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New protein constructs from KLRB1 superfamily for immunologic and structural research

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Natural Killer (NK) cells represent a component of innate immunity. These large granular lymphocytes play an important role in defense against viruses, parasites, tumors, etc. Many molecular mechanisms that participate in their activity have been revealed. Vast majority of structure-function studies of C-type lectin-like (CTL) NK cell receptors have used recombinant extracellular domains produced in *E. coli* after successful refolding. Minority of the proteins have been produced in eukaryotic expression systems that are able to perform post-translational modifications. Current studies of CTL receptors (e.g. members of the Ly49 class) have shown that extension of constructs usually limited to compact CTL domain may lead to novel structural observations and new mechanisms of binding of the receptors. Our previous research of KLRB1 superfamily was also limited to analysis of short domain-only proteins produced in *E. coli*. We have currently produced several variants of receptors from KLRB1 superfamily that differ in chain length and amino acid sequence in various protein expression systems. Our aim is step-by-step development and testing of methods for production of complete NK cell receptors for thorough analysis using wide scale of characterization measurements including structure-function studies.

Biography

Petr Kolenko has completed his PhD at the age of 27 years at the Czech Technical University. He spent more than two years as a Post-doc at the Institute of Biochemistry and Biotechnology, MLU, Halle, Germany. He spent half a year in Birmingham (Aston University), UK (second Postdoctoral stage). He has published 14 papers in reputed journals.

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