**Table S2.** Sampling information of species used for phylogenetic analysis in this study

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Species | Location | Depth (m) | Accession no. | References |
| *Branchipolynoe seepensis* | Gulf of Mexico (Atlantic) | 3266 | MH369885 | (Lindgren et al. 2019) |
| *B. symmytilida* | East Central Pacific | 2493 | GQ473643 | (Plouviez et al. 2009) |
| *B. pettiboneae* | Western Pacific | 1120 | KU507073 | (Sui & Li, 2017) |
| *B. longqiensis* | Southwest Indian Ridge | 2761 | MH202754 | (Zhou et al. 2018) |
| *B. eliseae* | Eastern Pacific | 1009 | MH369908 | (Lindgren et al. 2019) |
| *B. halliseyae* | Eastern Pacific | 1008 | MH370022 | (Lindgren et al. 2019) |
| *B. kajsae* | Eastern Pacific | 1000 | MH369899 | (Lindgren et al. 2019) |
| *B. meridae* | Eastern Pacific | 1891 | MH370016 | (Lindgren et al. 2019) |
| *B. tjiasmantoi* | Western Pacific | 1973 | MH369949 | (Lindgren et al. 2019) |
| *B. onnuriensis* sp. nov. | Central Indian Ridge | 2014 |  | This research |
| *Branchinotogluma japonicus* | East China Sea | 1555 | KY753824 | (Zhang et al. 2018) |