

Review Article

Enhancers in Proboscis Monkey: A Primer

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ABSTRACT

Enhancers are indispensable elements in various developmental stages, orchestrating numerous biological processes via the elevation of gene expression with the aid of transcription factors. Enhancer variations have been linked to various onset of genetic diseases, highlighting their equal importance as the coding regions in the genome. Despite the first enhancer, SV40 been discovered four decades ago, the progress in enhancer identification and characterization is still in its infancy. As more genome sequences are made available, especially from that of the non-human primates, we can finally study the enhancer landscape of these primates that differs evolutionarily from that of human. One interesting genome to investigate is that of the proboscis monkey as it is deemed as one of the most ancient primates alive to date with unique morphological and dietary characteristics; it is also one of the IUCN endangered species with the strong demands for immediate conservation. In this review, we provide some justifications and considerations of selecting the proboscis monkey as a model for enhancer landscape discovery. It is hoped that more conservation research and protective measures can come in time to prevent this species from extinction.

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INTRODUCTION

Enhancer, as its name suggests, is an essential regulatory DNA element capable of enhancing and elevating gene transcription and all other processes that