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Lieferung & Zahlungsart

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Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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Description

DLL4 Lentivirus are replication incompetent, HIV-based, VSV-G pseudotyped lentiviral particles that are ready to transduce almost all types of mammalian cells, including primary and non-dividing cells. These particles transduce cells with human DLL4 (delta like canonical notch ligand 4) (NM_019074.4), driven by a CMV promoter, and a puromycin selection marker (Figure 1).

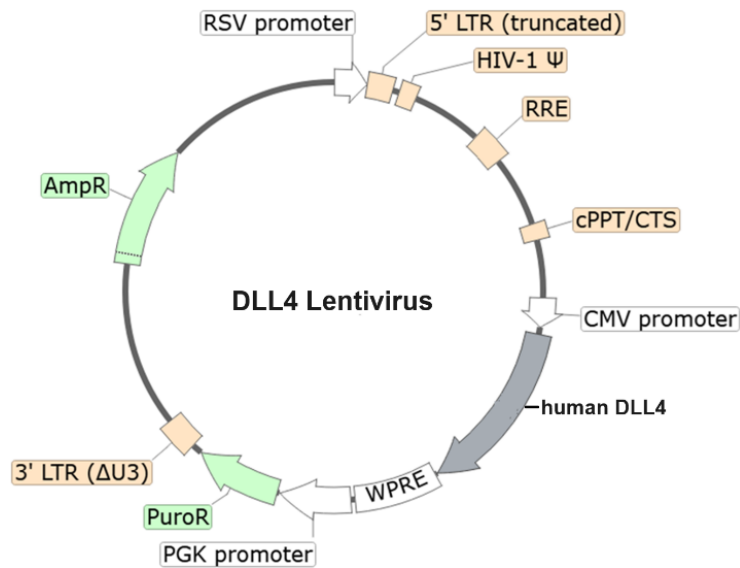


Figure 1. Schematic of the lenti-vector used to generate the DLL4 Lentivirus.

Background

Notch signaling is an evolutionarily conserved pathway that plays a critical role in cell fate decisions and differentiation. A member of the Delta family of Notch ligands, DLL4 (delta-like 4) is a vascular transmembrane protein which signals through its corresponding receptors Notch1 and Notch4 and plays a critical role in embryonic development, where it is essential for both vascular development and T-cell specification. DLL4 expression is induced by both VEGF (vascular endothelial growth factor) and hypoxia. Once bound to its receptor, DLL4 induces the cleavage and translocation of NICD (notch intracellular domain) to the nucleus, where it activates the expression of target genes. It plays an important role in blood vessel growth by regulating the differentiation of tip and stalk cells directing vascular sprouting. Early studies of the role of DLL4-Notch signaling in tumor angiogenesis demonstrated that inhibition of DLL4 decreased tumor growth. DLL4 has been implicated in atherosclerosis, cancer, and inflammatory disorders. More recently, a role in M1 macrophage polarization and inflammatory cytokine expression has been identified. DLL4 is an attractive therapeutic target with several clinical trials of DLL4 inhibitors ongoing, including trials of bispecific antibodies targeting both DLL4 and VEGF.

Application(s)

- Expression of human DLL4 in cells of interest.
- Generation of cell pools or stable cell lines expressing human DLL4 following puromycin selection.

Formulation

The lentivirus particles were produced in HEK293T cells in medium containing 90% DMEM + 10% FBS. Virus particles can be packaged in custom formulations by special request, for an additional fee.

Size and Titer

Two vials (500 μ l x 2) of lentivirus at a titer $\geq 10^7$ TU/ml. The titer will vary with each lot; the exact value is provided with each shipment.

Storage

Lentiviruses are shipped with dry ice. For long-term storage, it is recommended to store the lentiviruses at -80°C for up to 12 months from date of receipt. Avoid repeated freeze-thaw cycles. Titers can drop significantly with each freeze-thaw cycle.

Biosafety

The lentiviruses are produced with a SIN (self-inactivation) lentivector which ensures self-inactivation of the lentiviral construct after transduction and after integration into the genomic DNA of the target cells. None of the HIV genes (gag, pol, rev) will be expressed in the transduced cells, as they are expressed from packaging plasmids lacking the packing signal and are not present in the lentivirus particle. Although the pseudotyped lentiviruses are replication-incompetent, they require the use of a Biosafety Level 2 facility. BPS Bioscience recommends following all local federal, state, and institutional regulations and using all appropriate safety precautions.

