Current status of mucins in the diagnosis and therapy of cancer. [1]

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[2]

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Abstract	Mucins are the most abundant high molecular weight glycoproteins in mucus. Their nature and glycosylation content dictates the biochemical and biophysical properties of viscoelastic secretions, pointing out an important role in diverse biological functions, such as differentiation, cell adhesions, immune responses, and cell signaling. Mucins are expressed in tubular organs by specialized epithelial cells in the body. Their aberrant expression is well documented in a variety of inflammatory or malignant diseases. From a prognosis point of view, their expression and alterations in glycosylation are associated with the development and progression of malignant diseases. Therefore, mucins can be used as valuable markers to distinguish between normal and disease conditions. Indeed, this alteration in glycosylation patterns generates several epitopes in the oligosaccharide side chains that can be used as diagnostic and/or prognostic markers. Furthermore, these characteristic tumor-associated epitopes are extensively used as appropriate immunotargets of malignant epithelial cells. Therefore, in an effort to detect and treat cancer at the earliest stage possible, mucins are analyzed as potential markers of disease for diagnosis, progression, and for therapeutic purposes. In this review, we focused on the current status of the distribution of mucins in normal and pathologic conditions and their clinical use both in cancer diagnosis and therapeutics treatments.
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