INVESTIGATION OF PTEROPUS ALECTO IFITM3 GENES AS A VIRAL RESTRICTION FACTOR WITH HSV-1 INFECTIONS

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Herpes Simplex Virus type 1 (HSV-1) is one of the most common infections worldwide, affecting 3.7 billion people. Like many types of viruses, HSV-1 can be inhibited by viral restriction factors, proteins expressed in host cells in response to viral infection. Human interferon induced transmembrane protein 3 (IFITM3) has been found to inhibit a variety of human viruses including HSV-1 and Human Immunodeficiency virus (HIV). Research has shown that non-primate mammalian restriction factors have shown to be effective against human viruses, which begs the question, how extensive is this effect? The specific species we chose was the flying fox because of their active interferon system and ability to host many mammalian viruses with minimal negative outcomes. To investigate this we are going to overexpress the *Pteropus alecto* IFITM3 proteins in vero cells and subsequently infect the cells to measure the restrictive effects of flying fox IFITM3. To our knowledge there has been no research on this topic regarding *Pteropus alecto* IFITM3 and HSV-1. We anticipate that because of their similarities to human IFITM3 proteins they will maintain their restrictive abilities against HSV-1 due to their protein sequence similarity.