

Supplementary materials 2. Probing the energetic metabolism of resting cysts under different conditions from molecular and physiological perspectives in the harmful algal blooms-forming dinoflagellate *Scrippsiella trochoidea*

1. Characteristics analyses of *St β -F₁-ATPase*

Amino acid sequences of alveolata, alga, higher plants, animal and bacteria species used in our study were down-loaded from the GenBank database, including *Besnoitia besnoiti* (XP_029221878.1), *Hammondia hammondi* (KEP66196.1), *Perkinsus marinus* (XP_002782393.1), *Perkinsus olseni* (KAF4689375.1), *Neospora caninum* Liverpool (XP_003882811.1), *Cystoisospora suis* (PHJ21285.1), *Toxoplasma gondii* MAS (KFH15380.1), *Cyclospora cayetanensis* (XP_022586579.1), *Karlodinium veneficum* (ADV91188.1), *Pfiesteria piscicida* (ACU45001.1), *Saccharina japonica* (YP_006639069.1), *Ulva linza* (YP_009256600.1), *Galdieria sulphuraria* (XP_005704290.1), *Fistulifera solaris* (GAX15371.1), *Phaeodactylum tricornutum* (XP_002177917.1), *Thalassiosira pseudonana* (XP_002296041.1), *Ectocarpus siliculosus* (CBJ32298.1), *Chlamydomonas reinhardtii* (NP_958414.1), *Ostreococcus tauri* (AGW31159.1), *Cyanidioschyzon merolae* (QFV17223.1), *Emiliana huxleyi* (YP_277339.1), *Varroa destructor* (XP_022667920.1), *Cryptotermes secundus* (XP_023708910.1), *Schistocerca gregaria* (AEV89780.1), *Tropilaelaps mercedesae* (OQR69095.1), *Zootermopsis nevadensis* (XP_021935193.1), *Locusta migratoria* (AQE30075.1), *Homo sapiens* (AAA51808.1), *Mus musculus* (NP_058054.2), *Rattus norvegicus* (NP_599191.1), *Alphaproteobacteria bacterium* (MSO75027.1), *Rhodospirillaceae bacterium* (WP_119462901.1), *Pelagibacterales bacterium* (RZO47986.1), *Candidatus Pelagibacter* (MAH52429.1), *Hypericibacter adhaerens* (WP_151120001.1), *Azospirillum halopraeferens* (WP_029011043.1), *Abelia macrotera* (A0A5P8G1W4), *Ginkgo biloba* (Q4FGI7-1), *Arabidopsis thaliana* (NP_680155), *Agave americana* (A0A1I9QLK6-1), *Mimosa pudica* (A0A4V1GPW3-1), *Aspidistra elatior* (Q95AF8-1), *Euryale ferox* (A0A2U3TDD9-1), *Eutrema japonicum* (A0A5H2YRI0-1), *Parthenium argentatum* (D1M7N2-1) and *Mesembryanthemum crystallinum* (A0A0G2R7U6-1). Sequences analysis was performed by DNAMAN (Figure S2-1). Identical and similar amino acid residues are black and gray shaded, respectively. Deletions are indicated by dots. In order to make the data clearer, we transfer the data to a table for presentation (Table S2-1).

