

Molecular Phylogeny Confirms The Subspecies Delineation Of The Malayan Siamang (*Symphalangus Syndactylus Continentis*) And The Sumatran Siamang (*Symphalangus Syndactylus Syndactylus*) Based On The Hypervariable Region Of Mitochondrial Dna

ABSTRACT

Siamangs (*Symphalangus syndactylus*) are native to Peninsular Malaysia, Sumatra and southern Thailand and their taxonomical classification at subspecies level remains unclear. Morphologically, two subspecies were proposed as early as 1908 by Thomas namely *Symphalangus s. syndactylus* and *Symphalangus s. continentis*. Thus, this study aims to clarify the Siamang subspecies status, based on mtDNA D-loop sequences. Faecal samples were collected from wild Siamang populations at different localities in Peninsular Malaysia. A 600-bp sequence of the mitochondrial D-loop region was amplified from faecal DNA extracts and analysed along with GenBank sequences representing *Symphalangus sp.*, *Nomascus sp.*, *Hylobates sp.*, *Hoolock sp.* and outgroups (*Pongo pygmaeus*, *Macaca fascicularis* and *Papio papio*). The molecular phylogenetic analysis in this study revealed two distinct clades formed by *S. s. syndactylus* and *S. s. continentis* which supports the previous morphological delineation of the existence of two subspecies. Biogeographical analysis indicated that the Sumatran population lineage was split from the Peninsular Malaysian population lineage and a diversification occurred in the Pliocene era (~ 3.12 MYA) through southward expansion. This postulation was supported by the molecular clock, which illustrated that the Peninsular Malaysian population (~ 1.92 MYA) diverged earlier than the Sumatran population (~ 1.85 MYA). This is the first study to use a molecular approach to validate the subspecies statuses of *S. s. syndactylus* and *S. s. continentis*. This finding will be useful for conservation management, for example, during Siamang translocation and investigations into illegal pet trade and forensics involving Malayan and Sumatran Siamangs.