

Table S2. MOTUs detected in the sponge nsDNA from Nha Trang Bay. Fish features used in the study are indicated.

| MOTU ID        | Species name                            | best identity | Aggregation | Migration | Habitat | Individual size | Depth range |
|----------------|-----------------------------------------|---------------|-------------|-----------|---------|-----------------|-------------|
| VIEM_000000051 | <i>Acanthurus nigrofuscus</i>           | 1             | small       | no        | reef    | Medium          | Shallow     |
| VIEM_000095325 | <i>Ctenochaetus binotatus</i>           | 0.9941        | small       | no        | reef    | Medium          | Shallow     |
| VIEM_000068108 | <i>Ctenochaetus striatus</i>            | 1             | solitary    | no        | reef    | Medium          | Shallow     |
| VIEM_000255921 | <i>Gazza minuta</i>                     | 1             | solitary    | no        | reef    | Medium          | Deep        |
| VIEM_000255935 | <i>Leiognathus oblongus</i>             | 1             | solitary    | no        | pelagic | Small           | Shallow     |
| VIEM_000279963 | <i>Siganus fuscescens</i>               | 1             | small       | yes       | reef    | Medium          | Shallow     |
| VIEM_000266278 | <i>Gymnothorax undulatus</i>            | 0.9471        | solitary    | no        | reef    | Big             | Deep        |
| VIEM_000323359 | <i>Cheilopogon arcticeps</i>   unicolor | 1             | small       | yes       | pelagic | Medium          | Shallow     |
| VIEM_000283679 | <i>Parexocoetus mento</i>               | 1             | small       | yes       | pelagic | Small           | Shallow     |
| VIEM_000119021 | <i>Entomacrodus decussatus</i>          | 1             | solitary    | no        | reef    | Medium          | Surface     |
| VIEM_000174033 | <i>Parablennius yatabei</i>             | 0.86046512    | solitary    | yes       | reef    | Small           | Surface     |
| VIEM_000294477 | <i>Enneapterygius flavoccipitis</i>     | 0.9759        | solitary    | no        | reef    | Small           | Shallow     |
| VIEM_000129498 | <i>Enneapterygius unimaculatus</i>      | 0.9048        | solitary    | no        | reef    | Small           | Surface     |
| VIEM_000234696 | <i>Decapterus macrosoma</i>             | 1             | small       | no        | reef    | Medium          | Deep        |
| VIEM_000102761 | <i>Megalaspis cordyla</i>               | 1             | small       | yes       | pelagic | Big             | Deep        |
| VIEM_000272150 | <i>Trachinotus</i> sp.                  | 0.9704142     | small       | yes       | pelagic | Big             | Shallow     |
| VIEM_000279960 | <i>Mene maculata</i>                    | 1             | small       | yes       | pelagic | Medium          | Deep        |
| VIEM_000102766 | <i>Rachycentron canadum</i>             | 1             | big         | yes       | pelagic | Big             | Deep        |