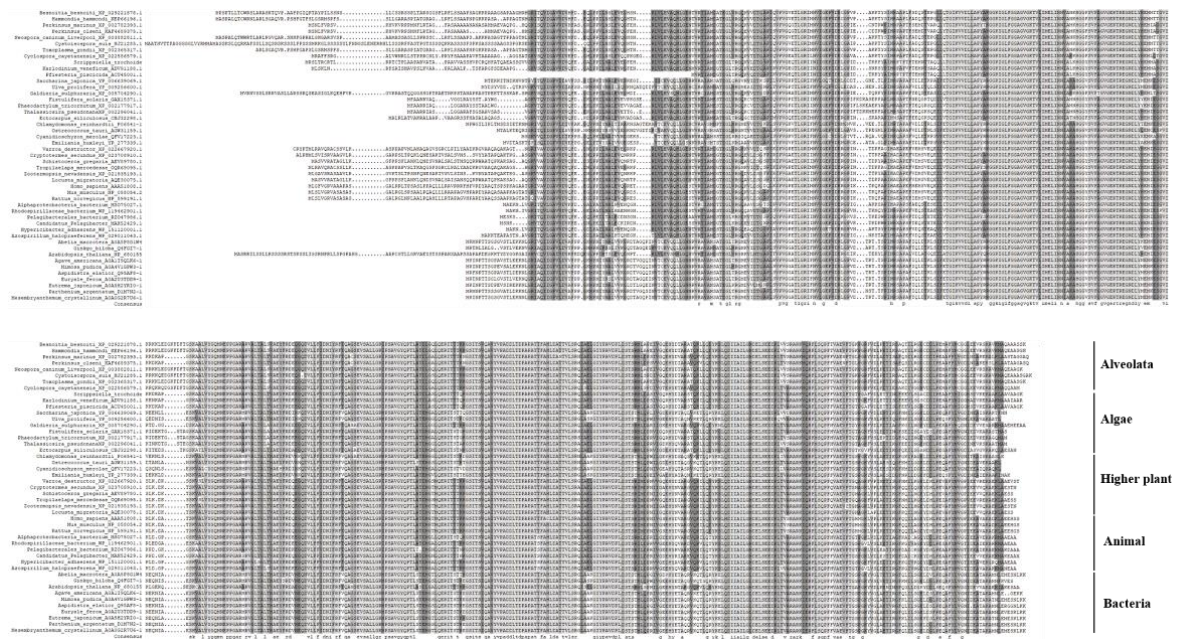


Figure S2-1. Alignment and comparison of *Stβ-F1-ATPase* deduced amino acid sequences from *Scrippsiella trochoidea* with different species. Sequence analysis was performed by DNAMAN and numbered on the left. Identical and similar amino acid residues are black and gray shaded, respectively. Deletions are indicated by dots. Details on species names and GenBank accession numbers are shown above.

Table S2-1. Amino acid sequences of alveolata, alga, higher plants, animal and bacteria species

Species	Accession number
<i>Besnoitia besnoiti</i>	XP_029221878.1
<i>Hammondia hammondi</i>	KEP66196.1
<i>Perkinsus marinus</i>	XP_002782393.1
<i>Perkinsus olseni</i>	KAF4689375.1
<i>Neospora caninum</i> Liverpool	XP_003882811.1
<i>Cystoisospora suis</i>	HJ21285.1
<i>Toxoplasma gondii</i>	XP_002365317.1
<i>Cyclospora cayetanensis</i>	XP_022586579.1
<i>Scrippsiella trochoide</i>	MZ343333
<i>Karlodinium veneficum</i>	ADV91188.1
<i>Pfiesteria piscicida</i>	ACU45001.1
<i>Saccharina japonica</i>	YP_006639069.1
<i>Ulva prolifera</i>	YP_009256600.1
<i>Galdieria sulphuraria</i>	XP_005704290.1
<i>Fistulifera solaris</i>	GAX15371.1
<i>Phaeodactylum tricornutum</i>	XP_002177917.1
<i>Thalassiosira pseudonana</i>	XP_002296041.1
<i>Ectocarpus siliculosus</i>	CBJ32298.1

<i>Chlamydomonas reinhardtii</i>	P06541-1
<i>Ostreococcus tauri</i>	AGW31159.1
<i>Cyanidioschyzon merolae</i>	QFV17223.1
<i>Emiliana huxleyi</i>	YP_277339.1
<i>Varroa destructor</i>	XP_022667920.1
<i>Cryptotermes secundus</i>	XP_023708910.1
<i>Schistocerca gregaria</i>	AEV89780.1
<i>Tropilaelaps mercedesae</i>	OQR69095.1
<i>Zootermopsis nevadensis</i>	XP_021935193.1
<i>Locusta migratoria</i>	AQE30075.1
<i>Homo sapiens</i>	AAA51808.1
<i>Mus musculus</i>	NP_058054.2
<i>Rattus norvegicus</i>	NP_599191.1
<i>Alphaproteobacteria bacterium</i>	MSO75027.1
<i>Rhodospirillaceae bacterium</i>	WP_119462901.1
<i>Pelagibacterales bacterium</i>	RZO47986.1
<i>Candidatus Pelagibacter</i>	MAH52429.1
<i>Hypericibacter adhaerens</i>	WP_151120001.1
<i>Azospirillum halopraeferens</i>	WP_029011043.1
<i>Abelia macrotera</i>	A0A5P8G1W4
<i>Ginkgo biloba</i>	Q4FGI7-1
<i>Arabidopsis thaliana</i>	NP_680155
<i>Agave americana</i>	A0A1I9QLK6-1
<i>Mimosa pudica</i>	A0A4V1GPW3-1
<i>Aspidistra elatior</i>	Q95AF8-1
<i>Euryale ferox</i>	A0A2U3TDD9-1
<i>Eutrema japonicum</i>	A0A5H2YRI0-1
<i>Parthenium argentatum</i>	D1M7N2-1
<i>Mesembryanthemum crystallinum</i>	A0A0G2R7U6-1