Creative Biolabs Advances Precision Oncology with Next-Generation Oncolytic Virus Construction Platforms

Creative Biolabs, a leader in viral vector engineering and immunotherapy solutions, has announced the expansion of its oncolytic virus construction platforms.

Creative Biolabs

SHIRLEY, NY, UNITED STATES, February 10, 2026 /EINPresswire.com/ -- This initiative aims to address the growing demand for more specific, potent, and safer virotherapy candidates by integrating advanced synthetic biology with diverse viral backbones.

Engineering the Next Wave of Cancer Immunotherapy
As the field of oncology shifts toward multi-modal treatments, oncolytic viruses (OVs) have emerged as pivotal agents capable of both direct lysing of tumor cells and stimulating systemic anti-tumor immunity. Creative Biolabs' enhanced oncolytic virus construction platform focuses on the precise genetic modification of various viral species to overcome the limitations of traditional therapies, such as low tumor-targeting efficiency and off-target toxicity.
"The complexity of the tumor microenvironment requires a more sophisticated toolkit for viral engineering," stated a Senior Scientist at Creative Biolabs. "Our mission is to provide researchers with highly tailored vectors that not only replicate selectively within malignant cells but also act as carriers for therapeutic transgenes, such as cytokines and immune checkpoint inhibitors."

Specialized Platforms for Adenovirus and HSV Vectors
A key highlight of the expanded services is the specialized optimization of two of the most prominent viral backbones:
Oncolytic Adenovirus Construction: Leveraging its extensive experience in serotype switching

and capsid engineering, Creative Biolabs offers modified adenoviral vectors (e.g., Ad5, Ad24) with enhanced infectivity and reduced pre-existing immunity interference. These constructs often feature engineered E1 regions for tumor-selective replication to maximize safety and cargo capacity.

Oncolytic Herpes Simplex Virus (oHSV): Given the large genome and neuro-privileged nature of HSV, the company has refined its oHSV platform to include precise deletions of ICP34.5 and ICP47 genes. This ensures robust selective replication in tumor cells while maintaining a high safety profile for clinical applications.

Technical FAQ: Addressing Critical Challenges in OV Development
To support researchers in navigating the technical hurdles of virotherapy, Creative Biolabs has synthesized key insights into its development workflow:
How is tumor selectivity ensured? Selectivity is achieved through a dual-gate strategy: utilizing tumor-specific promoters to control essential viral genes and engineering viral surface proteins to recognize tumor-associated antigens (TAAs).

What strategies enhance therapeutic efficacy? Beyond oncolysis, vectors are engineered to express "payloads," such as GM-CSF or bi-specific T-cell engagers (BiTEs), transforming the "cold" tumor microenvironment into an "immunologically hot" one.

Trusted Excellence in Virotherapy Support
The efficacy of these platforms is reflected in the technical feedback from the global research community. One prominent client noted, "The precision of the genetic modifications provided by Creative Biolabs significantly accelerated our preclinical validation phase, particularly in achieving stable transgene expression within the HSV backbone."

By providing end-to-end services from initial design to pilot-scale production, Creative Biolabs continues to empower the global biotechnology sector in its quest to develop the next generation of cancer-fighting agents.

About Creative Biolabs
Creative Biolabs is a premier provider of customized viral vector services, specializing in the design, construction, and optimization of oncolytic viruses for academic and pharmaceutical research.

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