Description
This AAV-DJ Scrambled shRNA (short-hairpin RNA) Control co-expresses a 29-mer scrambled shRNA sequence under the control of a U6 promoter, and Turbo GFP under the control of a CMV promoter to assess the efficacy of transduction.

Background
RNA interference (RNAi) is a highly specific tool for protein knockdown in which a small non-coding RNA binds to the target protein's mRNA to promote its degradation and reduce protein translation. AAV vector-based expression of RNAi drives prolonged reduction in the level of mRNA targets in live animals. Short-hairpin RNA is one of the most widely used RNA interference methods to inhibit protein translation.

Adeno-Associated Virus-DJ (AAV-DJ) is a synthetic serotype made from eight different wild-type AAV serotypes (AAV2, 4, 5, 8, 9, avian, bovine, and goat AAV) using DNA shuffling. These modifications allow the AAV-DJ serotype to exhibit improved transduction efficiency *in vitro* and *in vivo* and infect a broader range of cell types compared to wild-type serotypes.

Application(s)
Use as a negative control for gene-specific shRNA transduction via AAV vectors.

Serotype
AAV Serotype DJ

Formulation
AAV was produced in HEK293-AAV cells and is supplied in PBS-MK (PBS Magnesium-Potassium) buffer containing 0.01% Pluronic F68. Virus particles can be packaged in custom formulations by special request, for an additional fee.

Purity
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 varies with each lot; the exact value will be provided with each shipment.

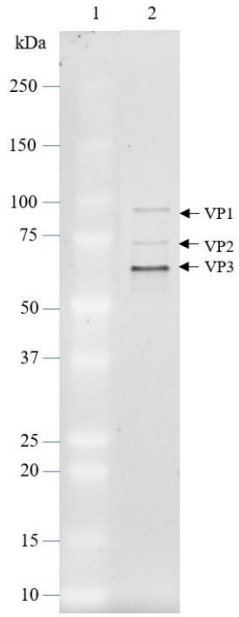

Figure 1. Purified AAV-DJ Scrambled shRNA Control particles.
Staining of a 4-20% SDS-PAGE gel with One-Step Lumitein™ UV Protein Gel Stain. The protein ladder is in lane 1, and 2 x 10^9 VG (vector genome) are shown in lane 2. AAV viral proteins VP1, VP2, and VP3 are indicated.

Size and 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 varies 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

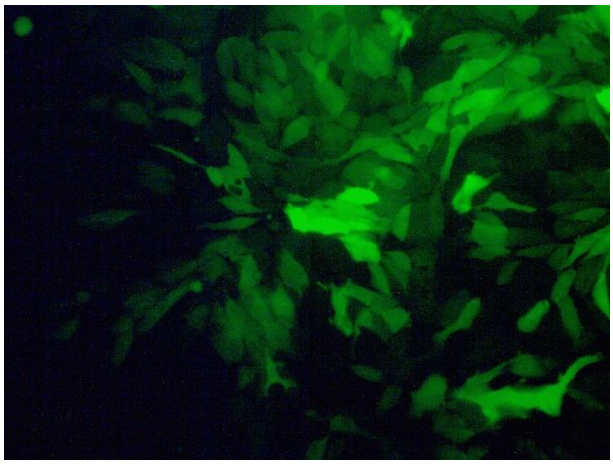

Figure 2. Transduction of NCI-H358 cells using purified AAV-DJ Scrambled shRNA Control particles. 1 x 10^5 cells were transduced in a 6-well plate with AAV-DJ Scrambled shRNA Control particles at an MOI of 2 x 10^4. 72 hours after transduction, GFP expression in the target cells was observed under a fluorescence microscope.

Notes

The AAV-DJ viruses are covered under several patents, including U.S. Patent Nos. 7,588,772, 8,067,014, 8,574,583, and 8,906,387, as well as corresponding foreign patents applications and patent rights. AAV-DJ is used under a license agreement.

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*
AAV2 ZsGreen	78444	50 µl x 2
AAV5 ZsGreen	78447	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