Me agenomic Anal i of Gene Encoding N ien C cling Pa h a in he Mic obio a of Deep-Sea and Shallo -Wa e Sponge

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Ab ac

Theonella swinhoei *Neamphius huxleyi*

T. swinhoei *N. huxleyi*

Elec onic pplemen a ma e ial

✉

Ke o d

In od c ion

Chlorella

Cymbastela concentrica

Rhizobium

Theonella swinhoei

Neamphius huxleyi

Ma e ial and Me hod

Sponge Sampling

T. swinhoei

N. huxleyi

DNA E ac ion and Deep Seq encing

T. swinhoei

N. huxleyi

T. swinhoei

N. huxleyi

Ph logen of Sponge P oka o ic and E ka o ic S mbion

Anal e of F nc ional Gene and Me abolic Pa h a

Gene En ichmen Anal i

Re l

Diffe en Comm ni S c e of he Shallo -Wa e Sponge *T. swinhoei* and Deep-Sea Sponge *N. huxleyi* Holobion

O e all Me aboli m and N ien Elemen Me aboli m of he Shallo -Wa e Sponge *T. swinhoei* and Deep-Sea Sponge *N. huxleyi* Holobion

N. huxleyi

T. swinhoei

x *y*

T.S. *N.H.*

amo

glt

hao

napA *nar* *nif*

nirK

nirS

nor *nosZ*

nrfA *nxr*

amo *nirS* *glt* *nxr* *nif*

narY

narG *nosZ*

ntrY

torC

nfnB *utp*

narK

sdaC

hpaF *nfnB*

naarK *sdaC*

Table 1

Ts T. swinhoei Nh N. huxleyi Amo [illegible] *GDH2* [illegible] *Glt* [illegible] *Hao* [illegible] *NapA* [illegible] *Nar* [illegible] *nif* [illegible] *NirK* [illegible] *NirS* [illegible] *Nor* [illegible] *NosZ* [illegible] *Nrf* [illegible] *Nxr* [illegible]

P [illegible]

[illegible] *otsB* [illegible] *phoA* [illegible] *pitA* [illegible] *fruA* [illegible] *pta* [illegible] *pstS* [illegible] *N. huxleyi* [illegible] *T. swinhoei* [illegible] *T. swinhoei* [illegible] *N. huxleyi* [illegible] *T. swinhoei* [illegible] *N. huxleyi* [illegible] *cysP* [illegible]

[illegible] *N. huxleyi* [illegible]

The Potential of Different Microbes in the Nutritional Metabolism of Sponge Holobionts

[illegible] *T. swinhoei* [illegible] *T. swinhoei* [illegible]

Table 2 [illegible]

[illegible]	[illegible]	[illegible]	*P* [illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]
[illegible] → [illegible]	[illegible]	[illegible]	[illegible]

[illegible] *N. huxleyi* [illegible] *N. huxleyi* [illegible] *T. swinhoei* [illegible] *T. swinhoei* [illegible]

