UNIVERSITI TEKNOLOGI MARA

PHYLOGENETIC RELATIONSHIPS OF THE *ORANG ASLI* IN TAMAN NEGARA BASED ON *ALU*8 BI-ALLELIC MARKERS

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ABSTRACT

The *Orang Asli* is a collection of ethnic groups that are believed to be the indigenous people of Peninsular Malaysia. They consist of three different ethnics which are *Senoi*, *Proto-Malay* (or also known as the Aboriginal Malay) and *Negrito*. Till now, there is very few research carried out in Malaysia involving *Orang Asli* population. Recent studies only focused on haplotype diversity of Y-STRs in Malays of Kelantan and Minang. For many years, there are many changes on *Orang Asli* population in Peninsular Malaysia. The reason for these changes maybe due to the *Orang Asli* migration, *Orang Asli* communities living together in the village and *Orang Asli* neighbourhood with adjacent village or states. Hence, there is an urgent need for study on the genetic and evolutionary history of *Orang Asli* population. In this study, the evolutionary history and relationship among *Orang Asli* in Taman Negara is based on the *Alu* insertion polymorphisms specific to chromosome 8. *Alu* bi-allelic markers are generally most preferred among other markers, as there is no known mechanism of back-mutation reported which means that they are identical by descent markers. This research focused on the highest population of *Orang Asli* which resides in Taman Negara, Pahang. The analysis includes the distribution of *Alu* polymorphisms specific on chromosome 8 (by using PCR) in forty-nine samples of *Orang Asli* and also the genetic distance between (Bateq and Semoq Beri) tribes of *Orang Asli* in Taman Negara. Results revealed that a total of twenty-one *Orang Asli* individuals contained APO insertion. Whilst, fourteen *Orang Asli* individuals contained FXIIIB insertion. Furthermore, there were significant differences in the *Alu* FXIIIB element compared to the *Alu* APO element of *Orang Asli* population based on the phylogenetic trees construction. It can be concluded that outbreeding might have occurred between the Bateq and Semoq Beri tribes of *Orang Asli* population in Taman Negara. This is because, the genetic distances of *Alu* APO and *Alu* FXIIIB sequences between both tribes are closer to each other. Further study is to be taken up on large population of *Orang Asli* in various geographical areas of Peninsular Malaysia for heterozygosity.

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