HCMV, but not HSV, induces a transient interaction between EGFR and αvβ3. Immunoreactivity profile of complexes immunoprecipitated with anti-αvβ3 antibody from HEL cells infected with HCMV or HSV at M.O.I. of 2 and 20 pfu/cell, as indicated. The precipitated products pulled down by anti-αvβ3 were analyzed by immunoblotting using anti-EGFR and anti-β3 antibodies, as indicated.
RhoA signaling is not essential for HCMV entry.
HCMV entry was assayed using HEL cells, pretreated or left untreated with Y27 (10 μM), PP2 (10 μM), and Ly29 (20 μM), as indicated. Cells were incubated with HCMV at 4°C for 1 hr. Virus internalization was initiated by subsequent incubation of cultures at 37°C. The internalized viral DNA molecules were isolated at the indicated time points and measured by real-time PCR. Results are shown as percentages of inhibition as compared to that of control cells without treatments from three independent experiments performed in duplicate. The RhoA inhibitor Y27632 has no evident effect on HCMV entry (solid and open diamonds).
A proposed model for the initiation of HCMV infection: receptor binding and signaling.
A schematic representation of HCMV binding to its receptors, EGFR and αvβ3. Binding to both receptors elicits coordinated and synergistic signaling from lipid rafts, which is required for viral entry. RhoA downregulation, stress fibers disruption, and viral nuclear trafficking. Please see DISCUSSION for details.
Integrin β1 can substitute for β3 in facilitating HCMV infection.
Viral IE1 protein expression in HCMV-infected SW480 and CHO cells transfected with various combinations of plasmids expressing EGFR, integrin αv, β1 or β3 subunit (as indicated) and infected with HCMV at M.O.I. of 2 pfu/cell. The status of EGFR, αv, β1, β3, and the expression of IE1 were detected by immunoblotting. The membrane was reprobed with anti-β-actin antibody to confirm even loading.
Supplementary Figure 5,

Analysis of the purified HCMV virions by SDS-polyacrylamide gel electrophoresis and electron microscopy.


(b) Electron micrographs of purified HCMV virions.