



MEETING ABSTRACT

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# In vitro assembly of xenotropic murine leukemia virus-related virus CA-NC protein

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Using *in vitro* expression/assembly system we studied the formation of virus-like particles Xenotropic Murine Leukemia Virus-related virus (XMRV). XMRV is novel human gammaretrovirus discovered in association with human prostate tumors. The genome organization is typical for gammaretroviruses consisting of two overlapping ORFs coding for Gag-Pro-Pol and Env polyproteins. The predicted Gag polyprotein consists of 536 amino acids and is separated from the Pro-Pol sequence by UAG stop codon.

Based on the amino acids similarities between MLV and XMRV Gag polyproteins, we designed primers bordering CA-NC region of Gag. Resulting PCR fragment was cloned into pET22b vector for expression of CA-NC in *E. coli*. We found that purified XMRV full-length CANC, starting with the conserved proline residue at the N-terminus of CA, was not able to assemble into particles. However, a modification of the N-terminus of CANC (modCANC) enabled formation of spherical particles. Moreover, the negative staining of the *in vitro* assembled particles of XMRV modCANC revealed different organization of protein layers in comparison to CA-NC of M-PMV.

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