**Supplementary Table S1.** GenBank Blast results for sequences from the polyps in the present study

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Genes | Species\* | Genetic similarity | Accession numbers | Locality | Life stage originated | Reference |
| COI | *Eirene* sp. | / | MN604392 | Fujian, China (24.21˚N, 118.02˚E) | Polyp | **This study** |
|  | *Eirene lacteoides* | 100.00% | FJ418661 | Chinses coasts | Medusa　 | Zheng et al., 2016 (direct submission) |
|  | *Tima formosa* | 100.00% | JQ716166 | Changjiang River Estuary | Medusa | Zheng et al., 2014 |
|  | *Tima formosa* | 99.65% | JQ716167 | Changjiang River Estuary | Medusa | Zheng et al., 2014 |
|  | *Pelagia* sp. | 84.70% | KY655790 | Gulf of Oman, Iran | Medusa | Pourjomeh et al., 2018 |
|  | *Aequorea* sp.  | 84.83% | MF742074 | Province: CCAL-California Upwelling Coastal | Medusa | Abboud et al., 2018 |
| 16S | *Eirene* sp. | / | MN595901 | Fujian, China (24.21˚N, 118.02˚E) | Polyp | **This study** |
|  | *Eirene lacteoides* | 99.37% | FJ418650 | Chinses coasts　 | Medusa　 | Zheng et al., 2016 (direct submission) |
|  | *Tima formosa* | 99.34% | JQ715996 | Jiaozhou Bay | Medusa | Zheng et al., 2014 |
|  | *Tima formosa* | 99.34% | JQ715995 | Jiaozhou Bay | Medusa | Zheng et al., 2014 |
|  | *Tima formosa* | 99.34% | JQ715994 | Jiaozhou Bay | Medusa | Zheng et al., 2014 |
|  | *Tima formosa* | 99.34% | JQ715993 | Jiaozhou Bay | Medusa | Zheng et al., 2014 |
| 18S | *Eirene* sp. | / | MN595899 | Fujian, China (24.21˚N, 118.02˚E) | Polyp | **This study** |
|  | *Eirene kambara* | 99.28% | KF962263 | Chinses coasts　 | Medusa　 | He et al., 2014 (direct submission) |
|  | *Aequorea aequorea* | 99.04% | AF358076 | Unknown | Medusa? | Collins, 2002 |
|  | *Aequorea* sp. | 99.10% | KY363972 | Torquary, England | Medusa | Schuchert et al., 2017 |
|  | *Aequorea australis* | 98.86% | KF962198 | Chinses coasts　 | Medusa | He et al., 2014 (direct submission) |
|  | *Aequorea victoria* | 98.86% | AF358077 | Unknown | Medusa? | Collins, 2002 |
| 28S | *Eirene* sp. | / | MN595902 | Fujian, China (24.21˚N, 118.02˚E) | Polyp | **This study** |
|  | *Eirene kambara* | 97.75% | KF962353 | Chinses coasts　 | Medusa | He et al., 2014 (direct submission) |
|  | *Aequorea aequorea* | 96.55% | EU305505 | Woods Hole, Massachusetts, USA  | Medusa? | Cartwright et al., 2008 |
|  | *Eucheilota* sp. | 96.47% | KX665530 | Uruguay  | Polyp | Cunha et al., 2017 |
|  | *Eucheilota* sp*.* | 96.47% | KX665531 | Uruguay  | Polyp | Cunha et al., 2017 |
|  | *Octophialucium indicum* | 96.35% | EU272577 | Unknown | Medusa? | Evans et al., 2008 |

“\*” The first five GenBank Blast records with the highest sequence similarity were listed out

**Supplementary reference**

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