

**Additional file 2. Prediction of subcellular localization of *in vitro*-approved prokaryotic endosymbionts and protozoan  $\beta$ -CA protein sequences.**

Species name	Taxonomic domain	Entry ID	SP*	mTP*	O*	Result*
<i>Afipia felis</i>	Bacteria	K8NQ88	-	+	-	M
<i>Bradyrhizobium japonicum</i>	Bacteria	G7D846	-	-	+	O
<i>Cesiribacter andamanensis</i>	Bacteria	M7MX87	-	-	+	O
<i>Colwellia psychrerythraea</i>	Bacteria	Q47YG3	-	-	+	O
<i>Corallococcus coralloides</i>	Bacteria	H8MJ17	-	+	-	M
<i>Leptospira kirschneri</i>	Bacteria	M6X652	-	+	-	M
<i>Magnetospirillum magneticum</i>	Bacteria	Q2VZD0	-	-	+	O
<i>Selenomonas ruminantium</i>	Bacteria	I0GLW8	-	-	+	O
<i>Veillonella</i> spp.	Bacteria	F9N508	-	-	+	O
<i>Vesicomysocius okutanii</i>	Bacteria	A5CVM8	-	-	+	O
<i>Acanthamoeba castellanii</i>	Eukaryota	L8GR38	-	+	-	M
<i>Acanthamoeba castellanii</i>	Eukaryota	L8H861	+	-	-	S
<i>Acanthamoeba castellanii</i>	Eukaryota	L8GLS7	-	-	+	O
<i>Angomonas deanei</i>	Eukaryota	S9WXX9	-	-	+	O
<i>Dictyostelium discoideum</i>	Eukaryota	Q555A3	-	-	+	O
<i>Dictyostelium discoideum</i>	Eukaryota	Q55BU2	-	-	+	O
<i>Dictyostelium discoideum</i>	Eukaryota	Q94473	-	-	+	O
<i>Dictyostelium purpureum</i>	Eukaryota	F0Z7L1	-	-	+	O

<i>Dictyostelium fasciculatum</i>	Eukaryota	F4PL43	-	-	+	O
<i>Entamoeba dispar</i>	Eukaryota	B0E7M0	-	-	+	O
<i>Entamoeba histolytica</i>	Eukaryota	C4LXK3	-	-	+	O
<i>Entamoeba nuttalli</i>	Eukaryota	K2GQM0	-	-	+	O
<i>Ichthyophthirius multifiliis</i>	Eukaryota	G0QYZ1	-	-	+	O
<i>Ichthyophthirius multifiliis</i>	Eukaryota	G0QPN9	-	-	+	O
<i>Leishmania braziliensis</i>	Eukaryota	A4H4M7	-	+	-	M
<i>Leishmania donovani</i>	Eukaryota	E9B8S3	-	-	+	O
<i>Leishmania guyanensis</i>	Eukaryota	S0CTX5	-	+	-	M
<i>Leishmania infantum</i>	Eukaryota	A4HSV2	-	-	+	O
<i>Leishmania major</i>	Eukaryota	Q4QJ17	-	-	+	O
<i>Leishmania mexicana</i>	Eukaryota	E9AKU0	-	-	+	O
<i>Naegleria gruberi</i>	Eukaryota	D2W492	-	-	+	O
<i>Naegleria gruberi</i>	Eukaryota	D2W1R2	-	-	+	O
<i>Naegleria gruberi</i>	Eukaryota	D2W4H2	-	-	+	O
<i>Paramecium tetraurelia</i>	Eukaryota	A0BD61	-	-	+	O
<i>Paramecium tetraurelia</i>	Eukaryota	A0E8J0	-	-	+	O
<i>Paramecium tetraurelia</i>	Eukaryota	A0CEX6	-	-	+	O
<i>Paramecium tetraurelia</i>	Eukaryota	A0BDB1	-	-	+	O
<i>Paramecium tetraurelia</i>	Eukaryota	A0C922	-	-	+	O
<i>Strigomonas culicis</i>	Eukaryota	S9TM82	-	+	-	M

<i>Tetrahymena thermophila</i>	Eukaryota	Q22U21	-	-	+	O
<i>Tetrahymena thermophila</i>	Eukaryota	Q22U16	-	-	+	O
<i>Tetrahymena thermophila</i>	Eukaryota	I7MDL7	-	+	-	M
<i>Tetrahymena thermophila</i>	Eukaryota	I7LWM1	-	-	+	O
<i>Tetrahymena thermophila</i>	Eukaryota	I7MOM0	-	-	+	O
<i>Tetrahymena thermophila</i>	Eukaryota	I7MD92	-	-	+	O
<i>Tetrahymena thermophila</i>	Eukaryota	I7M748	-	-	+	O
<i>Tetrahymena thermophila</i>	Eukaryota	Q23AV1	-	-	+	O
<i>Trichomonas vaginalis</i>	Eukaryota	A2ENQ8	-	-	+	O
<i>Trichomonas vaginalis</i>	Eukaryota	A2DLG4	-	-	+	O
<i>Ascaris suum</i>	Eukaryota	F1LE18	-	-	+	O
<i>Schistosoma mansoni</i>	Eukaryota	G4V6B2	-	-	+	O
<i>Caenorhabditis elegans</i>	Eukaryota	Q22460	-	-	+	O
<i>Anopheles gambiae</i>	Eukaryota	Q5TU56	-	+	-	M
<i>Aedes aegypti</i>	Eukaryota	Q17N64	-	+	-	M
<i>Drosophila melanogaster</i>	Eukaryota	Q9VHJ5	-	+	-	M

**\*Abbreviations:**

**M:** Mitochondrial, **SP:** Signal peptide (secretory pathway), **mTP:** (mitochondrial targeting peptide), and **O:** other cellular localization.