

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 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 AAV particles constitutively express the firefly (*Photinus pyralis*) luciferase and mCherry 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 mCherry 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 2

Formulation

AAV2 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). Purity will vary with each lot; the exact value will be provided with each shipment.

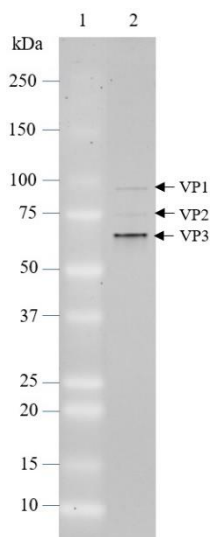


Figure 1. Purified AAV2 Luciferase-mCherry particles.

Staining of a 4-20% SDS-PAGE gel. The protein ladder is in lane 1, and 2×10^9 VG (vector genome) of AAV2 is shown in lane 2. 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 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

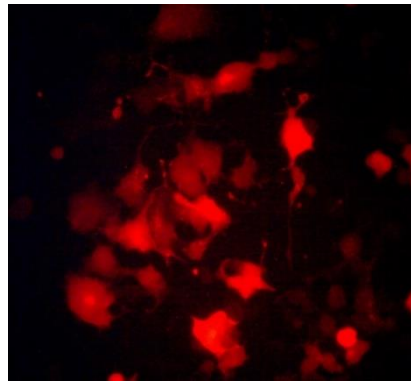


Figure 2. Transduction of HEK293 cells using AAV2 Luciferase-mCherry particles.

1×10^5 cells/well were transduced in a 6-well plate with AAV2 Luciferase-mCherry at an MOI of 2×10^4 . After 72 hours of transduction, mCherry expression in the target cells was observed under a fluorescence microscope. mCherry expression was stable over time and still observed 30 days after transduction.

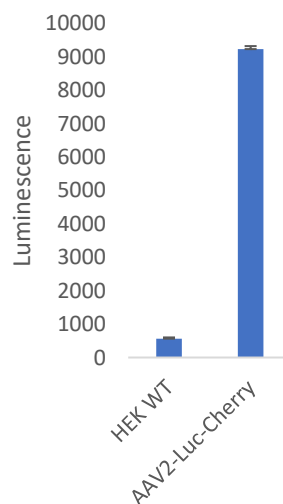


Figure 3. Luciferase activity of HEK293 cells transduced by AAV2 Luciferase-mCherry particles.
 1 x 10⁵ cells/well were transduced in a 6-well plate with AAV2 Luciferase-mCherry at an MOI of 2 x 10⁴. After 72 hours of transduction, transduced cells or parental HEK293 cells were seeded in a 96-well plate at a density of 2 x 10⁴ 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

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
AAV2 ZsGreen	78444	50 µl x 2
AAV5 ZsGreen	78447	50 µl x 2
AAV2 Luciferase-eGFP	78462	50 µl x 2
AAV3 Luciferase-eGFP	78463	50 µl x 2
AAV9 Luciferase-eGFP	78468	50 µl x 2
AAV6 Luciferase-mCherry	78475	50 µl x 2
AAV8 Luciferase-mCherry	78476	50 µl x 2