

ABSTRACT

Natural killer cells (NK cells) are one of the basic elements of innate immunity. They play a key role in immune response against virus-infected, cancerous or otherwise stressed cells. NK cells express surface activating and inhibitory receptors. Activating receptors trigger cytotoxic mechanisms that lead to the target cell's apoptosis. Inhibitory receptors provide cellular tolerance. The balance between these receptor signals determines the resultant NK cell response to the target cell.

C-type lectin-like receptors include the activating receptor NKp80 and its ligand AICL. AICL is a myeloid-specific activating receptor expressed on tumor cells. The NKp80:AICL complex that assists in the cytolysis of malignant myeloid cells is being studied in the context of cancer immunotherapy.

This bachelor thesis describes the preparation of vectors containing genes encoding AICL expression constructs, and the subsequent production of proteins in the human embryonic renal cell line (HEK293S GnTI⁻). The expression constructs contain the extracellular domain of AICL, TEV protease site and Fc fragment. Two different constructs were prepared – one containing the native AICL sequence and the other carrying C87S mutation.