Natural killer (NK) cells are a type of lymphocytes able to kill tumour and virally infected cells. Human NKR-P1 is one of the plenty of receptors anchored in the membrane of the cell and LLT1 is its ligand on a partner cell. Both NKR-P1 and LLT1 have extracellular part with C-type lectin like fold.

The extracellular domains of NKR-P1 and LLT1 have been expressed and characterised. The crystal structures of LLT1 oligomers have been published and structures of NKR-P1 and NKR-P1:LLT1 have been deposited. We discovered that NKR-P1 and LLT1 form a chain in the crystal structure of the NKR-P1:LLT1 complex. In order to study the form of the interaction of NKR-P1 with LLT1 in solution, we have performed small angle X-ray scattering coupled with size exclusion chromatography (SEC-SAXS). The SEC-SAXS intensity curve shows two distinct peaks, the smaller one corresponding to higher oligomers and the larger one corresponding basically to the NKR-P1:LLT1 complex. However, deeper analysis showed that in fact, each point of the SEC-SAXS curve corresponded to a combination of several oligomeric states.


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