**SUPPLEMENTARY MATERIAL**

**Supplementary Table 1.** Sequences of unique dual indexes and adapters used for Illumina high-throughput sequencing.

| **Name** | **Sequence** |
| --- | --- |
| i5F-A1 | AATGATACGGCGACCACCGAGATCTACACATCGTACGTCGTCGGCAGCGTC |
| i5F-A2 | AATGATACGGCGACCACCGAGATCTACACACTATCTGTCGTCGGCAGCGTC |
| i5F-A3 | AATGATACGGCGACCACCGAGATCTACACTAGCGAGTTCGTCGGCAGCGTC |
| i5F-A4 | AATGATACGGCGACCACCGAGATCTACACCTGCGTGTTCGTCGGCAGCGTC |
| i5F-A5 | AATGATACGGCGACCACCGAGATCTACACTCATCGAGTCGTCGGCAGCGTC |
| i5F-A6 | AATGATACGGCGACCACCGAGATCTACACCGTGAGTGTCGTCGGCAGCGTC |
| i5F-A7 | AATGATACGGCGACCACCGAGATCTACACGGATATCTTCGTCGGCAGCGTC |
| i5F-A8 | AATGATACGGCGACCACCGAGATCTACACGACACCGTTCGTCGGCAGCGTC |
| i5F-B1 | AATGATACGGCGACCACCGAGATCTACACCTACTATATCGTCGGCAGCGTC |
| i5F-B2 | AATGATACGGCGACCACCGAGATCTACACCGTTACTATCGTCGGCAGCGTC |
| i5F-B3 | AATGATACGGCGACCACCGAGATCTACACAGAGTCACTCGTCGGCAGCGTC |
| i5F-B4 | AATGATACGGCGACCACCGAGATCTACACTACGAGACTCGTCGGCAGCGTC |
| i5F-B5 | AATGATACGGCGACCACCGAGATCTACACACGTCTCGTCGTCGGCAGCGTC |
| i5F-B6 | AATGATACGGCGACCACCGAGATCTACACTCGACGAGTCGTCGGCAGCGTC |
| i5F-B7 | AATGATACGGCGACCACCGAGATCTACACGATCGTGTTCGTCGGCAGCGTC |
| i5F-B8 | AATGATACGGCGACCACCGAGATCTACACGTCAGATATCGTCGGCAGCGTC |
| i5-FC1 | AATGATACGGCGACCACCGAGATCTACACACGACGTGTCGTCGGCAGCGTC |
| i5-FC2 | AATGATACGGCGACCACCGAGATCTACACATATACACTCGTCGGCAGCGTC |
| i7R-A1 | CAAGCAGAAGACGGCATACGAGATAACTCTCGGTCTCGTGGGCTCGG |
| i7R-A2 | CAAGCAGAAGACGGCATACGAGATACTATGTCGTCTCGTGGGCTCGG |
| i7R-A3 | CAAGCAGAAGACGGCATACGAGATAGTAGCGTGTCTCGTGGGCTCGG |
| i7R-A4 | CAAGCAGAAGACGGCATACGAGATCAGTGAGTGTCTCGTGGGCTCGG |
| i7R-A5 | CAAGCAGAAGACGGCATACGAGATCGTACTCAGTCTCGTGGGCTCGG |
| i7R-A6 | CAAGCAGAAGACGGCATACGAGATCTACGCAGGTCTCGTGGGCTCGG |
| i7R-A7 | CAAGCAGAAGACGGCATACGAGATGGAGACTAGTCTCGTGGGCTCGG |
| i7R-A8 | CAAGCAGAAGACGGCATACGAGATGTCGCTCGGTCTCGTGGGCTCGG |
| i7R-A9 | CAAGCAGAAGACGGCATACGAGATGTCGTAGTGTCTCGTGGGCTCGG |
| i7R-A10 | CAAGCAGAAGACGGCATACGAGATTAGCAGACGTCTCGTGGGCTCGG |
| i7R-A11 | CAAGCAGAAGACGGCATACGAGATTCATAGACGTCTCGTGGGCTCGG |
| i7R-A12 | CAAGCAGAAGACGGCATACGAGATTCGCTATAGTCTCGTGGGCTCGG |
| i7R-B1 | CAAGCAGAAGACGGCATACGAGATAAGTCGAGGTCTCGTGGGCTCGG |
| i7R-B2 | CAAGCAGAAGACGGCATACGAGATATACTTCGGTCTCGTGGGCTCGG |
| i7R-B3 | CAAGCAGAAGACGGCATACGAGATAGCTGCTAGTCTCGTGGGCTCGG |
| i7R-B4 | CAAGCAGAAGACGGCATACGAGATCATAGAGAGTCTCGTGGGCTCGG |
| i7R-B5 | CAAGCAGAAGACGGCATACGAGATCGTAGATCGTCTCGTGGGCTCGG |
| i7R-B6 | CAAGCAGAAGACGGCATACGAGATCTCGTTACGTCTCGTGGGCTCGG |
| i7R-B7 | CAAGCAGAAGACGGCATACGAGATGCGCACGTGTCTCGTGGGCTCGG |
| i7R-B8 | CAAGCAGAAGACGGCATACGAGATGGTACTATGTCTCGTGGGCTCGG |
| i7R-B9 | CAAGCAGAAGACGGCATACGAGATGTATACGCGTCTCGTGGGCTCGG |
| i7R-B10 | CAAGCAGAAGACGGCATACGAGATTACGAGCAGTCTCGTGGGCTCGG |
| i7R-B11 | CAAGCAGAAGACGGCATACGAGATTCAGCGTTGTCTCGTGGGCTCGG |
| i7R-B12 | CAAGCAGAAGACGGCATACGAGATTCGCTACGGTCTCGTGGGCTCGG |
| i7R-C1 | CAAGCAGAAGACGGCATACGAGATACCTACTGGTCTCGTGGGCTCGG |
