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Phylogenetic Relationships of Island Flying Fox, *Pteropus hypomelanus* (Chiroptera: Pteropodidae) along the East and West Coast of Peninsular Malaysia based on Cytochrome *b* Sequences

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Abstract. The study was conducted to determine phylogenetic relationships of Island Flying Fox (*Pteropus hypomelanus*) along the East and West Coast of the Peninsular Malaysia based on Cytochrome *b* sequences of mitochondrial DNA and to see the effectiveness of using this region in explaining the relationships among them. There are 29 genetic samples were collected from the several islands includes Dangli Island (Langkawi), Tioman Island (Johor), Tinggi Island (Johor), Redang Island (Terengganu) and Pangkor Island (Perak). Meanwhile, one sequences from the GeneBank represent as outgroup, *Pteropus vampyrus* to construct a complete phylogenetic tree. Tree topologies were built using the Neighbour Joining (NJ) and Maximum Parsimony (MP) methods. The resulting phylogenetic tree showed a clear separation between (North-West) and (South-East) population supported with 100% bootstrap value. The effectiveness of Cytochrome *b* has successfully resolved the phylogenetic tree when separating individuals between the populations. This study can contribute to the resolution of taxonomic and systematic problems of Island Flying Fox in Peninsular Malaysia by looking at the effectiveness of Cytochrome *b* region in explaining the phylogenetic relationships between the populations.

INTRODUCTION

Flying foxes is a type of bat because it is in order of Chiroptera [1]. They were classified into the Pteropodidae family and under this family, there are 42 genera with about 170 [2]. Francis et al. 2008 recorded 17 subspecies under *P. hypomelanus*. They were also found on the coast of the island [2] and also found on islands along the eastern and western coastal regions of the Malay Peninsula [3] but they are not found on the mainland Malay Peninsula or on mainland India or Sri Lanka [3]. These bats play a crucial role in pollination and seed dispersal through their phytophagous diet, which in turn benefit human wellbeing either directly or indirectly [4], [5]. Bats are unique animals because they are the only mammals that capable of flying and sharing the same structure and functions of the same group of birds and mammals [6].

The fur on the head is most commonly dark brown, but can be range from light to yellowish brown [3]. This head and mantle pelage color varies geographically, being darker in the western portions of the range and lighter in eastern portions of the range [3] Stomach color ranges from a golden buff to a cream buff and the hair around the eyes is generally grayish in color [3].