"*Evaluation of wildlife species diversity in Taman Negara (National Parks) by using DNA information from Leeches*"

Ms. Kayal Vizi Karuppannan
Mr. Jeffrine Rovie Ryan Japning
Mr. Frankie Thomas Sitam
Ex-Situ Conservation Division
Department of Wildlife & National Parks, Peninsular Malaysia

Micro predator blood-meal DNA can be utilized as a tool to evaluate the presence of a wildlife species in a particular forest area. There were many micro predators such as leeches, mosquitoes, flies, and ticks were the potential source of wildlife DNA and for this particular study we choose leech as study specimen. We conducted a non-invasive study using 100 land leech specimens (Family: Haemadipsidae) from Taman Negara Kuala Tahan, Taman Negara Terengganu and Belum-Temenggor Forest Complex to identify their prey species especially wildlife species. All the specimens were preserved in molecular grade absolute ethanol prior to DNA extraction. DNA extraction was done according to manufactures instruction. Cytochrome *b* primer was used for PCR amplification. Purified PCR products including negative extraction and PCR control were sent for Sanger sequencing and few selected samples for cloning as comparisons. We managed to identify 12 wildlife species namely Sambar Deer (*Rusa unicolor*), Barking Deer (*Muntiacus muntjak*), Serow (*Capricornis sumatrensis*), Malayan Sun Bear (*Helarctos malayanus*), Asian Golden Cat (*Catopuma temminckii*), Common Palm Civet (*Paradoxurus hermaphroditus*), Jungle Fowl (*Gallus gallus*), Black Crowned Night Heron (*Nycticorax nycticorax*), Wild Boar (*Sus scrofa*), Pale Giant Squirrel (*Ratufa affinis*), Malayan Soft-shelled Turtle (*Amyda cartilaginea*) and Long - tailed Giant Rat (*Leopoldamys sabanus sabanus*). This outcome proves that DNA information carried by every single land leech will answer many questions related to wildlife species diversity in our protected areas and can be a natural bio-indicator. A baseline data from this study were used for designing a wider research activity using similar Invertebrate-derived DNA (iDNA) technique in other protected areas under Department of Wildlife and National Parks (DWNP) 's management authority for more holistic management and conservation plan for wildlife in Peninsular Malaysia.

Keywords: Micro predator; leech; wildlife; Invertebrate-derived DNA, conservation

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