| i7R-C2 | CAAGCAGAAGACGGCATACGAGATAGCGCTATGTCTCGTGGGCTCGG |

**Supplementary Table 2.** Lineage assignment of coral samples using the CAPS assay and their associated Symbiodiniaceae dominance of either *Cladocopium* or *Durusdinium*.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **Region** | **Site** | **CAPS assay digestion** | | | **Predicted lineage** | **Symbiodiniaceae dominance** |
| **Green HhaI** | **Blue HaeIII** | **Red Taqα1** |
| HA1 | Singapore | Pulau Hantu | No | No | Yes | Likely Green | *Durusdinium* |
| HA10 | No | Yes | Yes | Blue | *Cladocopium* |
| HA11 | No | Yes | Yes | Blue | *Cladocopium* |
| HA12 | No | No | Yes | Likely Green | *Cladocopium* |
| HA13 | No | No | Yes | Likely Green | *Cladocopium* |
| HA14 | No | No | Yes | Likely Green | *Durusdinium* |
| HA15 | No | No | Yes | Likely Green | *Cladocopium* |
| HA17 | No | No | Yes | Likely Green | *Cladocopium* |
| HA18 | No | Yes | Yes | Blue | *Cladocopium* |
| HA19 | No | No | Yes | Likely Green | *Cladocopium* |
| HA2 | No | No | Yes | Likely Green | *Cladocopium* |
| HA21 | No | No | Yes | Likely Green | *Cladocopium* |
| HA22 | No | No | Yes | Likely Green | *Cladocopium* |
| HA3 | No | No | Yes | Likely Green | *Cladocopium* |
| HA4 | No | No | Yes | Likely Green | *Cladocopium* |
| HA5 | No | No | Yes | Likely Green | *Cladocopium* |
| HA8 | No | Yes | Yes | Blue | *Cladocopium* |
| KU1 | Kusu Island | No | No | Yes | Likely Green | *Cladocopium* |
| KU10 | No | Yes | Yes | Blue | *Cladocopium* |
| KU11 | No | No | Yes | Likely Green | *Cladocopium* |
| KU12 | No | No | Yes | Likely Green | *Cladocopium* |
| KU13 | No | Yes | Yes | Blue | *Cladocopium* |
| KU14 | No | No | Yes | Likely Green | *Cladocopium* |
| KU15 | No | No | Yes | Likely Green | *Cladocopium* |
| KU16 | No | Yes | Yes | Blue | *Cladocopium* |
| KU17 | No | No | Yes | Likely Green | *Cladocopium* |
| KU18 | No | No | Yes | Likely Green | *Cladocopium* |
| KU3 | No | Yes | Yes | Blue | *Cladocopium* |
| KU4 | No | Yes | Yes | Blue | *Cladocopium* |
| KU5 | No | No | Yes | Likely Green | *Cladocopium* |
| KU6 | No | Yes | Yes | Blue | *Cladocopium* |
| KU7 | No | Yes | Yes | Blue | *Cladocopium* |
| KU8 | No | No | Yes | Likely Green | *Cladocopium* |
| KU9 | No | Yes | Yes | Blue | *Cladocopium* |
| RA10 | Raffles Lighthouse | No | Yes | Yes | Blue | *Cladocopium* |
| RA11 | No | Yes | Yes | Blue | *Cladocopium* |
| RA12 | No | No | Yes | Likely Green | *Cladocopium* |
| RA13 | No | Yes | Yes | Blue | *Cladocopium* |
| RA14 | No | Yes | Yes | Blue | *Cladocopium* |
| RA15 | No | Yes | Yes | Blue | *Cladocopium* |
| RA16 | No | Yes | Yes | Blue | *Cladocopium* |
| RA17 | No | Yes | Yes | Blue | *Cladocopium* |
| RA18 | No | No | Yes | Likely Green | *Cladocopium* |
| RA19 | No | No | Yes | Likely Green | *Cladocopium* |
| RA2 | No | Yes | Yes | Blue | *Cladocopium* |
| RA20 | No | Yes | Yes | Blue | *Cladocopium* |
