# VIRTUAL MEDICAL RESEARCH SYMPOSIUM

Organised by Kulliyyah of Medicine IIUM

## MEDICAL RESEARCH DURING PANDEMIC: ADAPTING & INNOVATING IN ADVERSITY

**14TH DECEMBER 2021**

# ABSTRACT BOOK

24 YEARS
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# ABSTRACTS

## ORAL PRESENTATIONS

## PNC130
## THE miRNAs EXPRESSION PROFILE IN ACUTE MYOCARDIAL INFARCTION OF YOUNG ADULTS

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**Introduction:** Acute myocardial infarction (AMI) is the most severe manifestation of coronary heart disease where Malaysians are getting AMI at younger age compared to well-developed countries. MicroRNAs (miRNAs) are short, non-coding RNAs that play important regulatory roles in development of human pathologies. **Materials and Methods:** This study investigated the miRNA expression profile in 3 Controls, 3 Young AMI and 3 Mature AMI patients with matching criteria, using RNA sequencing, followed by Gene Ontology (GO) and Kyoto Encyclopedia of Genes and Genomes (KEGG) enrichment analyses. **Results:** A total of 1599 miRNAs were differentially expressed in AMI patients compared to Controls, of which 1288 miRNAs were upregulated, and 311 miRNAs were downregulated. When miRNA expression profiles of Young AMI patients were compared to Mature AMI patients, a total of 1497 miRNAs were found to be differentially expressed, where 1090 miRNAs were upregulated, and 407 miRNAs were downregulated. The top 5 upregulated miRNAs were miR-552, miR-4446-3p, miR-432-5p, miR-548j-5p and miR-219; while the top 5 down regulated were miR-16, miR-1064, miR-431, miR-790 and miR-1177. For these 1497 differentially expressed miRNAs, 34,195 target genes were predicted by GO analysis. The enrichment analysis revealed 11,199 involved in biological processes, 10,984 in molecular functions and 12,012 in cellular components. Target genes of differently expressed miRNAs that were mapped in signal transduction pathway KEGG, revealed that 346 classes were enriched. **Conclusion:** Small RNA sequencing discovered previously unknown miRNAs and suggested that these miRNAs regulatory mechanisms on gene expression are closely involved in Young AMI. This could be a foundation study that requires further elaboration.

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