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**Hsa-miR-4732-3p as a new factor for monitoring treatment success to imatinib in Chronic Myeloid Leukaemia**

1Aliza Mohd Yacob\*; 2Chang Kian Meng; 3Nor Asiah Muhammad; 1Yuslina Mat Yusoff; 1Latifah Ibrahim and 1Zubaidah Zakaria.

1Institute for Medical Research, Kuala Lumpur; 2Ampang Hospital, Selangor; 3Institute for Public Health, Kuala Lumpur.

**ABSTRACT**

Chronic Myeloid Leukaemia (CML) occurs mostly in adult and characterized by the presence of BCR-ABL1 transcripts in peripheral blood or bone marrow in more than 90% of CML patients. CML is treated with imatinib, a first generation of tyrosine kinase inhibitor (TKI) as first-line therapy or second generation TKI. Non responders will be treated with the subsequent TKIs. Studies have shown that microRNAs (miRNAs) are linked to suppression or progression of cancer. Therefore the objective of this study was to identify suitable miRNA for monitoring treatment success to imatinib treatment. MiRNAs from adult Malay males of normal control, CML patient responding and not responding to imatinib were purified from 2.5ml peripheral blood using PAXgene® Blood miRNA Kit (PreAnalytiX). Libraries were prepared using Illumina® TruSeq Small RNA kit (illumina) and profiled using Next Generation Sequencing on illumina Miseq. Alignment was carried out using BaseSpace (illumina). Hsa-miR-4732-3p was expressed two times more in normal control than in CML patient responding to imatinib treatment but not detected in CML patient not responding to imatinib treatment. These indicated increasing level of hsa-miR-4732-3p represents the declining of BCR-ABL1 transcripts level and could be used as a new factor for monitoring treatment success to imatinib in CML.