

STRUCTURAL INSIGHTS INTO MUCIN O-GLYCOSYLATION AND RECOGNITION

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Mucin glycoproteins, involved in fundamental biological processes in health and disease, have multiple sites of glycosylation decorated with complex O-GalNAc glycans [1]. Altered regulation of several glycosyltransferases (GTs) is a hallmark feature of cancer, which yields mucin-based tumour-associated glycans key players in cancer cell growth and tumour immune surveillance [2]. Specifically, lectins from immune system interact with mucin-based tumour-associated glycans strongly modulating immune responses in cancer [3].

In this communication, new structural insights into the molecular mechanism of mucin-1 (MUC1) O-glycosylation will be reported. Through the concerted integration of biophysical and structural biology protocols with focus on NMR spectroscopy the MUC1 O-glycosylation by GalNAcTs, C1GaT1 and ST6GalNAc-I will be described [4,5,6]. In addition, the molecular basis of tumour-associated these MUC1 O-glycans recognition by lectins from immune system will be highlighted [7].

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