Description

Adeno-Associated Virus serotype 9 (AAV9) is one of the most promising serotypes for gene therapy applications. AAV9 transduces a wide range of tissue types, including cardiac and skeletal muscle, liver, pancreas, and eye tissue. AAV8 and AAV9 have recently been used to correct disease-causing mutations and improve muscle function in mouse models of Duchenne muscular dystrophy. AAV9 has significantly lower seroprevalence in the human population than other AAV serotypes, making AAV9 a desirable candidate for therapeutic applications.

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 9

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.

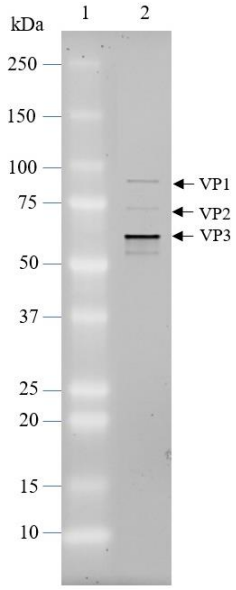

Figure 1. Purified AAV9 Luciferase particles.
Staining of a 4-20% SDS-PAGE gel. The protein ladder is in lane 1, and 5 x 10^9 VG (vector genome) of AAV9 is shown in lane 2. AAV viral proteins VP1, VP2, and VP3 are labelled.

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

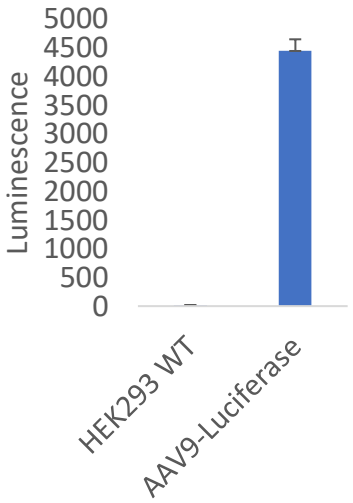

Figure 2. Luciferase activity in HEK293 cells transduced by AAV9 Luciferase particles.
1 x 10^5 cells/well were transduced in a 24-well plate with AAV9 Luciferase at an MOI (Multiplicity of Infection) of 2 x 10^4. After 72 hours of transduction, transduced cells or parental HEK293 cells were seeded in 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
AAV9 ZsGreen	78450	50 µl x 2
AAV6 Luciferase-eGFP	78466	50 µl x 2
AAV9 Luciferase-eGFP	78468	50 µl x 2
AAV5 Luciferase-mCherry	78474	50 µl x 2
AAV9 Luciferase-mCherry	78477	50 µl x 2
AAV2 SaCas9	78480	50 µl x 2