

### Description

Adeno-Associated Virus Serotype 5 (AAV5) differs from other parvovirus serotypes according to serological and DNA hybridization data, and AAV5 also uses different inverted terminal repeats (ITRs) compared to other AAV serotypes. AAV5 is the most efficient vector for transducing sensory neurons and is good at mediating gene transfer into human and murine airway epithelia. In addition, AAV5 vectors show a higher tropism for both mouse and human dendritic cells than AAV1, AAV2, AAV7, or AAV8.

These AAV particles constitutively express the firefly (*Photinus pyralis*) luciferase and enhanced Green Fluorescent Protein (eGFP) genes connected via a T2A linker, under the control of a CMV promoter. The T2A self-cleaving peptide (derived from *Thosea asigna* virus 2A) leads to the efficient cleavage of the transcript, and expression of luciferase and eGFP as two separate proteins.

### Application(s)

- Use as a positive control for transduction
- Optimize transduction assays and track protein expression over time

### Serotype

Wild-type AAV Serotype 5

### Formulation

AAV5 was produced in HEK293-AAV cells and is supplied in PBS-MK (PBS Magnesium-Potassium) buffer containing 0.01% Pluronic F68.

### Purification

The purity of the AAV particles was confirmed to be greater than 90% by staining with One-Step Lumitein™ UV Protein Gel Stain (Biotium #21005-1L). The purity will vary with each lot; the exact value will be provided with each shipment.

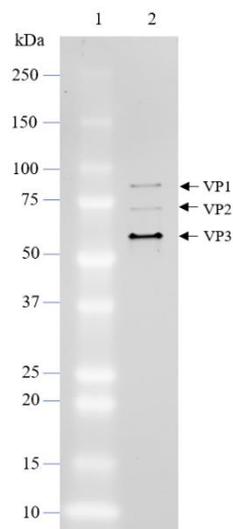


Figure 1. Purified AAV5 Luciferase-eGFP particles.

Staining of a 4-20% SDS-PAGE gel. The protein ladder is in lane 1, and  $2 \times 10^9$  VG (vector genome) of AAV5 was loaded in lane 2. AAV viral proteins VP1, VP2, and VP3 are labeled.

**Titer**

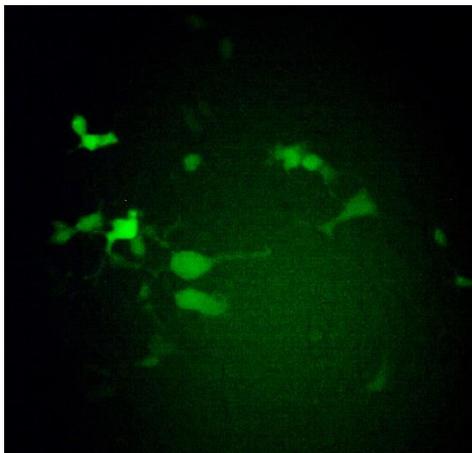
Two vials (50  $\mu$ l x 2) of AAV at a titer  $\geq 1 \times 10^{12}$  vector genomes/ml. The titer is determined by qPCR and will vary with each lot; the exact value will be provided with each shipment.

**Storage**

AAV is shipped with dry ice. For long-term storage, it is recommended to store AAV at  $-80^{\circ}\text{C}$ . Avoid repeated freeze-thaw cycles. Titters can drop significantly with each freeze-thaw cycle.

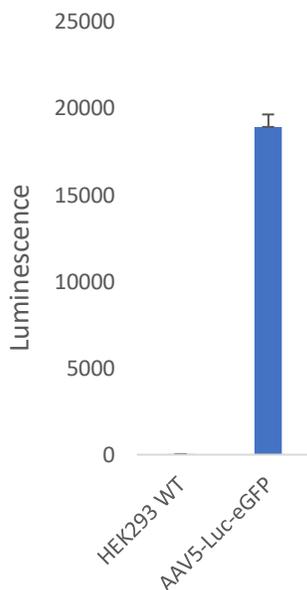
**Biosafety**

Recombinant AAV is inherently replication-deficient and not known to cause any human diseases. Additionally, following transduction, AAV vectors exist episomally and do not integrate into or disrupt the host cell's genome. AAV requires the use of a Biosafety Level 1 facility. BPS Bioscience recommends following all local, federal, state, and institutional regulations and using all appropriate safety precautions.

**Validation Data**

*Figure 2. Transduction of HEK293 cells using AAV5 Luciferase-eGFP particles.*

$1 \times 10^5$  cells/well were transduced in a 6-well plate with AAV5 Luciferase-eGFP at an MOI of  $2 \times 10^4$ . After 72 hours of transduction, eGFP expression in the target cells was observed under a fluorescence microscope. eGFP expression was stable over time and still observed 30 days after transduction.



*Figure 3. Luciferase activity of HEK293 cells transduced by AAV5 Luciferase-eGFP particles.*  $1 \times 10^5$  cells/well were transduced in a 6-well plate with AAV5 Luciferase-eGFP at an MOI of  $2 \times 10^4$ . After 72 hours of transduction, transduced cells or parental HEK293 cells were seeded in a 96-well plate at a density of  $2 \times 10^4$  cells/well, and luciferase activity was measured using the ONE-Step™ luciferase assay system (BPS Bioscience #60690)

### Troubleshooting Guide

Visit [bpsbioscience.com/lentivirus-faq](https://bpsbioscience.com/lentivirus-faq) for detailed troubleshooting instructions. For all further questions, please email [support@bpsbioscience.com](mailto:support@bpsbioscience.com).

### Related Products

| <i>Products</i>        | <i>Catalog #</i> | <i>Size</i> |
|------------------------|------------------|-------------|
| AAV1 ZsGreen           | 78443            | 50 µl x 2   |
| AAV2 ZsGreen           | 78444            | 50 µl x 2   |
| AAV3 ZsGreen           | 78445            | 50 µl x 2   |
| AAV5 ZsGreen           | 78447            | 50 µl x 2   |
| AAV6 ZsGreen           | 78448            | 50 µl x 2   |
| AAV8 ZsGreen           | 78449            | 50 µl x 2   |
| AAV9 ZsGreen           | 78450            | 50 µl x 2   |
| AAV-DJ ZsGreen         | 78442            | 50 µl x 2   |
| AAV6-Luciferase-eGFP   | 78645            | 50 µl x 2   |
| AAV8-Luciferase-eGFP   | 78647            | 50 µl x 2   |
| AAV9-Luciferase-eGFP   | 78468            | 50 µl x 2   |
| AAV-DJ Luciferase-eGFP | 78460            | 50 µl x 2   |