MS29-P16 Changes of LLT1, a ligand for human NKR-P1, with varied glycosylation and crystallization conditions

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Natural killer (NK) cells are a type of lymphocytes which kill tumor, virally infected or stressed cells. Decision to kill a cell is made as a result of balance of signals from plenty of activating and inhibitory receptors on surface of the natural killer cells. LLT1 is a ligand expressed primarily on activated lymphocytes (including NK cells itself). It is a binding partner for NKR-P1, receptor on surface of NK cells. Both NKR-P1 and LLT1 have an extracellular part of C-type lectin like (CTL) fold. Receptors and ligands with CTL fold have not been yet excessively studied and their interactions are not still understood.

Here we would like to present four crystal structures of LLT1 which we have recently published [1]. LLT1 with homogenous $GlcNAc_2Man_5$ glycosylation was expressed in HEK293S GnTI$^-$ cells [2]. The four LLT1 structures differ by its oligomeric state (monomeric, dimeric and hexameric [three dimers in compact packing]) under various pH. Monomeric and dimeric LLT1 crystal structures originate from protein deglycosylated after the first GlcNAc, while the hexameric form corresponds to LLT1 with the original $GlcNAc_2Man_5$ glycosylation. The poster will present types of crystal interactions leading to formation of the four crystal structures.

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[1] Skálová *et al.*, Acta Cryst., 2015, D71, 578-591. (Open access)

[2] Bláha *et al.*, Protein Expres. Purif. 2015, 109, 7-13.

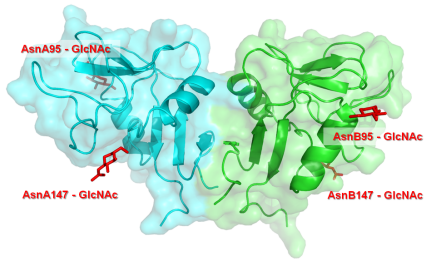

Figure 1. Structure of dimeric LLT1 with denoted positions of glycosylation sites.

Keywords: LLT1, C-type lectin like, NK receptors