

Table S2: Tabulation of all functionally uncharacterized P-type ATPases (families 10-22) encoded within the fully sequenced genomes of 26 eukaryotes*

Abbreviation	Organism	Length	gi#	TDB ID#	Org. Type
3.A.3.10					
Tps14	<i>Thalassiosira pseudonana</i>	1026		ORF09186	Protozoan
Ecu01	<i>Encephalitozoon cuniculi</i>	973	19073954		Microsporidian
Cme02	<i>Cyanidioschyzon merolae</i>	1171		CMM261C	Protozoan
Cel04	<i>Caenorhabditis elegans</i>	1157	3874214		Metazoa
Hsa08	<i>Homo sapiens</i>	1086	9966897		Metazoa
Aga08	<i>Anopheles gambiae</i> str. .	1144	58389933		Metazoa
Dme15	<i>Drosophila melanogaster</i>	1225	19921132		Metazoa
Ddi13	<i>Dictyostelium discoideum</i>	1298	66800725		Mycetozoa
Osa22	<i>Oryza sativa</i> (japonica)	1298	115463791		Viridiplantae
Ath41	<i>Arabidopsis thaliana</i>	1179	15237798		Viridiplantae
Spo15	<i>Schizosaccharomyces pombe</i>	1212	25462000		Fungi
Cne10	<i>Cryptococcus neoformans</i>	1252	134115741		Fungi
Sce05	<i>Saccharomyces cerevisiae</i>	1215	6320804		Fungi
Ncr10	<i>Neurospora crassa</i> OR74A	1318	32407472		Fungi
Cpo17	<i>Coccidioides posadasii</i> C735	1298		67.m09488	Fungi
Ani07	<i>Aspergillus nidulans</i> FG.	1627	67525377		Fungi
Afu09	<i>Aspergillus fumigatus</i>	1303	74674627		Fungi
Aor03	<i>Aspergillus oryzae</i>	1298	83770759		Fungi
Lma12	<i>Leishmania major</i>	1244	68124309		Euglenozoa
Tbr01	<i>Trypanosoma brucei</i> TREU.	1261	72392203		Euglenozoa
Tcr08	<i>Trypanosoma cruzi</i> strain	1246	71652272		Euglenozoa
Ehi13	<i>Entamoeba histolytica</i> H.	1118	67476079		Entamoebidae
Tth135	<i>Tetrahymena thermophila</i>	1165	118384929		Alveolata
Tpa11	<i>Theileria parva</i> strain	1522	71027503		Alveolata
Pfa09	<i>Plasmodium falciparum</i> 3.	1918	23498943		Alveolata
Cpa14	<i>Cryptosporidium parvum</i>	1088	126649265		Alveolata
3.A.3.11					
Ecu6	<i>Encephalitozoon cuniculi</i>	1146	19074572		Microsporidian

3.A.3.12

Cme7	<i>Cyanidioschyzon merolae</i>	1998		CMR432C	Protozoan
------	--------------------------------	------	--	---------	-----------

3.A.3.13

Hsa12	<i>Homo sapiens</i>	1180	13435129		Metazoa
Aga5	<i>Anopheles gambiae str.</i>	1228	118779567		Metazoa
Dme9	<i>Drosophila melanogaster</i>	1314	45551167		Metazoa
Cell5	<i>Caenorhabditis elegans</i>	1187	3880560		Metazoa
Cell0	<i>Caenorhabditis elegans</i>	1152	4883516		Metazoa

3.A.3.14

Cne01	<i>Cryptococcus neoformans</i>	1592	58266716		Fungi
Scel2	<i>Saccharomyces cerevisiae</i>	1472	6324865		Fungi
Sp008	<i>Schizosaccharomyces pombe</i>	1315	6707668		Fungi
Ncr20	<i>Neurospora crassa OR74A</i>	1347	28950349		Fungi
Afu21	<i>Aspergillus fumigatus</i>	1263	74672880		Fungi
Aor05	<i>Aspergillus oryzae</i>	1351	83764977		Fungi

3.A.3.15

Ddi21	<i>Dictyostelium discoideum</i>	1158	66815633		Mycetozoa
Ddi06	<i>Dictyostelium discoideum</i>	1533	66811545		Mycetozoa
Ddi29	<i>Dictyostelium discoideum</i>	1186	66809301		Mycetozoa

3.A.3.16

Tth25	<i>Tetrahymena thermophila</i>	1328	118371644		Alveolata
Tth29	<i>Tetrahymena thermophila</i>	1376	118371666		Alveolata
Tth139	<i>Tetrahymena thermophila</i>	1338	118371648		Alveolata
Tth137	<i>Tetrahymena thermophila</i>	1982	118371656		Alveolata
Tth143	<i>Tetrahymena thermophila</i>	1380	118371662		Alveolata
Tth124	<i>Tetrahymena thermophila</i>	1088	118374026		Alveolata
Tth144	<i>Tetrahymena thermophila</i>	1472	118374024		Alveolata
Tth117	<i>Tetrahymena thermophila</i>	1815	118399066		Alveolata
Tth114	<i>Tetrahymena thermophila</i>	1183	118378058		Alveolata
Tth111	<i>Tetrahymena thermophila</i>	1142	118383954		Alveolata
Tth112	<i>Tetrahymena thermophila</i>	1169	118400321		Alveolata

3.A.3.17					
Spo06	<i>Schizosaccharomyces pom.</i>	1096	6707665		Fungi
3.A.3.18					
Cpa09	<i>Cryptosporidium parvum</i>	1491	66359870		Alveolata
3.A.3.19					
Tth30	<i>Tetrahymena thermophila</i>	1807	118355868		Alveolata
3.A.3.20					
Tth123	<i>Tetrahymena thermophila</i>	1072	118352136		Alveolata
Tth113	<i>Tetrahymena thermophila</i>	1135	118352142		Alveolata
Tth116	<i>Tetrahymena thermophila</i>	1093	146162362		Alveolata
Tth118	<i>Tetrahymena thermophila</i>	1163	118351754		Alveolata
Tth119	<i>Tetrahymena thermophila</i>	1143	118359495		Alveolata
Tth126	<i>Tetrahymena thermophila</i>	1080	118347148		Alveolata
Tth128	<i>Tetrahymena thermophila</i>	1150	118347158		Alveolata
Tth125	<i>Tetrahymena thermophila</i>	1115	146180584		Alveolata
Tth146	<i>Tetrahymena thermophila</i>	1120	118376028		Alveolata
Tth120	<i>Tetrahymena thermophila</i>	1140	146180582		Alveolata
Tth138	<i>Tetrahymena thermophila</i>	1845	118373678		Alveolata
3.A.3.21					
Tps01	<i>Thalassiosira pseudonana</i>	1372		ORF00905	Protozoan
3.A.3.22					
Cpa13	<i>Cryptosporidium parvum</i>	1434	66358584		Alveolata
Cpa04	<i>Cryptosporidium parvum</i>	1431	66359560		Alveolata
Cpa08	<i>Cryptosporidium parvum</i>	1291	66362540		Alveolata
Cpa01	<i>Cryptosporidium parvum</i>	1488	7021535		Alveolata
Tpa02	<i>Theileria parva strain 1</i>	1212	71033603		Alveolata
Pfa04	<i>Plasmodium falciparum 3</i>	2393	23504525		Alveolata

*"gi#" NCBI accession number; "TDB ID#" ID number for proteins on www.membranetransport.org