

A

HIV Gag mimics the Tsg101-recruiting activity of the human Hrs protein.

The HIV-1 **Gag protein** recruits the cellular factor **Tsg101** to facilitate the final stages of virus budding. A conserved P(S/T)AP tetrapeptide **motif** within **Gag** (the "late **domain**") binds directly to the NH2-terminal **ubiquitin E2 variant (UEV)** domain of **Tsg101**. In the cell, **Tsg101** is required for biogenesis of vesicles that bud into the lumen of late endosomal compartments called multivesicular bodies (MVBs). However, the mechanism by which **Tsg101** is recruited from the cytoplasm onto the endosomal **membrane** has not been known. Now, we report that **Tsg101** binds the COOH-terminal region of the endosomal **protein** hepatocyte growth factor-regulated tyrosine **kinase** substrate (Hrs; residues 222-777). This interaction is mediated, in part, by binding of the **Tsg101 UEV** domain to the Hrs 348PSAP351 motif. Importantly, Hrs222-777 can recruit **Tsg101** and rescue the budding of virus-like **Gag** particles that are missing native late domains. These observations indicate that Hrs normally functions to recruit **Tsg101** to the endosomal **membrane**. HIV-1 **Gag** apparently mimics this Hrs activity, and thereby usurps **Tsg101** and other components of the MVB vesicle fission machinery to facilitate viral budding.

Tracking Status: Not Reviewed

Annotate

B

Message

1-DBid *NP_033403*

2-Matches RHASSP ? *true*

3-Match Indices *Total = 1 : 315*

4-Match Sequences *RHASSP*

5- Residue Position is accurate *true*

6- Residue Position offset = *0false*

7-Seq

*mptpsassppkqgfravseqdtkqaeavtsprfigrrqsliedarkereaaaaaaaaav
asaepgnpleavvfeardgnavinllfsirgkpslsralkvfetfeakihhietrpaq
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kgyathacrehleaqllerycgyredsipqledvshflkertgfqirpvagllsardf
laslafvrfqctqy**RHASSP**mspepdchellghvpmiaartfaafsqdiglasgas
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egvqdelhltqalsais*

OK