

### Description

Adeno-Associated Virus Serotype 2 (AAV2) is the best characterized AAV serotype. Nearly all recombinant AAV serotypes utilize the AAV2 inverted terminal repeats (ITRs). AAV2 requires the expression of Heparan Sulfate Proteoglycan (HSPG) on the surface of host cells for cell binding and internalization. Of nearly all the discovered AAV serotypes, AAV2 has the best transduction efficiency in cell culture and is the best tool for *in vitro* studies.

These AAV2 particles constitutively express ZsGreen under a CMV promoter. ZsGreen is a human codon-optimized variant of the green fluorescent protein isolated from reef coral (*Zoanthus sp*). It has been engineered for higher expression in mammalian cells and is up to four times brighter than enhanced GFP (eGFP). ZsGreen expression and transduction efficiency can easily be verified and optimized by fluorescence microscopy or flow cytometry. ZsGreen has an excitation wavelength of 493 nm and an emission wavelength of 505 nm.

### Application(s)

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

### Serotype

Wild-type AAV Serotype 2

### Formulation

AAV2 was produced in HEK293-AAV cells and is supplied in PBS-MK (PBS Magnesium-Potassium) buffer with 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 is provided with each shipment.

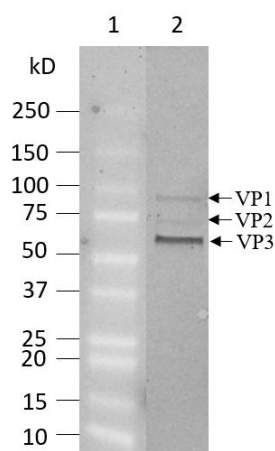


Figure 1. Purified AAV2 ZsGreen particles.

Staining of a 4-20% SDS-PAGE gel. The protein ladder is in lane 1, and  $2 \times 10^9$  VG (vector genome) of AAV2 is in lane 2. Additional lanes between 1 and 2 were removed from the figure for clarity. AAV viral proteins VP1, VP2, and VP3 are labelled.

**Titer**

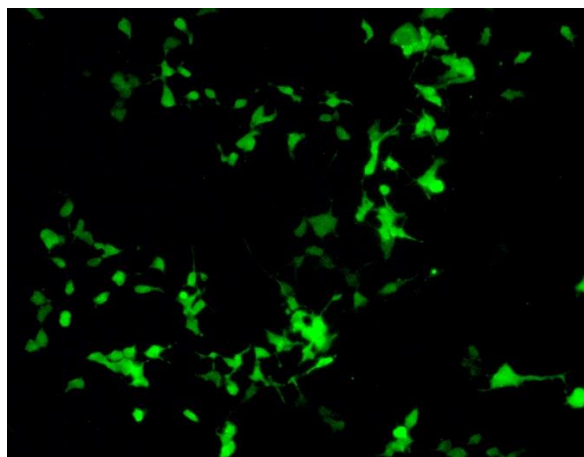
Two vials (50  $\mu$ l x 2) of AAV at a titer  $\geq 1 \times 10^{12}$  vector genome/ml. The titer is determined by qPCR and will vary with each lot; the exact value is provided with each shipment.

**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 AAV2 ZsGreen.*

$1 \times 10^5$  cells/well were transduced in a 6-well plate with AAV2 ZsGreen at an MOI of  $1 \times 10^4$ . After 72 hours of transduction, ZsGreen expression in the target cells was observed under a fluorescence microscope. ZsGreen expression was stable over time and still observed 30 days after transduction.

**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
AAV3 ZsGreen	78445	50 µl x 2
AAV5 ZsGreen	78447	50 µl x 2
AAV8 ZsGreen	78449	50 µl x 2
AAV9 ZsGreen	78450	50 µl x 2