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Complete Mitochondrial Genome Sequences for Four Bryozoan Species

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Based on shared morphological characteristics, bryozoans have traditionally been grouped with phoronids and brachiopods to form the Lophophorata, a superphylum within the deuterostomes. However, molecular comparisons (mainly from 18S phylogenies) have challenged this placement suggesting that bryozoans are protostomes of the lophotrochozoan clade. There are enough lophotrochozoan genomes now available in the databases for comparative genomic analysis. Thus, to further test this phylogenetic hypothesis we sequenced complete mitochondrial genomes for the ectoprocts: *Bugula* sp., *Flustrellidra* sp., *Membranipora* sp. and *Electra* sp. These mitochondrial genomes are relatively small (approximately 14 kb) when compared to other metazoans, and the gene arrangements are very divergent among them as well as when compared to other lophotrochozoan taxa. We will be presenting the results from both gene order comparisons and protein encoding genes for phylogenetic reconstruction to test for the monophyly of bryozoans and lophophorates within the Lophotrochozoa.

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