MOLECULAR PHYLOGENY OF UNIDENTIFIED RATS USING PARTIAL CYTOCHROME *B* FRAGMENT

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TABLE OF CONTENTS

ABSTRACT

MOLECULAR PHYLOGENY OF UNIDENTIFIED RATS USING PARTIAL CYTOCHROME *B* FRAGMENT

Rattus spp. are widely distributed all over the world and most species cause damaged to habitat and the spreading of the disease. This species have evolved to adapt with their surrounding. This study aims to determine the species of unidentified rats based on phylogeny-based identifications using partial cytochrome b (cytb) fragment and to compare with the morphological identification of unidentified rats with phylogeny-based identifications. The physical characteristics of five unidentified rats caught were observed and genomic DNA from all five rats were extracted and amplified. Only three samples were successfully amplified and sequenced for a total of 342 bp. Phylogenetic relationships among these three sequences with additional of 71 *Rattus spp.* sequences were inferred from Neighbour-Joining, Bayesian inference and Maximum Likelihood analyses. Based on the phylogenetic analyses, the three unidentified rats were possibly related to *R. Tiomanicus, R. Kandianus* and/or *R. rattus.* It was difficult to distinguish the species of these rats based on their physical characteristics due to their similar appearance, hence a molecular data gave a clue of their possible species identification.