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Tumor Suppressor miRNA Mimic-Based Treatment as a Potential Approach Targets Oncogenes in Colon Rectal Cancer**Amr M. Abdelhamid***Biochemistry Department, Faculty of Pharmacy, October University for Modern Sciences and Arts (MSA), Egypt*

Colon rectal cancer (CRC) is the second frequently diagnosed cancer in females and the third in males, in 2015 nearly 835,000 deaths and 1.65 million new cases were reported. Therefore, there is urgently need to improve the early molecular diagnosis of CRC. Tumor progression has been associated with one of receptor tyrosine kinases family which are Eph receptors and their ephrin ligands, they control numerous biological processes in the development of organs. Amongst these Eph receptors, EPHA7 receptor has concerned increasing consideration in tumor research. Several molecular mechanisms associated with down regulation of EPHA7-induced cell apoptosis. The regulatory mechanisms of oncomiR and tumour suppressor microRNAs play a critical role in carcinogenesis events. Increased expression of oncomiR in cancerous cells inhibits tumour suppressor genes, while decreased expression of tumour suppressor miRNAs potentially enhances the expression of oncogenes. Furthermore, in CRC a downstream molecule of microRNA-944 was recognised as the metastasis-associated in colon cancer-1. The aim of this study was to explore the expression profile of miR-944 and its target gene EPHA7 in the serum of CRC patients. CRC patients, adenomatous polyps (AP) patients, and healthy controls were included. Serum miR-944 was downregulated while serum EPHA7 was upregulated in CRC and AP patients versus controls. In conclusion: miRNA-944 and EPHA7 are key genes involved in the development of CRC and are considered novel potential non-invasive diagnostic biomarkers. The miRNA-944 mimics, which are synthetic 18–22 oligonucleotides identical to the endogenous miRNAs, target the same oncogene mRNA (EPHA7), causing its degradation and significantly down-regulating expression levels of Bcl-2 (anti apoptotic protein) and Bax expression levels (proapoptotic protein).

Biography

Amr M. Abdelhamid is working as an Associate Professor of Biochemistry & Molecular Biology at MSA University with 15 years of cumulative work experience in academic and research fields. Dr. Amr earned his Master's Degree at the Faculty of Pharmacy, Cairo University in 2014 and holds his PhD from the Faculty of Pharmacy, Suez Canal University in 2017. He is also Microsoft certified in Azur AI Fundamentals and Machine Learning expert in 2021. His research interests are reflected in his wide range of publications in various international journals, with an interest in molecular diagnosis, SNPs, and non-coding RNAs as diagnostic biomarkers, prognostic tools, and therapeutic targets in many types of cancer. Dr. Amr is an academic scientific reviewer for many international journals. He supervised 15 graduation projects and research thesis, having 14 publications, and attended 20 international and national conferences, with a Scopus h index of 7.

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