Supplementary Table 1.
List of oHSVs and tumors tested in these studies

oHSV	Insertion	Mouse model	Tumor line	Tumor source
T1012G	GFP	Syngeneic mice	A20 MFC	Murine B lymphoma Murine forestomach carcinoma
T2850	Murine IL-12	Syngeneic mice	B16 A20 MFC MC38	Murine melanoma Murine B lymphoma Murine forestomach carcinoma Murine colon cancer
T3855	Murine IL-12 Murine PD-1 Ab	Syngeneic	MC38 MFC SCC7 B16 A20	Murine colon cancer Murine forestomach carcinoma Murine head and neck squamous cell carcinoma Murine melanoma Murine B lymphoma
T3011	Human IL-12 Human PD-1 Ab	Human PD-1 Syngeneic mice Nude mice	B16 KYSE30	Murine melanoma Human esophageal squamous cell carcinoma

List of recombinants and the inserts are shown in columns 1 and 2. The protocols for construction of recombinant viruses produced in our laboratories have been extensively documented elsewhere [33,34]. Sources of the ORFs encoding human and murine anti PD-1 antibodies and IL-12 are listed in *Materials and Methods*.

Supplementary Table 2.

ELISA detection of expression of IL-12 or PD-1 Ab from T3011, T2850 and T3855 infected cell culture medium

Production of IL-12

oHSV	IL-12 p70 concentration (pg/ml)		Mean +/-SD
T3011	289.91	293.76	291.83 +/-2.72
T2850	303.26	302.18	302.72 +/-0.38
T3855	664.95	655.24	660.1 +/-3.44
Mock	U	U	U

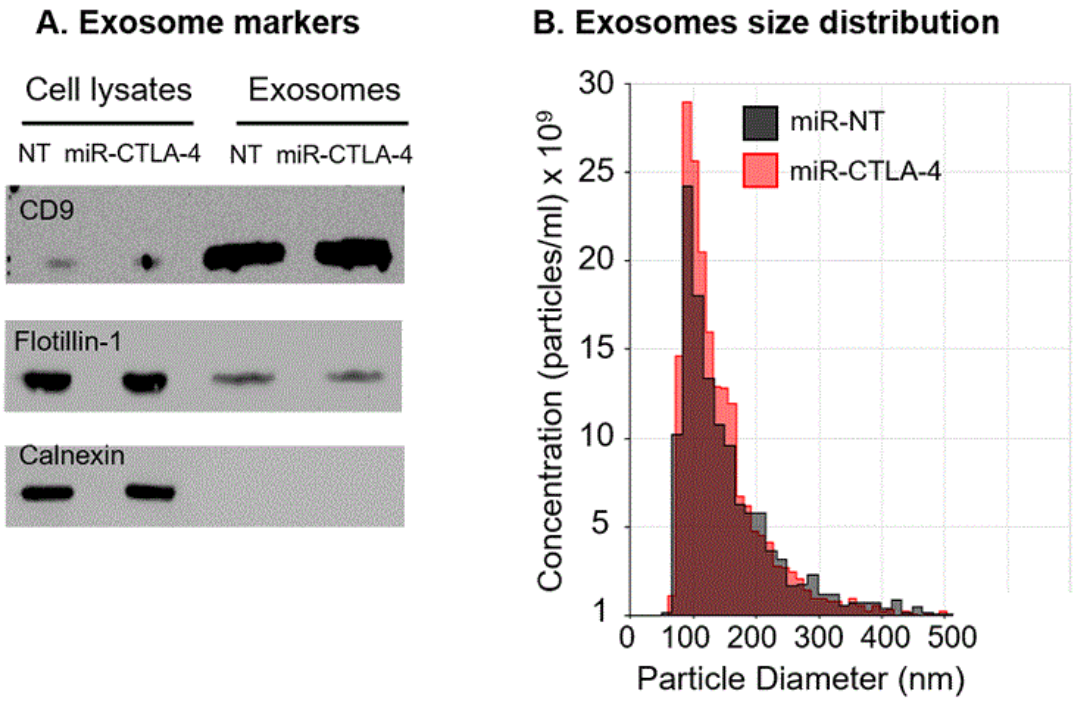
Production of PD-1 Ab

oHSV	PD-1 Ab concentration (pg/ml)		Mean +/-SD
T3011	1146.76	1142.43	1144.6 +/-3.06
T2850	U	U	U
T3855	1739.07	1752.17	1745.62 +/-9.26
Mock	U	U	U

*U: Undetectable

Vero cells grown in T25 flasks containing $2x10^6$ cells were mock infected (Mock) or exposed to 1 pfu of T3011, T2850, or T3855 per cell for 1 h. The inoculum was then replaced with fresh medium. The cell culture media (4 ml per flask) were harvested at 48 h after infection. The accumulated levels of human and mouse IL-12 and PD-1 antibodies were analyzed by ELISA assay described in *Materials and Methods*. The amounts of IL-12 and PD-1 Ab were calculated based on a standard curve generated with purified IL-12 or PD-1 antibodies.

Supplementary Figure 1.



Supplementary Figure 1: Characterization of exosome carrying miR- CTLA-4. HEp-2 cells seeded in T150 flask were transfected with 10 µg of the miR-CTLA-4 plasmid No. 3 or plasmid expresses non-target miRNA (NT) [32] then incubated in serum free medium. After 48 h the medium was collected and the exosomes were purified as described in Materials and Methods.The purified exosomes were subjected to 2 series of analyses. First (PanelA) equal amounts of cells in which the exosomes were produced and equal amounts of exosomes were solubilized, subjected to electrophoresis in a denaturing gel were probed with antibodies to CD9, Flotilin-1 and Calnexin. Typically, the purified exosomes contained CD9, Flotilin-1 but lacked Calnexin. The size distributions of exosomes (Panel B) produced by transfected cells were done as described in detail elsewhere [32].