|                |                                   |            |          |     |         |        |         |
|----------------|-----------------------------------|------------|----------|-----|---------|--------|---------|
| VIEM_000298344 | <i>Cirrhitichthys oxycephalus</i> | 1          | solitary | no  | reef    | Small  | Shallow |
| VIEM_000004491 | <i>Spratelloides gracilis</i>     | 0.99415205 | big      | yes | pelagic | Small  | Shallow |
| VIEM_000301417 | <i>Encrasicholina heteroloba</i>  | 1          | big      | yes | pelagic | Small  | Shallow |
| VIEM_000119044 | <i>Ctenogobius boleosoma</i>      | 0.9136     | solitary | no  | reef    | Small  | Surface |
| VIEM_000283035 | <i>Eviota guttata</i>             | 0.994      | solitary | no  | reef    | Small  | Shallow |
| VIEM_000255361 | <i>Eviota melasma</i>             | 0.9337     | solitary | no  | reef    | Small  | Shallow |
| VIEM_000168323 | <i>Oxyurichthys auchenolepis</i>  | 1          | solitary | no  | reef    | Small  | Shallow |
| VIEM_000234664 | <i>Trimma macrophthalmum</i>      | 1          | solitary | no  | reef    | Small  | Shallow |
| VIEM_000097460 | <i>Myripristis pralinia</i>       | 1          | small    | no  | reef    | Medium | Shallow |
| VIEM_000312835 | <i>Apogon coccineus</i>           | 0.9699     | small    | no  | reef    | Small  | Shallow |
| VIEM_000069070 | <i>Apogon crassiceps</i>          | 0.9762     | small    | no  | reef    | Small  | Shallow |
| VIEM_000095349 | <i>Apogon</i> sp.                 | 0.8935     | small    | no  | reef    | Small  | Shallow |
| VIEM_000124504 | <i>Pristiapogon kallopterus</i>   | 1          | solitary | no  | reef    | Small  | Shallow |
| VIEM_000121093 | <i>Taeniamia fucata</i>           | 1          | small    | no  | reef    | Small  | Shallow |
| VIEM_000129968 | <i>Cheilinus chlorourus</i>       | 1          | solitary | no  | reef    | Medium | Shallow |
| VIEM_000255922 | <i>Chlorurus japanensis</i>       | 1          | solitary | no  | reef    | Medium | Shallow |
| VIEM_000325029 | <i>Hemigymnus fasciatus</i>       | 1          | small    | no  | reef    | Medium | Shallow |
| VIEM_000281947 | <i>Hemigymnus melapterus</i>      | 1          | solitary | no  | reef    | Medium | Shallow |
| VIEM_000305788 | <i>Thalassoma bifasciatum</i>     | 1          | solitary | no  | reef    | Medium | Shallow |
| VIEM_000286953 | <i>Thalassoma quinquevittatum</i> | 0.99401198 | small    | no  | reef    | Medium | Shallow |
| VIEM_000054866 | <i>Wetmorella nigropinnata</i>    | 1          | solitary | no  | reef    | Small  | Shallow |

|                |                                          |            |          |     |         |        |         |
|----------------|------------------------------------------|------------|----------|-----|---------|--------|---------|
| VIEM_000280078 | Scarus ghobban                           | 1          | solitary | no  | reef    | Big    | Deep    |
| VIEM_000124502 | Scarus rivulatus                         | 1          | small    | no  | reef    | Medium | Shallow |
| VIEM_000000122 | Scarus spinus                            | 1          | solitary | no  | reef    | Medium | Shallow |
| VIEM_000286952 | Caesio caerulea                          | 1          | big      | no  | reef    | Medium | Shallow |
| VIEM_000000012 | Pterocaesio digramma                     | 0.9941     | big      | no  | reef    | Medium | Shallow |
| VIEM_000312845 | Lutjanus fulviflamma                     | 1          | small    | no  | reef    | Medium | Shallow |
| VIEM_000234649 | Lutjanus russellii                       | 1          | small    | no  | reef    | Big    | Shallow |
| VIEM_000280066 | Moolgarda seheli   Crenimugil crenilabis | 0.98255814 | small    | no  | reef    | Big    | Surface |
| VIEM_000312838 | Oedalechilus labiosus                    | 1          | small    | no  | reef    | Medium | Surface |
| VIEM_000279962 | Synagrops japonicus                      | 1          | small    | yes | pelagic | Medium | Deep    |
| VIEM_000095351 | Pempheris adusta                         | 1          | small    | no  | reef    | Medium | Shallow |
| VIEM_000325019 | Pempheris schwenkii                      | 0.98816568 | small    | no  | reef    | Small  | Shallow |
| VIEM_000279964 | Cephalopholis boenak                     | 1          | solitary | no  | reef    | Medium | Shallow |
| VIEM_000282674 | Epinephelus coioides                     | 1          | solitary | no  | reef    | Big    | Deep    |
| VIEM_000279961 | Epinephelus corallicola                  | 1          | solitary | no  | reef    | Medium | Shallow |
| VIEM_000280067 | Epinephelus fuscoguttatus                | 1          | solitary | no  | reef    | Big    | Shallow |
| VIEM_000255923 | Centropyge flavissima                    | 1          | solitary | no  | reef    | Small  | Shallow |
| VIEM_000124501 | Abudefduf sexfasciatus   vaigiensis      | 1          | small    | no  | reef    | Medium | Shallow |
| VIEM_000279957 | Amblyglyphidodon sp.                     | 1          | solitary | no  | reef    | Small  | Shallow |
| VIEM_000294469 | Amphiprion clarkii                       | 1          | solitary | no  | reef    | Small  | Shallow |

