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**Overexpression of Leucine-rich alpha-2-glycoprotein 1 (LRG1) Enhances Epithelial-Mesenchymal Transition, Cell Migration and Invasion in Colorectal Cancer**

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**ABSTRACT**

Colorectal cancer (CRC) remains as the leading cause of cancer-related deaths worldwide despite the improvement in clinical management. We have previously identified significant upregulation of LRG1 in the sera of CRC patients, particularly in the advanced stage. A crosscheck on the endogenous expression in the CRC cells revealed high expression of this protein and interestingly, increased with the advancing stage. Thus, we aim to investigate the role of LRG1 in CRC and the possible signaling pathways involved. Transduction of lentiviral fully sequenced human open reading frames (ORFs) construct into HT29 was carried out with 25μg/ml Blasticidin S selection for exogenous gene overexpression study. Cell-based assays were performed to evaluate the functional activities and RqPCR for determining the signaling pathway activity. Overexpression of LRG1 in HT29 increased cell proliferation by activation of Ki67 mRNA (p<0.01) and cell migration via ZEB1 (p<0.05). The level of TGF-β mRNA was also increased with overexpression of LRG1 (p<0.05). In conclusion, LRG1 is a promising marker for CRC and its overexpression may pose higher risk of metastasis via collective proliferation, migration and invasion possibly through the regulation of TGF-β pathway.