**Supplementary File A.**

**Code used for Table 1**

***\*Collect the data from REEFGENOMICS (http://reefgenomics.org) webpage.***

curl -O http://comparative.reefgenomics.org/datasets.html

***\*Collect five Acropora sp. and three Porites sp. data***

curl -O http://comparative.reefgenomics.org/faa/Coral/ Acropora\_digitifera\_peptides\_100.final.clstr.faa

curl -O http://comparative.reefgenomics.org/faa/Coral/ Acropora\_hyacinthus\_peptides\_100.final.clstr.faa

curl -O http://comparative.reefgenomics.org/faa/Coral/ Acropora\_millepora\_peptides\_100.final.clstr.faa

curl -O http://comparative.reefgenomics.org/faa/Coral/ Acropora\_palmata\_peptides\_100.final.clstr.faa

curl -O http://comparative.reefgenomics.org/faa/Coral/ Acropora\_tenuis\_peptides\_100.final.clstr.faa

curl -O http://comparative.reefgenomics.org/faa/Coral/ Porites\_lobata\_peptides\_100.final.clstr.faa

curl -O http://comparative.reefgenomics.org/faa/Coral/

Porites\_asutaliensis\_peptides\_100.final.clstr.faa

curl -O http://comparative.reefgenomics.org/faa/Coral/

Porites\_\_peptides\_100.final.clstr.faa

***\*Download BLAST at home directory***

curl -O ftp://ftp.ncbi.nlm.nih.gov/blast/executables/blast+/LATEST/ncbi-blast-2.15.0+-x64- macosx.tar.gz tar -zxvfncbi-blast-2.15.0+-x64-macosx.tar.gz

***\*Create BLAST database for five Acropora sp. and three Porites sp.***

makeblastdb -in Acropora\_digitifera\_peptides\_100.final.clstr.faa -dbtype prot -hash\_index makeblastdb -in Acropora\_hyacinthus\_peptides\_100.final.clstr.faa -dbtype prot -hash\_index makeblastdb -in\_Acropora\_millepora\_peptides\_100.final.clstr.faa -dbtype prot -hash\_index makeblastdb -in\_Acropora\_palmata\_peptides\_100.final.clstr.faa -dbtype prot -hash\_index makeblastdb -in Acropora\_tenuis\_peptides\_100.final.clstr.faa -dbtype prot -hash\_index

makeblastdb -in\_Porites\_lobata\_peptides\_100.final.clstr.faa -dbtype prot -hash\_index makeblastdb -in\_Porites\_asuraliensis\_peptides\_100.final.clstr.faa -dbtype prot -hash\_index makeblastdb -in\_Porites\_astreoides\_peptides\_100.final.clstr.faa -dbtype prot -hash\_index

***\*Conduct BLASTP with different coral datasets using different queries (Acropora digitifera, Oryzias latipes,*** [***Pongo abelii***](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9601)*,* ***and Homo sapience Mg transporter)***

blastp -db ~/db1/Acropora\_digitifera\_peptides\_100.final.clstr.faa -query ~/query1/Seq1.txt -num\_alignments 5 -evalue 1e-10 -out ~/out1/Result1.txt

blastp -db ~/db1/Acropora\_hyacinthus\_peptides\_100.final.clstr.faa -query ~/query1/Seq1.txt -num\_alignments 5 -evalue 1e-10 -out ~/out1/Result1.txt

blastp -db ~/db1/Acropora\_millepora\_peptides\_100.final.clstr.faa -query ~/query1/Seq1.txt -num\_alignments 5 -evalue 1e-10 -out ~/out1/Result1.txt

blastp -db ~/db1/Acropora\_palmata\_peptides\_100.final.clstr.faa -query ~/query1/Seq1.txt -num\_alignments 5 -evalue 1e-10 -out ~/out1/Result1.txt

blastp -db ~/db1/Acropora\_tenuis\_peptides\_100.final.clstr.faa -query ~/query1/Seq1.txt -num\_alignments 5 -evalue 1e-10 -out ~/out1/Result1.txt

blastp -db ~/db1/Porites\_lobata\_peptides\_100.final.clstr.faa -query ~/query1/Seq1.txt -num\_alignments 5 -evalue 1e-10 -out ~/out1/Result1.txt

blastp -db ~/db1/Porites\_australiensis\_peptides\_100.final.clstr.faa -query ~/query1/Seq1.txt -num\_alignments 5 -evalue 1e-10 -out ~/out1/Result1.txt

blastp -db ~/db1/Porites\_astreoides\_peptides\_100.final.clstr.faa -query ~/query1/Seq1.txt -num\_alignments 5 -evalue 1e-10 -out ~/out1/Result1.txt