Description
Adeno-Associated Virus Serotype 3 (AAV3) shares 82% sequence homology with AAV2, and like AAV2, requires the Heparan Sulfate Proteoglycan (HSPG) receptor for cell 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 and intracellular kinase domains of hHGFR are required for AAV3-mediated transgene expression.

These AAV particles constitutively express the firefly (*Photinus pyralis*) luciferase gene under the control of a CMV promoter. AAV transduction efficiency can easily be verified by measurement of luciferase activity.

Application(s)

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

Serotype
Wild-type AAV Serotype 3

Formulation
AAV 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.

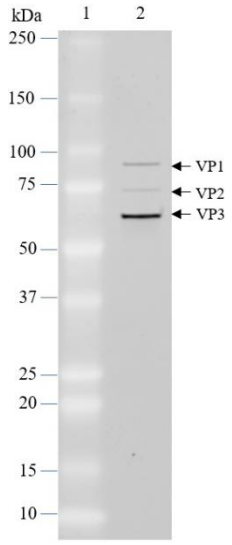

Figure 1. Purified AAV3 Luciferase particles.
Staining of a 4-20% SDS-PAGE gel. The protein ladder is in lane 1, and 5 x 10^9 VG (vector genome) of AAV is shown in lane 2. AAV viral proteins VP1, VP2, and VP3 are labelled.

Titer
Two vials (50 µl x 2) of AAV at a titer ≥1 x 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°C. Avoid repeated freeze-thaw cycles. Titers 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

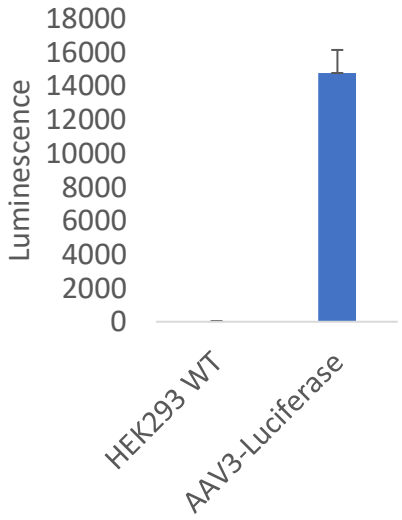

Figure 2. Luciferase activity in HEK293 cells transduced by AAV3 Luciferase particles.
1 x 10^5 cells/well were transduced in a 24-well plate with AAV3 Luciferase at an MOI of 2 x 10^4. After 72 hours of transduction, transduced cells or parental HEK293 cells were seeded in a 96-well plate at a density of 2 x 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 for detailed troubleshooting instructions. For all further questions, please email support@bpsbioscience.com.

Related Products

Products	*Catalog #*	*Size*
AAV3 ZsGreen	78445	50 µl x 2
AAV5 ZsGreen	78447	50 µl x 2
AAV3 Luciferase-eGFP	78463	50 µl x 2
AAV9 Luciferase-mCherry	78477	50 µl x 2
AAV2 SaCas9	78480	50 µl x 2