

# An Oncolytic VSV for Treatment of Brain Cancers

## ► Asset Overview

<b>Product Type</b>	Gene Therapy
<b>Indication</b>	Oncology
<b>Current Stage</b>	Lead Identification/optimization
<b>Target (MoA)</b>	Tumor antigen binding and phagocytosis via genetically reprogrammed macrophage
<b>Brief Description</b>	Lassa-VSV is a novel recombinant oncolytic virus (OV) that can cross the blood brain barrier (BBB) and selectively kill glioma in the brain without the adverse effects of neurotoxicity that is associated with other VSV-related OVs. Lassa-VSV is chimeric VSV where endogenous G protein is replaced with glycoprotein of Lassa.
<b>Organization</b>	Yale University

## ► Differentiation

### □ Unmet Needs

- Most of the oncolytic virus in development for glioma cannot bypass blood brain barriers in efficient manner, thus necessitating the virus to be locally administered following invasive surgical maneuvers
- There is no cure available for brain cancer patients

### □ Innovations

- Both intravenously and intracranially administered Lassa-VSV drastically improves survival of mice harboring glioma without any observable reduction in body weight

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► Key Data

## Folate ligand improves liposomal adenovirus uptake

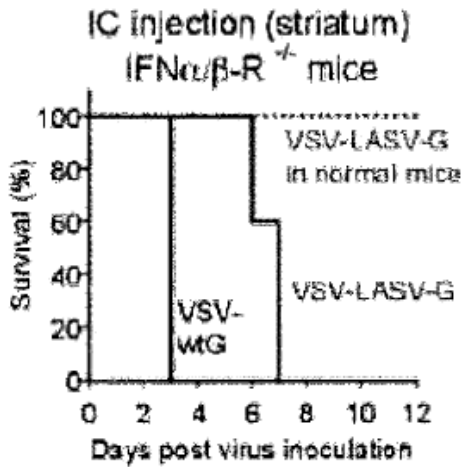


FIG. 3B

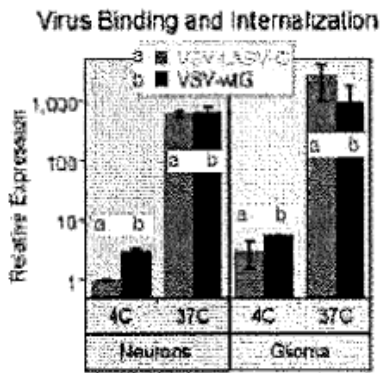


FIG. 3C

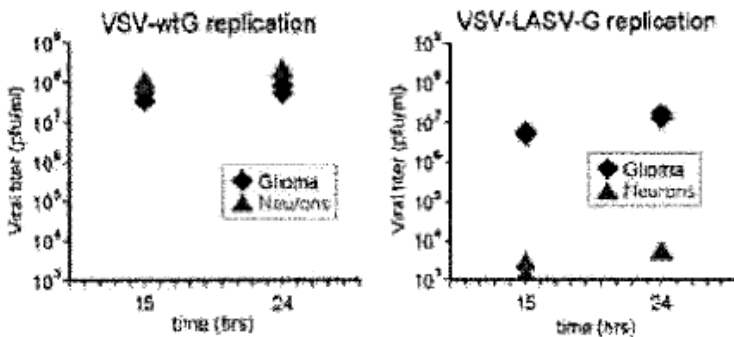


FIG. 3D

FIG. 3E

FIG. 3B is a Kaplan-Meier survival curve showing the % survival of normal mice infected with chimeric Lassa-VSV, and IFN $\alpha/\beta$ -R<sup>-/-</sup> mice infected with VSV-wtG or Lass-VSV (in days post-inoculation) following intracranial inoculation with virus. FIG. 3C is a histogram showing virus binding and internalization (relative expression by qRT-PCR) of VSV-wtG and Lassa-VSV in neurons and glioma cells at 4 and 37 degree Celsius. FIG. 3D is a dot plot showing the quantification of VSV-wtG viral replication in neurons and U87 glioma cells assessed by plaque assay at 15 and 24 hour post injection. FIG. 3E is a dot plot showing the quantification of VSV-LASV-G viral replication in neurons and U87 glioma cells assessed by plaque assay at 15 and 24 hours post injection.

## Folate ligand improves liposomal adenovirus uptake

### Intracranial glioma mouse survival

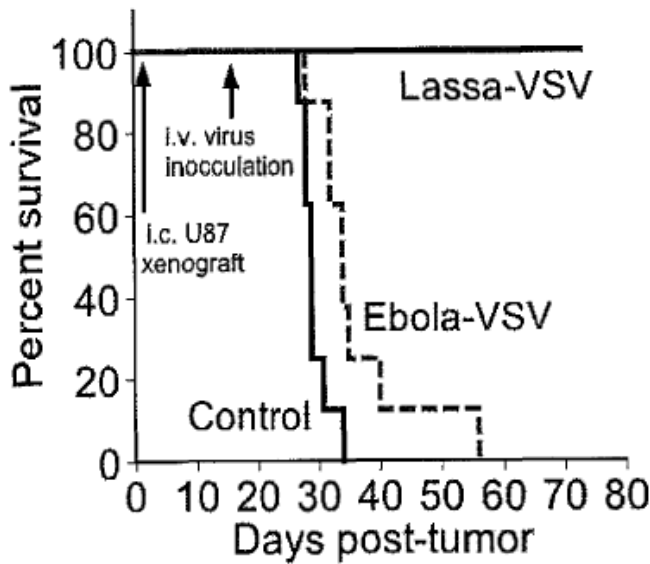
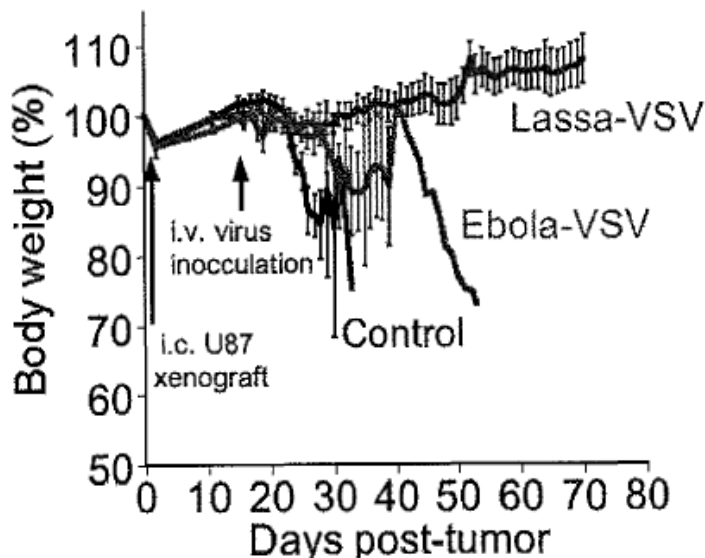


FIG. 4

FIG. 5 is a line graph showing the % body weight of mice following intracranial glioma xenograft and subsequent systemic infection with Lassa-VSV, Ebola-VSV, and uninfected control, respectively, over time (in days post-inoculation).

### Intracranial glioma - mouse survival



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## ► Intellectual Property

<b>Patent No.</b>	US 10179154 B2
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<b>Country</b>	US

## ► Contact Information

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