

## **Preliminary data on the expression profiles of microRNAs in dengue patients infected with DENV-1 serotype**

### **ABSTRACT**

Introduction: MicroRNAs (miRNAs) are highly promising as biomarkers and are an attractive tool for novel therapeutic approaches. The expression of miRNAs in patient's serum has been broadly used as biomarker candidates against viral infection. Circulatory miRNAs can directly regulate viral genes either by promoting or repressing viral replications. Objectives: Thus, we attempted to identify serotype specific miRNA in patients with dengue infection. For the purpose of this paper, we present the expression profile of microRNAs in Dengue Serotype 1 (DENV-1) patients. Methodology: A total of 40 patients with a single DENV-1 serotype infection were identified along with 40 healthy controls. Serum RNAs was isolated from these subjects and subjected to high-throughput small RNA (sRNA) sequencing. This research was approved by the Medical Research Ethics Committee (MREC), Ministry of Health, Malaysia (No. NMRR-18-2782-42195). Result: After, trimming and quality control of the reads, we shortlisted 35 miRNAs candidates that were promising for downstream analysis. From this, 24 miRNAs was upregulated in DENV-1 while, 11 was downregulated in the sera of patients. Conclusion: Differential expression of microRNA may serve as reliable biomarkers of disease severity during early stages of dengue infection.