

Biomarkers for early detection of Colorectal Cancer (CRC)

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Technology description

Overview

In 2018, colorectal cancer (CRC) is expected to cause 50,000 deaths in the United States. About 1 in 22 (4.49%) men and 1 in 24 (4.15%) women are at a lifetime risk of developing CRC. CRC progresses through five stages: polyp, in situ, local, regional, and distant. If detected at the local stage, the 5-year survival rate of a CRC patient will be greater than 92% due to slow progression from a detectable precancerous lesion to CRC. However, current conventional screening processes have several limitations including invasiveness. Also, there are no available screening procedures available to detect CRC prior to the polyp stage.

Technology

Inventors at Texas A&M University have developed a probe and a diagnostic kit that can diagnose a prognosis of CRC at the pre-polyp stage (The first step in the development of CRC). This technology uses the mechanism which facilitates the transition of colonic epithelial cells from proliferative cells to a differentiated (non-proliferative) stage which enables the prognosis of CRC. The time of detection determines the survival rate and not the treatment when dealing with CRC and hence, this technology has the potential to save thousands of lives.

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Research Interests

Microbiology

Immunology

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Research Interests

Microbiology

Immunology

Publications

1. Jayshree Mishra, Jugal Kishore Das, and Narendra Kumar "Janus kinase-3 regulates adherens junction and epithelial mesenchymal transition through Beta-catenin." [J Biol Chem . 2017.](#)
2. Mishra, J., Verma, R. K., Alpini, G., Meng, F., and Kumar, N. "Role of janus kinase 3 in mucosal differentiation and predisposition to colitis." [J Biol Chem. 2013.](#)

Institution

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