Pertanika J. Trop. Agric. Sci. 36 (2): 115 - 122 (2013)

PERTANIKA JOURNALS

TROPICAL AGRICULTURAL SCIENCE

Journal homepage: http://www.pertanika.upm.edu.my/

Short Communication

Isolation of Mitochondrial Control Region for White-nest Swiftlets (*Aerodramus fuciphagus*) Using Primer Walking Techniques

Goh, W. L.[1], Lim C. K.[2] and Rahman, M. A.[2]*

[1]*Institute of Biological Sciences, Faculty of Science, University of Malaya, 50603 Kuala Lumpur, Malaysia*
[2]*Department of Zoology, Faculty of Resource Science and Technology, Universiti Malaysia Sarawak (UNIMAS), 94300 Kota Samarahan, Sarawak, Malaysia*

ABSTRACT

This paper reports on a novel DNA sequence located at the mitochondrial control region (D-loop) of the white-nest swiftlet (*Aerodramus fuciphagus*). This hypervariable control region sequence is potentially useful for studying genetic relationships among the white-nest swiftlet populations. The isolation of the control region involves a primer walking technique, which is simple, fast and cost-effective. In this study, the variability of the control region was assessed and discussed.

Keywords: Aerodramus fuciphagus, control region, Mitochondrial DNA, primer walking

INTRODUCTION

The most commonly used DNA markers in the molecular studies of swiftlets are cytochrome *b* of mitochondrial DNA (mtDNA; Lee *et al*., 1996; Thomassen *et al*., 2003; Price *et al*., 2004; Thomessen *et al*., 2005; Aowphol *et al*., 2008) and NADH dehydrogenase sub-unit 2 of mtDNA (NADH-2; Price *et al*., 2004; Thomassen *et al*., 2005; Aowphol *et al*., 2008). In particular, nuclear 12S and beta-fibrinogen intron regions were sequenced by Thomassen *et al*. (2005), whereas a microsatellite genotyping method was established by Aowphol *et al*. (2008). Notably, most of these markers were not specially developed for resolving the relationships of the swiftlets at lower taxonomic-levels. A non-coding region

ARTICLE INFO

Article history:
Received: 20 June 2011
Accepted: 21 February 2012

E-mail addresses:
weilim_goh@yahoo.com (Goh, W. L.),
cklim@frst.unimas.my (Lim C. K.),
rmustafa@frst.unimas.my (Rahman, M. A.)
* Corresponding author

ISSN: 1511-3701