

Thermo Scientific Dharmacon[®] SMARTvector[™] shRNA Lentiviral Particles & Control Particles

Visit www.thermo.com/dharmacon, to find Product Information, Protocols and to download the SMARTvector Technical Manual.

Product Description

- Provided as packaged, purified and concentrated lentiviral particles at titers $\geq 10^8$ TU/mL.
 - TurboGFP reporter (Evrogen, Moscow, Russia)
 - SCMV promoter
 - Puromycin-resistance selectable marker
- Set of 3 and individual lentiviral vector constructs designed using the Dharmacon SMARTvector algorithm to silence specific target genes.
- Restriction enzyme analysis of the vector and sequencing of the targeting sequence to verify sequence integrity.
- Viral titer confirmed by fluorescence-activated cell-sorting (FACS) analysis of GFP expression in transduced HEK293 cells.
- Sterility analysis to certify that preparations are free of bacterial and mycoplasmic contamination
- Certificate of Analysis provided detailing results of quality assurance and control procedures.

Product	Description	Catalog Number
SMARTvector shRNA Lentiviral Particles - Set of 3 Constructs	Set of 3 SMARTvector shRNA constructs targeting desired gene, provided as packaged lentiviral particles at $\geq 10^8$ TU/mL	SK-XXXXXXX-XX-XX
SMARTvector shRNA Lentiviral Particles - Individual Constructs	Single SMARTvector shRNA construct targeting desired gene, provided as packaged lentiviral particles $\geq 10^8$ TU/mL	SH-XXXXXXX-XX-XX
SMARTvector Human GAPD Control Particles	SMARTvector positive control provided as packaged lentiviral particles at $\geq 10^8$ TU/mL; targets accession number NM_002046; validated to silence glyceraldehyde-3-phosphate dehydrogenase (GAPD, also known as GAPDH) in human cell lines	S-001000-01
SMARTvector Empty Vector Control Particles*	Empty vector expressing turboGFP, provided as packaged lentiviral particles at $\geq 10^8$ TU/mL; to be used as transduction control (does NOT correlate with gene silencing)	S-004000-01
SMARTvector Non-Targeting Control Particles	SMARTvector negative control for RNAi experiments, provided as packaged lentiviral particles $\geq 10^8$ TU/mL; designed to have minimal targeting of any known genes in human, mouse and rat genomes	S-005000-01
SMARTvector Firefly Luciferase Control Particles	SMARTvector positive control for silencing of firefly luciferase reporters, provided as packaged lentiviral particles at $\geq 10^8$ TU/mL; targets Firefly Luciferase plasmids pGL2 and pGL3 (Promega Corp., Madison, WI)	S-006000-01

*A 20 μ L aliquot of SMARTvector Empty Vector Control Particles is included with each gene-specific order

Shipping and Storage

- Dharmacon SMARTvector shRNA Lentiviral Particles are shipped on dry ice and must be stored at -80°C . Under these conditions, particles are stable for up to 1 year.
- Repeated freeze-thaw cycles should be avoided as this will negatively affect viral titer.
- When setting up gene silencing experiments using SMARTvector shRNA Lentiviral Particles, product should be thawed on ice, aliquoted into smaller volumes (if necessary) and immediately returned to -80°C .
- Alternatively, thawed viral particles can be maintained at 4°C for approximately one week without significant loss in titer.

Safety Precautions

The greatest safety risk associated with viral delivery systems stems from the potential generation of recombinant viruses that are capable of autonomous replication during the packaging process. The Dharmacon SMARTvector shRNA lentiviral platform eliminates these hazards by combining a disabled viral genome with a unique manufacturing process. Additionally, gene functions that facilitate the enclosing of the silencing sequence in a viral capsid (e.g., Gag, Pol, Env) are distributed into multiple helper plasmids (which do not contain significant regions of homology) during packaging. This tactic further minimizes the probability of recombination events that might otherwise generate viruses capable of autonomous replication. With these safety measures in place, SMARTvector shRNA lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities and should be treated with the same level of caution as with any other potentially infectious agent.

Viral Titer Determination

The viral titer of Dharmacon SMARTvector shRNA Lentiviral Particles is determined by use of fluorescence-activated cell sorting (FACS) analysis of transduced, GFP-positive cells. Conventional titer methods, such as p24 ELISA-based assays, do not distinguish between unassociated or free antigen and functional or non-functional viral particles. However, FACS analysis produces a more accurate measure of viral particles that are able to transfect cells. Therefore, FACS-based titers provide a better assessment of functional lentiviral particles. (Geraerts, M., et al. Comparison of lentiviral vector titration methods. BMC Biotechnology 2007, 6: 34-44).

Guidelines for Use

Go to www.thermo.com/dharmacon, Product Information, Protocols to download a copy of:

- SMARTvector Technical Manual

Publication Reference Guide

When referencing the use of Dharmacon products, please include the following information: product name (SMARTvector shRNA Lentiviral Particles) catalog number, Thermo Fisher Scientific., Lafayette, CO.

Contact Information

For technical questions regarding the use of siRNA reagents, please contact Dharmacon Technical Support at:

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In Other Countries

Please contact your appropriate distributor as listed on www.thermo.com/dharmacondistributors

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