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DNA Barcoding of Kemp's Ridley (Lepidochelys Kempii) in México †

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Abstract: From the 7 existing species of sea turtles, two are endemic and one out of them inhabits the Gulf of Mexico and nests mainly in the Rancho Nuevo (RN) Sanctuary, Aldama, Tamaulipas, Mexico. The objective of this work was to determine the DNA barcode by COI gene sequences in Kemp's ridley turtle (Lepidochelys kempii) and to estimate their genetic divergence and diversity. One hundred and ten new sequences were obtained from the Kemp's ridley turtles from RN sanctuary and compared with the 13 sequences reported in BOLD database. Sequences of nearly 700 bp of Kemp's ridley were aligned among them and compared to 7 different sea turtle species; all new sequences will be added to the BOLD database. Genetic divergence showed a clear separation between other species (0.02 to 0.12), while their relationship with the olive ridley sea turtle (Lepidochelys olivacea) was confirmed (0.02). Also, the result of the haplotype network showed 47 haplotypes, 46 out of which were novel and only one was the most predominant, it belonged to RN sanctuary. The phylogenetic tree showed and confirmed the separation into 2 main clades or families and one out of them, contained the remaining 6 sea turtles species. Finally, DNA barcode for Kemp's ridley was obtained. In conclusion, there was clear evidence that DNA barcode by the COI gene is useful for the study of Kemp's ridley turtles, being able to discriminate between dominant and new haplotypes from those already reported, as well as study phylogeny and genetic diversity in Kemp's ridley.

Keywords: Kemp's ridley; DNA barcoding; Rancho Nuevo Sanctuary; Tamaulipas

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