ABSTRACT

NK cells are a component of innate immunity system, which is derived from lymphoid progenitor. By a sophisticated receptor repertoire, which is expressed on their surface, they provide a surveillance against pathogenic, virus infected or tumour cells. Simultaneously they produce cytokines, thereby are involved in adaptive immune response. This work is focused on the study of structure of mice soluble mNkr–p1a isoform. Recently this short isoform was identified at the transcriptional level by a member of our laboratory and it is designated as *isoform 2*. The aim was to produce mNkr–p1a iso2 protein in the prokaryotic expression system and to perform its renaturation and purification *in vitro*. In the next phase of work, the obtained product was analyzed by the mass spectrometry methods. Recieved results made us think about that our protein is in unfolded state. This assumption was refuted by following biophysical methods, nuclear magnetic resonance, circular dichroism and dynamic light scattering measurement.

Keywords: NK cells
Receptor mNkr – p1a
Short isoform mNkr – p1a iso2
Alternative splicing
Protein biosynthesis
Recombinant protein production
Protein purification
Mass spectrometry
Disulfide bond
Chemical cross–linking
NMR, CD, DLS