Notes

To generate a DLL4 expressing stable cell line, remove the growth medium 48 hours after transduction and replace it with fresh growth medium containing the appropriate amount of puromycin (as pre-determined from a killing curve, <https://bpsbioscience.com/cell-line-faq>), for antibiotic selection of transduced cells, followed by clonal selection.

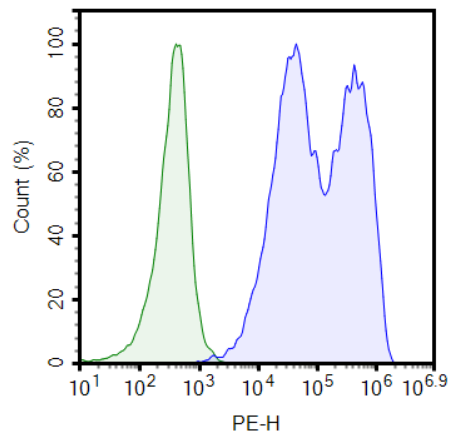
Figures and Validation Data

Figure 2. Expression of human DLL4 in CHO cells transduced with DLL4 Lentivirus and analyzed by flow cytometry.

Approximately 100,000 CHO-K1 cells were transduced with 1,000,000 TU of DLL4 Lentivirus. 48 hours post-transduction, transduced cells (blue) and parent cells (green) were stained with PE anti-human Delta-like protein 4 (DLL4) Antibody (Biolegend #346506) and analyzed by flow cytometry. Y-axis represents the % cell number. X-axis indicates PE intensity.

Sequence

Human DLL4 sequence (NM_019074.4)

MAAASRSASGWALLLLVALWQQRAAGSGVFQLQLQEFINERGVLASGRPCEPGCRTFFRVCLKHFQAVVSPGPCTFGTVSTPVL
 GTNSFAVRDDSSGGGRNPLQLPFNFTWPGTFSLIIEAWHAPGDDLREALPPDALISKIAIQGSLAVGQNWLLDEQTSTLTRLRYS
 YRVICSDNYGDNCSRLCKKRNDHFGHYVCQPDGNLSCLPGWTGEYCQQPICLSGCHEQNGYCSKPAECLCRPGWQGRLCNEC
 IPHNGCRHGTCSTPWQCTCDEGWGGLFCDQDLNYCTHHSPCKNGATCSNSGQRSYTCTCRPGYTGVDCELELSECDSPNCRN
 GGCKDQEDGYHCLCPPGYGLHCEHSTLSCADSPCFNGGSCRERNQGANYACECPPNFTGSNCEKKVDRCTS NPCANGGQCL
 NRGPSRMCRCPGFTGTCELHVSDCARNPCAHHGGTCHDLENGLMCTCPAGFSGRRCEVRTSIDACASSPCFNATCYTDLSTD
 TFVCNCPYGFVGSRCFPVGLPPSFPWVAVSLGVGLAVLLVLLGMVAVAVRQLRLRRPDDGSREAMNNLSDFQKDNLIPAAQLK
 NTNQKKELEVDCGLDKSNCGKQQNHTLDYNLAPGPLGRGTMPGKFPHSDKSLGEKAPLRLHSEKPECRISAICSPRDSMYQSVCL
 ISEERNECVIATEV

ReferencesYuwen Y., *et al.*, 2023 *Heliyon* 9(10): e20777.**Troubleshooting Guide**

Visit bpsbioscience.com/lentivirus-faq for detailed troubleshooting instructions. For further questions, please email support@bpsbioscience.com.

Related Products

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
DLL4 CHO Cell Line	82217	2 vials
DLL1 Lentivirus	82340	500 µl x 2
Notch1: DLL4[Biotinylated] Inhibitor Screening Chemiluminescence Assay Kit	82284	96 reactions
DLL4, Fc Fusion, Avi-Tag Recombinant	101903	10 µg/50 µg
DLL4, Fc Fusion, Avi-Tag, Biotin-Labeled Recombinant	101904	10 µg/50 µg
DLL1, Avi-Tag, His-Tag, Biotin-Labeled Recombinant	101810	25 µg/100 µg

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