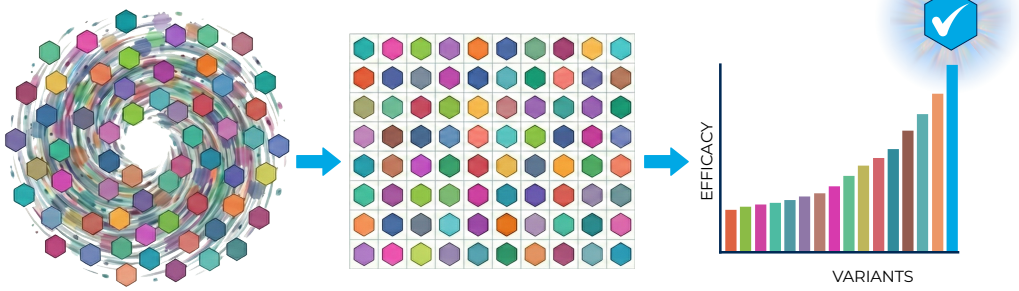
PackGene

Viral Vector Library Services

Don't Guess. Discover.

Don't bet your program on published data and educated guesses.
Get the empirical data you need to move forward—fast.

Genetic medicine is too complex for assumptions. PackGene's Viral Vector Library Services allow you to screen thousands of variants simultaneously — moving you from theoretical predictions to empirical reality in a single study.



Where is your program stuck? We have a library for that.

Stuck on **TARGET ID?**

Functional Genomic Libraries

The Challenge:
You need to identify which gene function drives the disease or validate a specific drug target.

The Solution:
High-Throughput Discovery.

Screen massive pools of **CRISPR sgRNA, shRNA**, or **cDNA** via **AAV or Lentivirus**.

- Model complex diseases
- Screen gene functions
- Validate drug targets

Stuck on **PAYLOAD DESIGN?**

Expression & GOI Libraries

The Challenge:
You have the target, but need the optimal cargo to maximize potency while minimizing toxicity.

The Solution:
Sequence Engineering.

Screen libraries of **splice variants, isoforms, and synthetic promoters.**

- Optimize expression profile
- Improve tissue specificity
- Maximize therapeutic index

Stuck on **DELIVERY?**

AAV Capsid & Lenti Libraries

The Challenge:
Your vector isn't reaching the target tissue, or you need stable integration for dividing cells.

The Solution:
Modality Optimization.

For AAV: Screen multiple capsids to optimize tissue specificity and mitigate immunogenicity.

For Lentivirus: Achieve stable expression in dividing cells or ex-vivo models.

The PackGene Standard: Our Precision Drives Discovery.

<0.1% Mispackaging

Proprietary packaging protocols minimize mismatched capsids, ensuring your NGS data reflects true biological targeting, not manufacturing noise.

>99% Library Coverage

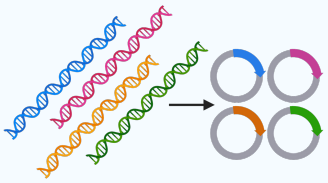
We deliver what we design. A near-perfect representation of theoretical diversity ensures that no potential candidate goes untested.

One-Stop = Speed

From plasmid construction all the way to NGS analysis. We handle the complex manufacturing so you get to the data faster.

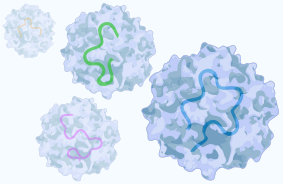
WORKFLOW: From Concept to Candidate in One Screen