|                |                                         |            |          |     |         |        |         |
|----------------|-----------------------------------------|------------|----------|-----|---------|--------|---------|
| VIEM_000298234 | Chromis xanthochira                     | 1          | small    | no  | reef    | Small  | Shallow |
| VIEM_000111802 | Chromis xanthura   opercularis          | 1          | small    | no  | reef    | Medium | Shallow |
| VIEM_000054363 | Neoglyphidodon nigroris                 | 1          | solitary | no  | reef    | Small  | Shallow |
| VIEM_000069073 | Plectroglyphidodon dickii               | 1          | solitary | no  | reef    | Small  | Shallow |
| VIEM_000054359 | Plectroglyphidodon lacrymatus           | 1          | solitary | no  | reef    | Small  | Shallow |
| VIEM_000108927 | Pomacentrus albicaudatus                | 1          | solitary | no  | reef    | Small  | Shallow |
| VIEM_000124512 | Pomacentrus bankanensis   chrysurus     | 1          | small    | no  | reef    | Small  | Surface |
| VIEM_000233930 | Bothus myriaster                        | 1          | solitary | no  | reef    | Medium | Deep    |
| VIEM_000251739 | Hyperoglyphe japonica                   | 0.98823529 | small    | yes | pelagic | Big    | Deep    |
| VIEM_000279959 | Cubiceps pauciradiatus                  | 1          | solitary | yes | pelagic | Medium | Deep    |
| VIEM_000129965 | Auxis rochei                            | 1          | big      | yes | pelagic | Big    | Deep    |
| VIEM_000229701 | Sarda chiliensis                        | 1          | big      | yes | pelagic | Big    | Deep    |
| VIEM_000331160 | Thunnus alalunga                        | 1          | big      | yes | pelagic | Big    | Deep    |
| VIEM_000018282 | Thunnus obesus   albacares   atlanticus | 1          | big      | yes | pelagic | Big    | Deep    |
| VIEM_000259469 | Kumococius rodericensis                 | 0.8982     | small    | no  | reef    | Medium | Deep    |
| VIEM_000054868 | Dendrochirus zebra                      | 1          | solitary | no  | reef    | Medium | Shallow |
| VIEM_000118150 | Plotosus lineatus                       | 0.99415205 | small    | no  | reef    | Medium | Shallow |
| VIEM_000298237 | Scolopsis affinis                       | 1          | small    | no  | reef    | Medium | Shallow |
| VIEM_000230425 | Callionymus izuensis                    | 0.9259     | solitary | no  | reef    | Small  | Shallow |
| VIEM_000129970 | Aeoliscus strigatus                     | 1          | small    | no  | reef    | Small  | Shallow |

|                |                                          |            |          |    |      |        |         |
|----------------|------------------------------------------|------------|----------|----|------|--------|---------|
| VIEM_000233482 | Sufflamen albicaudatum  <br>chrysopteron | 1          | solitary | no | reef | Medium | Shallow |
| VIEM_000233501 | Sufflamen bursa                          | 1          | solitary | no | reef | Medium | Deep    |
| VIEM_000234648 | Aluterus scriptus                        | 1          | solitary | no | reef | Big    | Shallow |
| VIEM_000054846 | Amanses scopas                           | 1          | solitary | no | reef | Medium | Shallow |
| VIEM_000000088 | Cantherhines pullus   pardalis           | 0.99411765 | solitary | no | reef | Medium | Shallow |
| VIEM_000325027 | Arothron hispidus                        | 1          | solitary | no | reef | Big    | Shallow |
| VIEM_000279956 | Arothron mappa                           | 1          | solitary | no | reef | Big    | Shallow |
| VIEM_000108931 | Champsodon nudivittis                    | 1          | solitary | no | reef | Small  | Deep    |
| VIEM_000004395 | Euteleosteomorpha_sp1                    | 0.83236994 |          |    |      |        |         |
| VIEM_000294474 | Euteleosteomorpha_sp2                    | 0.82080925 |          |    |      |        |         |
| VIEM_000004578 | Teleostei_sp3                            | 0.78651685 |          |    |      |        |         |