

## عنوان مقاله:

Exosome-Encapsulated MicroRNAs As Potential Circulating Biomarkers In Colon Cancer

## محل انتشار:

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## خلاصه مقاله:

Colorectal cancer (CRC) is third leading cause of cancer related death worldwide. Despite advances in detection of prognostic and diagnostic biomarker, only a very small number of markers have been launched. Recently microRNAs (miRNA) are emerged as a potential markers in different tumor types, including CRC. Exosome-encapsulated microRNAs are being suggested as a new class novel biomarkers as diagnostic and predictive markers in colorectal cancer. These particles are released from many cell types into the extracellular space upon fusion of multivesicular bodies (MVB) with the plasma membrane. MVBs are in fact late endosomes that carry intraluminal endosomal vesicles. They contain a wide variety of information, including proteins, lipids, RNAs, nontranscribed RNAs, miRNAs, which can be circulated in various body fluids (e.g., blood, saliva, ascites, urine). Exosomes can be taken up by neighbouring or distant cells and thereby modulate the function of recipient cells and play a key role in disease progression or facilitate metastasis in cancers. The aim of current review is to give an overview about origin and trafficking of exosomes between cells, techniques to isolate exosomal microRNAs as well as the potential applications of exosome-encapsulated microRNAs as diagnostic markers in clinical settings in colorectal cancer. Therefore, exosomes may consider a house of disease-specific miRNA signature that can control many aspects of human physiological status and are therefore potentially provides a useful information for prognosis of patients than other circulating miRNAs. There is growing body of evidence showing the prognostic and diagnostic value of some exosomal miRNAs in colon cancer (e.g., miR-150, miR-21, miR-192, let-7a, miR-223, and miR-23a). These findings provide a novel insight on novel application of these markers as novel non-invasive biomarkers for early detection and risk assessment patients with colorectal cancer, although further investigations in larger population are required to explore the clinical utility of exosomal miRNAs in CRC patients.

## کلمات کلیدی:

