

Description

Adeno-Associated Virus Serotype 3 (AAV3) shares 82% sequence homology with AAV2, and like AAV2, requires Heparan Sulfate Proteoglycan (HSPG) for cellular attachment. AAV3 vectors transduce human liver cancer cells extremely efficiently because AAV3 utilizes the human Hepatocyte Growth Factor Receptor (hHGFR) as a co-receptor for viral entry, which is highly expressed in these cells. Both the extracellular domain and the intracellular kinase domain of hHGFR are required for AAV3-mediated transgene expression.

These AAV3 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 AAV3 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 3

Formulation

AAV3 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.

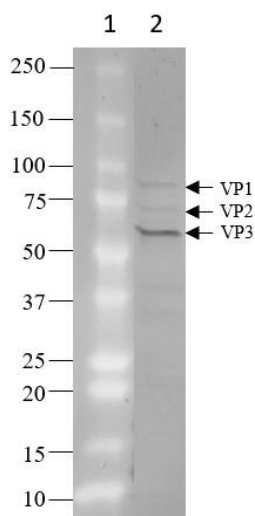


Figure 1. Purified AAV3 ZsGreen particles.

Staining of a 4-20% SDS-PAGE gel. The protein ladder is in lane 1, and 2×10^9 VG (vector genome) of AAV3 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 labeled.

Titer

Two vials (50 μ 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 is provided with each shipment.

Storage

AAV is shipped with dry ice. For long-term storage, it is recommended to store AAV at -80°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.

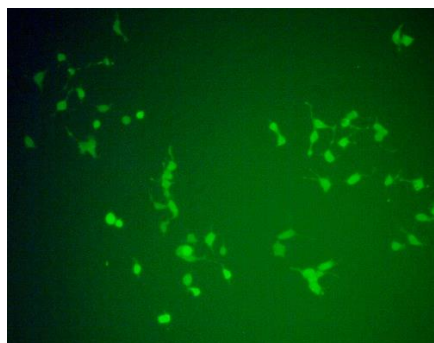
Validation Data

Figure 2. Transduction of HEK293 cells using AAV3 ZsGreen.

1×10^5 cells/well were transduced in a 6-well plate with AAV3 ZsGreen at an MOI of 1×10^4 . 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

For all further questions, please email support@bpsbioscience.com.

Related Products

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
AAV1 ZsGreen	78443	50 μ l x 2
AAV2 ZsGreen	78444	50 μ l x 2
AAV5 ZsGreen	78447	50 μ l x 2
AAV8 ZsGreen	78449	50 μ l x 2
AAV9 ZsGreen	78450	50 μ l x 2