

DNA Barcoding of Sea Slugs (*Nudibranch*)

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DNA barcoding is a method used to rapidly recognize species by comparing their DNA sequences to the sequences of matching/similar species located in accessible database archives like GenBank. As one of the leading identification methods for many organisms, the strengths of DNA barcoding are established in its ability to identify various species of different kingdoms (animalia, fungi, plantae, etc.) accurately and quickly without the need for high professional expertise. The purpose of this project is to identify four sea slugs utilizing DNA barcoding and potentially add their sequences to the database if there is a lack of similarity in currently recognized species. This research will be done through DNA extraction, amplification through PCR (polymerase chain reactions), conversion of DNA copies into sequences, and blasting of DNA sequences. Resources such as a PCR machine, different solutions (e.g. buffers, primers, PCR bead), a centrifuge, micropipettes, GeneWiz (a company), and DNA Subway (a program) will be used. It is important to note that only the CO1 gene within the sea slugs' DNA will be amplified as this gene is commonly used to recognize organisms of similar species and separate organisms of different species. The result of this research may contribute to the addition of new sea slug species in GenBank, and it will encourage more species of similar origins to be identified.