorhizobium loti	1583	NP_108345.1*	groEL gene product	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions
Brucella Ovis ATCC 25840	1560	YP_001257246.1	chaperonin GroEL	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions
Neisseria lactamica	1518	YP_004049486.1	GroEL protein / 60 kDa chaperonin	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions
Hahella chejuensis KCTC 2396	1494	YP_435739.1	chaperonin GroEL	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions
Alteromonas Macleodii str. 'Deep ecotype'	1489	YP_004429045.1	chaperonin GroEL	Involved in folding of proteins or the assembly of oligomeric protein complexes
Legionella pneumophila str. Lens	1485	YP_126086.1	molecular chaperone GroEL	Promotes refolding of misfolded polypeptides especially under stressful conditions
Legionella pneumophila str. Paris	1485	YP_123081.1	chaperonin GroEL	Chaperonin GroEL is an essential molecular chaperone that assists protein folding in the cell. With the aid of cochaperonin GroES and ATP, double ring-shaped GroEL encapsulates non-native substrate proteins inside the cavity of the GroEL-ES complex.
Yersinia pseudotuberculosis YPIII	1482	YP_001722541.1	chaperonin GroEL	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions
Escherichia coli BL21 Gold DE3 pLysS AG	1459	YP_003038060.1	chaperonin GroEL	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions. Essential for the growth of the bacteria and the assembly of several bacteriophages. Also plays a role in coupling between replication of the F plasmid and cell division of the cell.
Shewanella pealeana ATCC 700345	1458	YP_001503535.1	chaperonin GroEL	Required for the proper folding of many proteins
Allivibrio salmonicida LF11238	1445	YP_002261578.1	chaperonin GroEL	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions. Source: UniProt database.
Paenibacillus polymyxa E681	1437	YP_003869574.1	molecular chaperone GroEL	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions

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Sulfurimonas autotrophica	1435	YP_003891718.1	chaperonin GroEL	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions.
Candidatus Liberibacter solanacearum CLso ZC1	1379	YP_004063216.1	molecular chaperone GroEL	Involved in productive protein folding.
Cyanothece_PCC_7425_uid59435	1371	YP_002483053.1	chaperonin GroEL	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions. Oligomer of 14 subunits composed of two stacked rings of 7 subunits.
Cyanothece sp. ATCC 51142	1370	YP_001804744.1	chaperonin 2	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions
Clostridium phytofermentans ISDg	1338	YP_001560382.1	molecular chaperone GroEL	The function of this protein is to assist in the folding, unfolding, assembling, and disassembling of molecules inside the cell, mostly other proteins. Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions.
Thermanaerovibrio_acidaminovorans	1337	YP_003317744.1	chaperonin GroEL	It is a chaperone protein, commonly found in bacteria, that assists with the proper folding of proteins.
Thermomicrobium roseum	1329	YP_002522505.1	chaperonin GroEL	Prevents misfolding and promotes the refolding and proper assembly of unfolded polypeptides generated under stress conditions
Haloquadratum walsbyi DSM 16790	486	YP_657160.1	thermosome, beta subunit	This protein is inferred by homology as a subunit of the thermosome, which contains up to five subunits, ranging from alpha, beta, to epsilon. This subunit is coded by PL131(?) as a stress protein. The thermosome serves as a chaperoning in protein complex.
Nitrosopumilus maritimus SCM1	436	YP_001583126.1	thermosome	Belongs to the TCP-1 chaperonin family - which stabilise or protect disassembled polypeptides under heat-shock conditions.
Average score:	1339.65			
The last two rows have unusually low scores, but I have verified them. -kw				
* In Mesorhizobium loti, there were two equally good matches. The other was NP_085869.1, a chaperonin GroEL.				