| RA21 | No | Yes | Yes | Blue | *Cladocopium* |
| RA22 | No | No | Yes | Likely Green | *Cladocopium* |
| RA23 | No | Yes | Yes | Blue | *Cladocopium* |
| RA3 | No | Yes | Yes | Blue | *Cladocopium* |
| RA4 | No | Yes | Yes | Blue | *Cladocopium* |
| RA5 | No | Yes | Yes | Blue | *Cladocopium* |
| RA6 | No | Yes | Yes | Blue | *Cladocopium* |
| RA7 | No | No | Yes | Likely Green | *Cladocopium* |
| RA8 | No | No | Yes | Likely Green | *Cladocopium* |
| RA9 | No | No | Yes | Likely Green | *Cladocopium* |
| SE10 | Pulau Semakau | No | No | Yes | Likely Green | *Cladocopium* |
| SE11 | No | Yes | Yes | Blue | *Cladocopium* |
| SE12 | No | No | Yes | Likely Green | *Cladocopium* |
| SE13 | No | Yes | Yes | Blue | *Cladocopium* |
| SE14 | No | No | Yes | Likely Green | *Cladocopium* |
| SE15 | No | No | Yes | Likely Green | *Cladocopium* |
| SE16 | No | Yes | Yes | Blue | *Cladocopium* |
| SE17 | No | No | Yes | Likely Green | *Cladocopium* |
| SE18 | No | No | Yes | Likely Green | *Cladocopium* |
| SE19 | No | No | Yes | Likely Green | *Cladocopium* |
| SE2 | No | Yes | Yes | Blue | *Cladocopium* |
| SE20 | No | Yes | Yes | Blue | *Cladocopium* |
| SE3 | No | No | Yes | Likely Green | *Cladocopium* |
| SE4 | No | No | Yes | Likely Green | *Cladocopium* |
| SE5 | No | No | Yes | Likely Green | *Cladocopium* |
| SE6 | No | No | Yes | Likely Green | *Cladocopium* |
| SE7 | No | No | Yes | Likely Green | *Cladocopium* |
| SE8 | No | No | Yes | Likely Green | *Cladocopium* |
| SE9 | No | Yes | Yes | Blue | *Cladocopium* |
| SIS1 | Sisters’ Island | No | Yes | Yes | Blue | *Cladocopium* |
| SIS10 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS11 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS12 | No | Yes | Yes | Blue | *Cladocopium* |
| SIS13 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS14 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS15 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS15 | No | Yes | Yes | Blue | *Cladocopium* |
| SIS16 | No | Yes | Yes | Blue | *Cladocopium* |
| SIS17 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS18 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS19 | No | Yes | Yes | Blue | *Cladocopium* |
| SIS2 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS20 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS21 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS3 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS4 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS5 | No | Yes | Yes | Blue | *Cladocopium* |
| SIS6 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS7 | No | Yes | Yes | Blue | *Cladocopium* |
| SIS8 | No | No | Yes | Likely Green | *Cladocopium* |
| SIS9 | No | No | Yes | Likely Green | *Cladocopium* |
| STJ1 | St. John’s Island | No | Yes | Yes | Blue | *Cladocopium* |
| STJ10 | No | No | Yes | Likely Green | *Cladocopium* |
| STJ11 | No | Yes | Yes | Blue | *Cladocopium* |
