

## Genetic diversity of macaques in Sri Lanka

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Sri Lanka has an endemic species of macaques, the toque macaque (*Macaca sinica*). Three sister species (*M. radiata*, *M. assamensis* and *M. thibetana*) are grouped all into the *sinica* species group and cover a broad distribution range outside Sri Lanka including the Indian subcontinent, Himalaya, Indochina and China. Evolution and phylogeny of the *sinica* species group is controversial. Contrasting its geographical proximity, the bonnet macaque (*M. radiata*) in India is not the closest relative of toque macaques, instead an eastern subspecies of the Assamese macaque (*M. assamensis assamensis*) revealed proximity to toque macaques in their mitochondrial DNA phylogeny. This interspecies genetic diversity of the macaque species on Sri Lanka from a counterpart in India suggests a phylogeographically deep segregation of its ancestors, irrelevant to the last separation of the island from the Indian subcontinent about 7,000 years ago.

Intraspecific diversity of toque macaques was intensively investigated by a population genetic study of blood protein polymorphisms (Shotake et al. 1991). The study revealed a high degree of genetic variability within groups and a low degree of genetic differentiation between groups. Total protein gene diversity of toque macaques is higher than those in other insular species of macaques in Asia. The species seems to possess less structured populations in the island and shows low genetic diversity between groups, probably due to frequent exchange of genes by adult male transfer.

My colleagues, Charmalie Nahallage and Michael Huffman and I are conducting a population genetic study on the phylogeography of toque macaques. We use a non-invasive sampling method for investigation of mitochondrial DNA (mtDNA) variation in the wild. Results of our preliminary study indicate weak association of the mtDNA differentiation with geographical distribution of the habitats and suggest complexity in historical change of distribution ranges of ancestors.