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PACKAGING OF CELLULAR RNAs IN RETROVIRUS PARTICLES: *ASB-1*

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The assembly of retroviral particles is still efficient in the absence of a packageable viral RNA. The virus-like particles (VLPs) produced in these conditions (named ψ - particles) contain roughly normal amounts of RNA; it is now clear that thousands of cellular mRNAs substitute for the genome in ψ - particles (Muriaux et al., 2001, Rulli et al., 2007). We previously showed that almost all cellular mRNAs were packaged in a non-selective manner in MLV and HIV particles, but a small number of low-abundance mRNA species were greatly enriched in both (Rulli et al., 2007). Remarkably, one mRNA species (*asb-1*) was enriched to the same degree as the genomic RNA. We are interested in determining the mechanism for this highly selective packaging of *asb-1* mRNA. We have now produced 293T cells stably overexpressing a 1.3 kb *asb-1* cDNA. When these cells are transiently transfected with a ψ - MLV plasmid, the *asb-1* mRNA is highly enriched in the released virions, just as with the low-abundance, endogenous *asb-1* mRNA. This enrichment is specific for *asb-1* RNA, as selective packaging of overexpressed *pgk-1* RNA was not observed in a control culture. We are now attempting to identify a “packaging signal” in the *asb-1* RNA.