| STJ12 | No | No | Yes | Likely Green | *Durusdinium* |
| STJ13 | No | Yes | Yes | Blue | *Cladocopium* |
| STJ14 | No | Yes | Yes | Blue | *Cladocopium* |
| STJ15 | No | No | Yes | Likely Green | *Cladocopium* |
| STJ16 | No | No | Yes | Likely Green | *Cladocopium* |
| STJ17 | No | Yes | Yes | Blue | *Durusdinium* |
| STJ2 | No | No | Yes | Likely Green | *Cladocopium* |
| STJ20 | No | No | Yes | Likely Green | *Cladocopium* |
| STJ3 | No | No | Yes | Likely Green | *Cladocopium* |
| STJ5 | No | No | Yes | Likely Green | *Cladocopium* |
| STJ7 | No | No | Yes | Likely Green | *Cladocopium* |
| STJ8 | No | No | Yes | Likely Green | *Cladocopium* |
| STJ9 | No | No | Yes | Likely Green | *Cladocopium* |
| TPT1 | Terumbu Pempang Tengah | No | No | Yes | Likely Green | *Cladocopium* |
| TPT10 | No | Yes | Yes | Blue | *Cladocopium* |
| TPT11 | No | Yes | Yes | Blue | *Cladocopium* |
| TPT12 | No | Yes | Yes | Blue | *Cladocopium* |
| TPT13 | No | No | Yes | Likely Green | *Cladocopium* |
| TPT14 | No | Yes | Yes | Blue | *Cladocopium* |
| TPT15 | No | No | Yes | Likely Green | *Cladocopium* |
| TPT16 | No | No | Yes | Likely Green | *Cladocopium* |
| TPT17 | No | Yes | Yes | Blue | *Cladocopium* |
| TPT18 | No | Yes | Yes | Blue | *Cladocopium* |
| TPT19 | No | No | Yes | Likely Green | *Cladocopium* |
| TPT2 | No | No | Yes | Likely Green | *Cladocopium* |
| TPT21 | No | Yes | Yes | Blue | *Cladocopium* |
| TPT3 | No | No | Yes | Likely Green | *Cladocopium* |
| TPT4 | No | Yes | Yes | Blue | *Cladocopium* |
| TPT5 | No | No | Yes | Likely Green | *Cladocopium* |
| TPT6 | No | No | Yes | Likely Green | *Cladocopium* |
| TPT7 | No | No | Yes | Likely Green | *Cladocopium* |
| TPT8 | No | Yes | Yes | Blue | *Cladocopium* |
| TPT9 | No | Yes | Yes | Blue | *Cladocopium* |
| POM3 | Papua New Guinea | Port Moresby | No | Yes | Yes | Blue | *Cladocopium* |
| POM6 | - | Yes | Yes | Blue | *Cladocopium* |
| POM10 | No | Yes | Yes | Blue | *Cladocopium* |
| POM13 | - | Yes | Yes | Blue | *Cladocopium* |
| MI03 | Milne Bay | No | Yes | Yes | Blue | *Cladocopium* |
| MI05 | Yes | No | - | Green | *Cladocopium* |
| MI16 | Yes | No | Yes | Green | *Cladocopium* |
| MA1 | Madang | Yes | No | - | Green | *Cladocopium* |
| MA4 | - | Yes | Yes | Blue | *Cladocopium* |
| MA5 | Yes | No | Yes | Green | *Cladocopium* |
| MA18 | No | Yes | - | Blue | *Cladocopium* |
| KV1 | Kavieng | Yes | No | Yes | Green | *Durusdinium* |
| KV3 | - | No | Yes | Not Red | *Durusdinium* |
| KV11 | Yes | No | Yes | Green | *Durusdinium* |
| KV18 | Yes | - | Yes | Green | *Cladocopium* |
| KB2 | Kimbe Bay | No | No | Yes | Not Red | *Durusdinium* |
| KB6 | No | Yes | Yes | Blue | *Cladocopium* |
| KB10 | No | No | Yes | Not Red | *Cladocopium* |
| KB16 | Yes | No | Yes | Green | *Durusdinium* |
| RAB1 | Rabaul | Yes | No | Yes | Green | *Cladocopium* |
| RAB14 | - | - | Yes | Not Red | *Cladocopium* |