**Table S1.** List of specimens, locality, and Genbank accession numbers for 8 terminal taxa used in this phylogenetic analysis. SIO: Marine Vertebrate Collection at Scripps Institution of Oceanography and UMNB: A. Murase’s personal collection. Bold accession numbers are the novel sequences generated in this study

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Taxon | Voucher ID | Locality | COI | cytochrome B | 16S | 12S | RAG-1 | TMO-4C4 |
| *Alloclinus holderi* | SIO 04-44 | San Diego, USA | GU440210.1 | DQ132501 | **MH830500** | **MH830492** | **MH830476** | **MH830484** |
| *Mccoskerichthys sandae* | SIO 01-167 | Costa Rica | **MH830469** | - | **MH830507** | **MH830499** | **MH830483** | **MH830491** |
| *Neoclinus blanchardi* | SIO 00-73 | San Diego, USA | **MH830463** | **MH830470** | **MH830501** | **MH830493** | **MH830477** | **MH830485** |
| *Neoclinus bryope* | UMNB-I91 | Miyazaki, Japan | **MH830468** | **MH830475** | **MH830506** | **MH830498** | **MH830479** | **MH830490** |
| *Neoclinus nudus* | UMNB-I1480 | Miyazaki, Japan | **MH830466** | **MH830473** | **MH830504** | **MH830496** | **MH830478** | **MH830488** |
| *Neoclinus okazakii* | UMNB-I82 | Miyazaki, Japan | **MH830467** | **MH830474** | **MH830505** | **MH830497** | **MH830480** | **MH830489** |
| *Neoclinus stephensae* | SIO 16-50 | Long beach, CA, USA | **MH830465** | **MH830472** | **MH830503** | **MH830495** | **MH830481** | **MH830487** |
| *Neoclinus uninotatus* | SIO 16-50 | Long beach, CA, USA | **MH830464** | **MH830471** | **MH830502** | **MH830494** | **MH830482** | **MH830486** |