**161 primers for PCR-amplification of Octocorallia mitochondrial genome fragments**

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**Read me**

This dataset includes:

1. This Read Me File (20220419\_Easton\_and\_Hicks\_OctocoralPrimers\_ReadMe.docx).
2. An .xlsx file (2022April\_Easton\_and Hicks\_OctocoralPrimers.xlsx) with three sheets: Primer List, Recommended primer pairs, and References.
3. A Geneious xml file with the 161 primers (OctocoralPrimers\_Easton\_and\_Hicks\_2022.geneious).
4. A compressed fasta file of the 161 primers (161OctocoralPrimers\_Easton\_and\_Hicks\_2022.fasta.gz).

Primers were designed by Erin E. Easton between 2017 and 2019 to improve the success rate of amplification and sequencing of mitochondrial genome fragments for Octocorallia species. Additional primers were designed for *Swiftia exserta* once it was discovered that its mitochondrial genome sequence substantially differed from other octocorals. A total of 161 primers were designed that permit amplification and sequencing of the complete mitochondrial genomes of numerous octocoral species. Although most were designed without referencing published sequences, some do overlap with existing primers or were modified from existing primers (See Primer list sheet’s Notes and Reference columns in the .xlsx file). Most primers were used only for sequencing; however numerous primers were used for amplification. The primer pairs that consistently worked in the labs of Easton and Hicks are listed in the Recommended primer pairs Sheet in the .xlsx file). Because thermocycler protocols will differ with reagents and thermocyclers used, amplification protocols are not included. You can contact Erin E. Easton at [erin.easton@utrgv.edu](mailto:erin.easton@utrgv.edu) for guidance.

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