Design & Synthesis



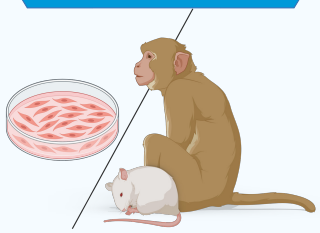
Combinatorial assembly of Plasmid DNA

Viral Packaging



High-titer AAV or LV library production

Screening



In vitro / In vivo assays

NGS & Analysis

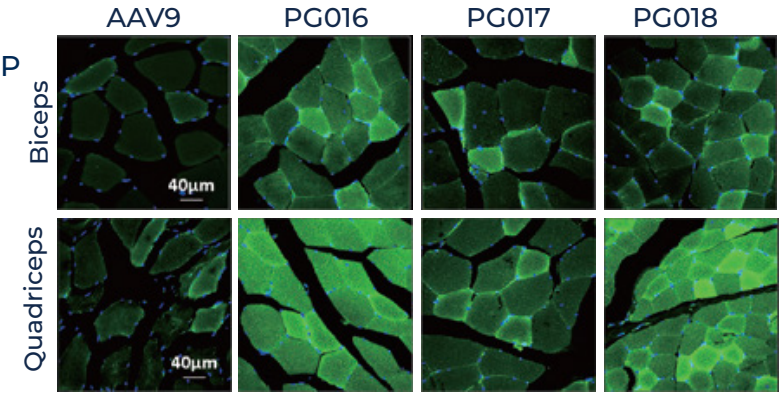
Deconvolution and hit identification

CASE STUDY: Validated in Primates

Identifying novel muscle-targeting capsids in NHP

The Library: Using a peptide-display capsid library, we conducted screening in Cynomolgus monkeys via multiple rounds of AAV injection and tissue extraction.

The Results: We identified three novel capsids that demonstrated significantly enhanced muscle tissue specificity at 28 days post-injection. These variants outperformed the control (AAV9) in Quadriceps and Biceps transduction.

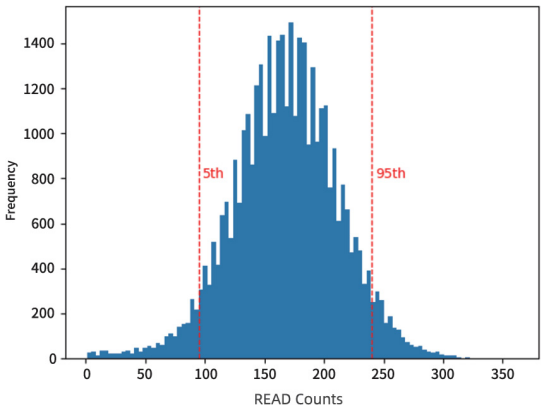


D28 Skeletal Muscle: Novel variants show superior transduction vs. AAV9 control.

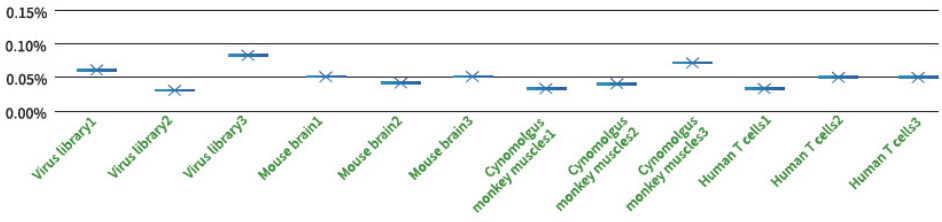
Data Clarity Starts with Manufacturing Quality

In library screening, manufacturing artifacts can look exactly like biological hits.
We engineer out the noise.

Uniformity: The distribution of variant read counts in our plasmid library. The tight, symmetrical bell curve indicates that the vast majority of variants are present in nearly equal numbers, ensuring unbiased screening.



Purity: We spike our library with capsid genes containing early stop codons. Since these cannot form functional capsids on their own, finding them in the viral pool indicates they were 'rescued' by a mismatched capsid (cross-packaging). We consistently maintain this mismatch rate below 0.1%, ensuring that the sequence you discover is the capsid that actually worked.



READY TO DESIGN YOUR LIBRARY?

Partner with the viral vector experts for your next screen.

Request a quote: Visit us www.packgene.com info@packgene.com 1-866-491-7300

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