# AIDS Research and Human Retroviruses

**Mapping of the Self-Interaction Domains in the Simian Immunodeficiency Virus Gag Polyprotein**

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### ABSTRACT

To gain a better understanding of the assembly process in simian immunodeficiency virus (SIV), we first established the conditions under which recombinant SIV Gag lacking the C-terminal p6 domain (SIV GagΔp6) assembled *in vitro* into spherical particles. Based on the full multimerization capacity of SIV GagΔp6, and to identify the Gag sequences involved in homotypic interactions, we next developed a pull-down assay in which a panel of histidine-tagged SIV Gag truncation mutants was tested for its ability to associate *in vitro* with GST-SIVGagΔp6. Removal of the nucleocapsid (NC) domain from Gag impaired its ability to interact with GST-SIVGagΔp6. However, this Gag mutant consisting of the matrix (MA) and capsid (CA) domains still retained 50% of the wild-type binding activity. Truncation of SIV Gag from its N-terminus yielded markedly different results. The Gag region consisting of the CA and NC was significantly more efficient than wild-type Gag at interacting *in vitro*with GST-SIVGagΔp6. Notably, a small Gag subdomain containing the C-terminal third of the CA and the entire NC not only bound to GST-SIVGagΔp6 *in vitro* at wild-type levels, but also associated *in vivo* with full-length Gag and was recruited into extracellular particles. Interestingly, when the mature Gag products were analyzed, the MA and NC interacted with GST-SIVGagΔp6 with efficiencies representing 20% and 40%, respectively, of the wild-type value, whereas the CA failed to bind to GST-SIVGagΔp6, despite being capable of self-associating into multimeric complexes.

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José Affranchino, Silvia González

Viruses. Jan 2014, Vol. 6, No. 1: 264-283

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Silvia A. González, Mónica G. Paladino, José L. Affranchino

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