CELL SIGNALING THROUGH MUCINS IN CANCER

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ABSTRACT

The members of mucins family are heavily glycosylated high molecular weight proteins which are primarily involved in the protection and lubrication of luminal epithelial surfaces. Mucins are also known to be aberrantly expressed in cancer cells. Their role as signaling molecules, however, has emerged only in past decade. The transmembrane mucins are involved in signal transduction, through extracellular domain-mediated ligand binding or by interacting with growth factors receptors. Additionally, the cytoplasmic tail of certain mucins such as MUC1 is involved in several signaling pathways, including Ras, beta-catenin, p53 and estrogen receptor pathways. Recently, MUC1 expression was found to be localized on mitochondrial membranes that initiated a debate if mucins can alter the apoptotic pathway in cancer cells. The signaling pathways those are modulated by mucins and their possible role in cancer cells will be presented and discussed during the presentation.