N. huxleyi

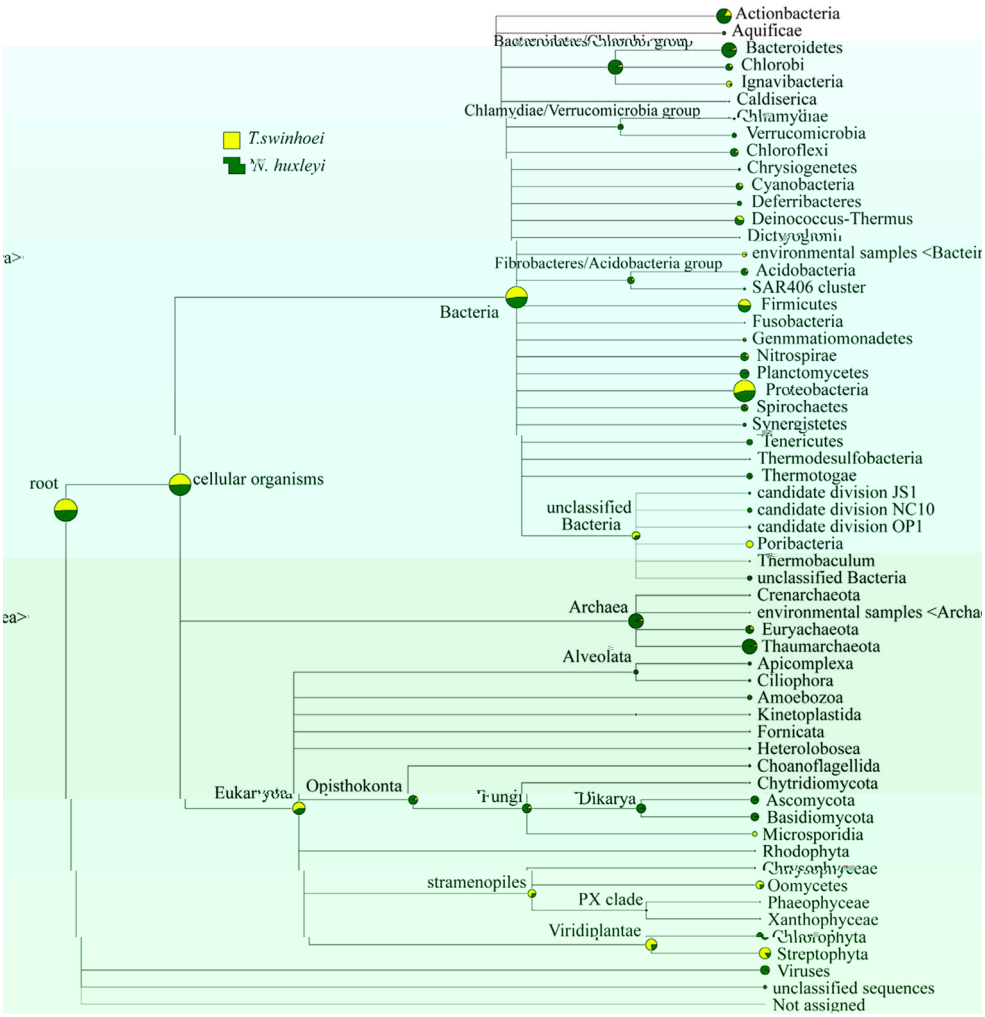
T. swinhoei

Discussion

Fig. 2

T. swinhoei
yellow *N. huxleyi*
green

circles



Nitrosopumilus *Nitrosospira* *Nitrococcus*
Nitrospira *Nitrospina* *T. swinhoei*

Desulfovibrio

Fig. 3

T. swinhoei
yellow
N. huxleyi
green
circles

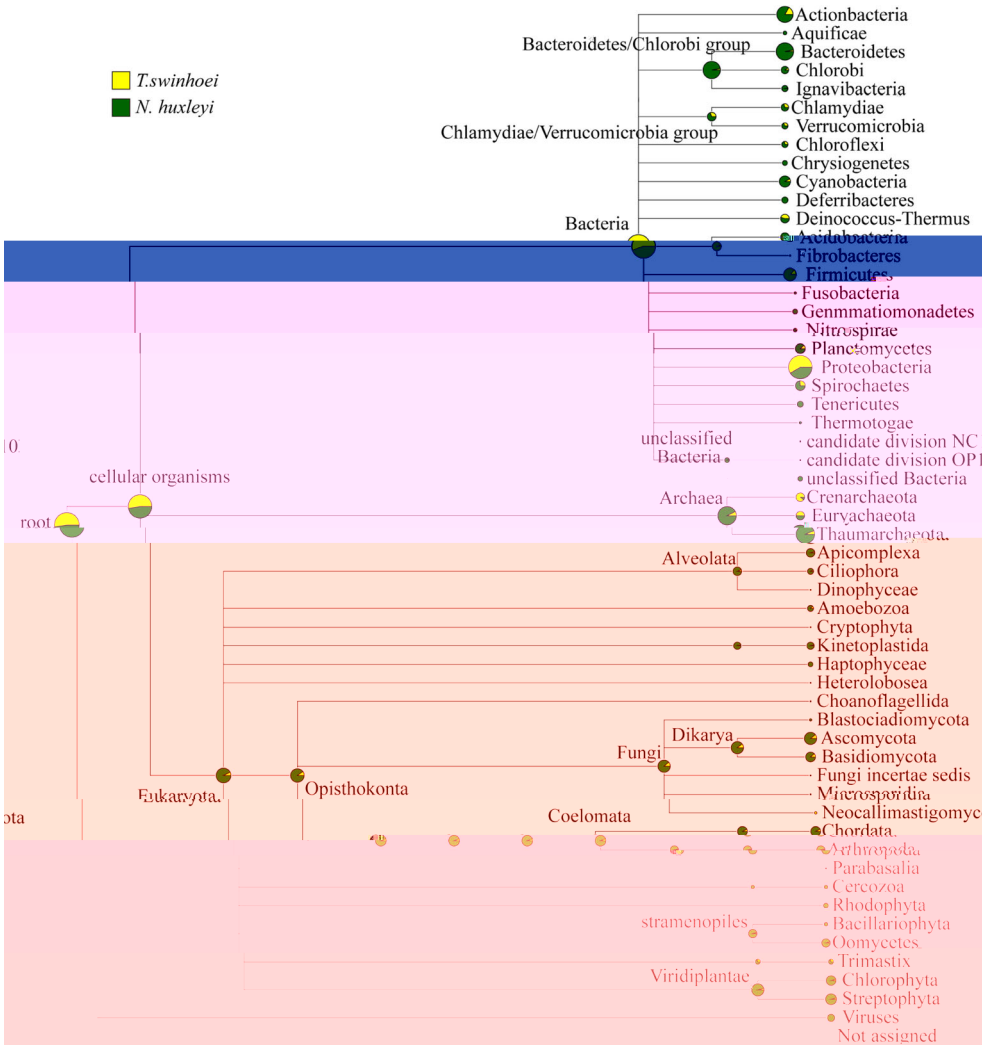
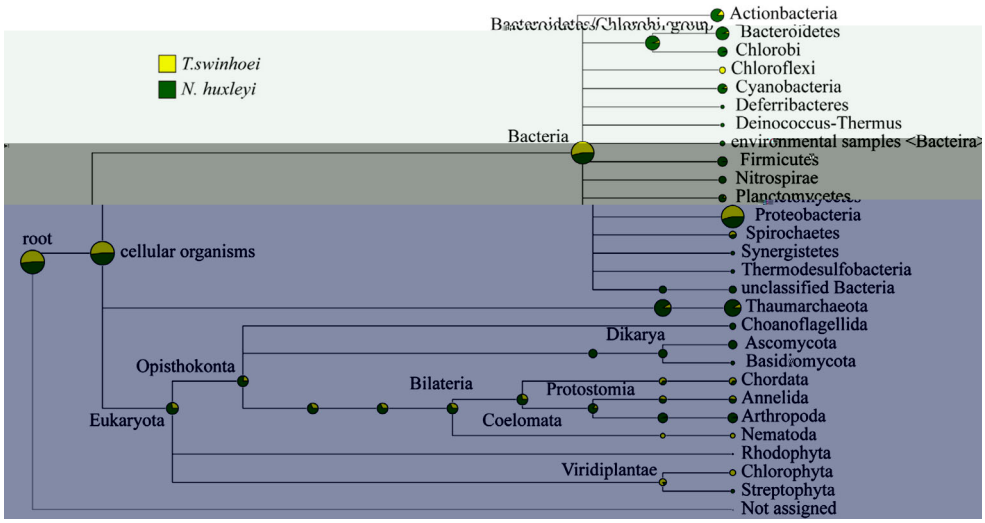
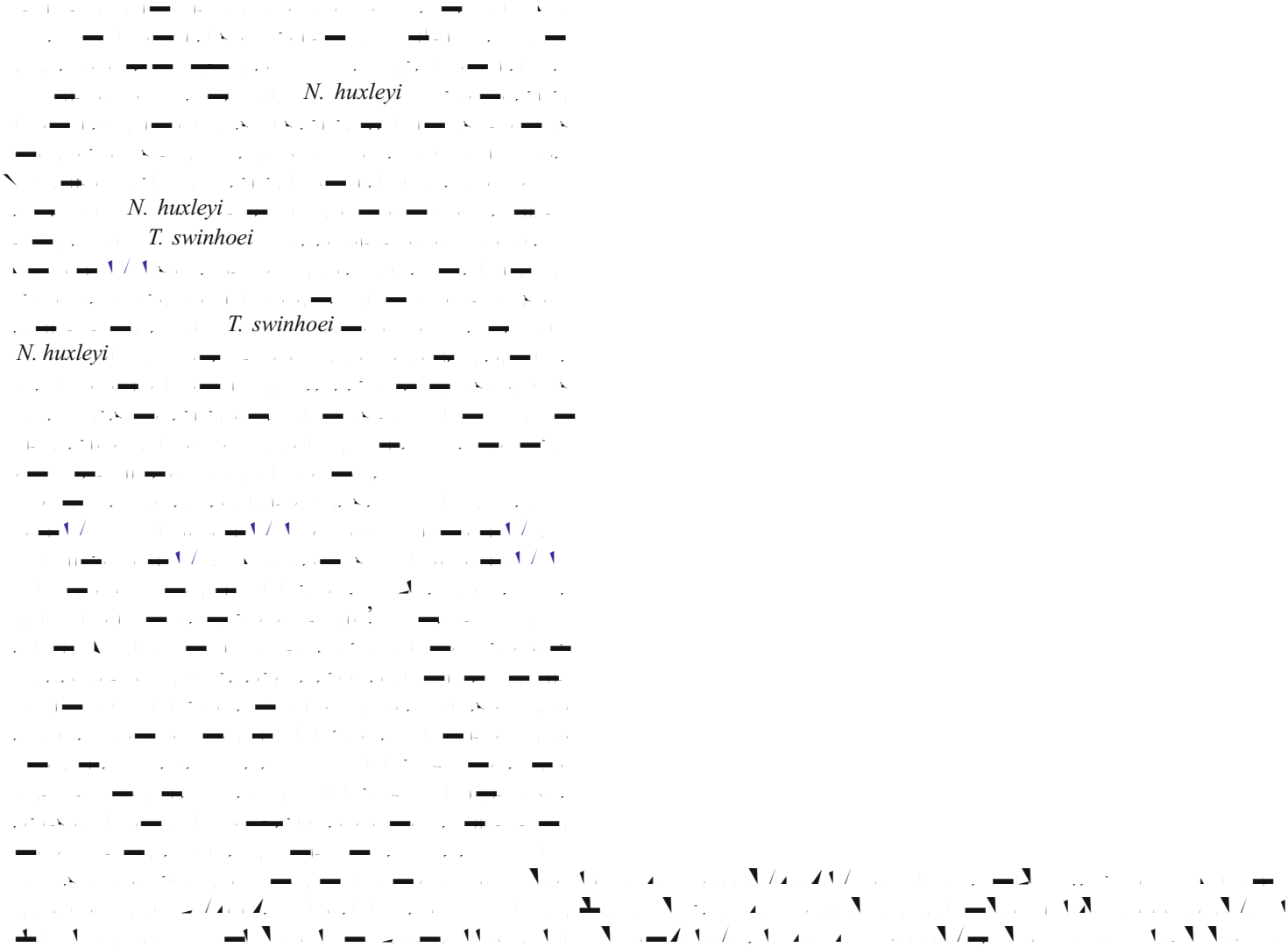


Fig. 4

T. swinhoei
yellow
N. huxleyi
green
circles




N. huxleyi
N. huxleyi
T. swinhoei
T. swinhoei
N. huxleyi

Compliance i h E hical S anda d

Conflic of In e e

Refe ence

Aplysina aerophoba

–*Prochloron*

Xestospongia muta

Suberites zeteki

Mycale armata

Haliclona

Theonella swinhoei *Xestospongia testudinaria*

[illegible]

Arenosclera brasiliensis

[illegible]