Nef (HIV-1/Clade B)(NL4-3 isolate) Recombinant Protein

BACKGROUND

Nef (Negative Regulatory Factor) is a 27–35 kDa myristoylated accessory protein encoded by primate lentiviruses, including HIV-1, HIV-2, and SIV. Despite its name, Nef is a critical positive determinant of viral pathogenicity and replication fitness. It is among the first HIV-1 proteins expressed upon infection, acting exclusively through protein–protein interactions to downregulate CD4 and MHC class I surface expression, enhance viral infectivity, and modulate T cell signalling via host trafficking machinery (AP-1/AP-2), Src-family kinase SH3 domains (Hck, Fyn, Lck), and PAK2.

HIV-Nef-B12P is full-length Nef from HIV-1 Clade B isolate NL4-3 (GenBank P03406), expressed in HEK 293 cells with a C-terminal Strep-tag, purified to ≥95% homogeneity, and validated for Western blot, antibody ELISA, and HIV-1 entry inhibition studies.

PRODUCT SPECIFICATIONS

Field	Description
Description	Nef (HIV-1/Clade B) Recombinant Protein
Catalog Number	HIV-Nef-B12p
GenBank Accession	P03406
Isolate	HIV-1/Clade B (isolate NL4-3)
Expression System	HEK 293 Cells
Protein length	Amino acid (1-206)
Tag	C-terminal Strep-tag
Concentration	1 mg/mL
Protein length	Amino acid (1-206)
Purity	>95% as determined by SDS-PAGE
Formulation	PBS, pH7.4
Size	50 µg
Applications	ELISA, Immunogen, WB, etc
Predicted Molecular Weight	~27 kDa

APPLICATIONS

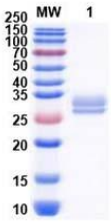
- **Antibody ELISA** — Suitable as a plate-coating antigen for detection and titration of anti-Nef antibodies in serum, plasma, or hybridoma supernatants.
- **HIV-1 Entry Inhibition Assays** — Applicable as a tool reagent in cell-based or biochemical assays probing HIV-1 entry inhibition mechanisms involving Nef.
- **Western Blot (WB)** — Use as a size and identity marker for HIV-1 Nef on Western blot. Expected band at ~27–35 kDa under reducing SDS-PAGE conditions. Detected with anti-Nef or anti-Strep-tag primary antibodies.
- **Additional Applications:** Protein–protein interaction studies, immunoprecipitation, flow cytometry controls, and structural/biophysical characterization.

Note: Optimal antibody concentration should be determined by the end user for each specific application and sample type. Titration is recommended to achieve optimal signal-to-noise ratios.

STORAGE & STABILITY

Recommended Storage	Store at -20 ºC –70 °C for up to twelve months from receipt.
Short-Term Stability	Stable for at least 1 month at 2–8 °C from the date of shipment under appropriate conditions.
Handling	Avoid repeated freeze-thaw cycles. Upon receipt, aliquot the antibody into single-use volumes to minimize degradation and preserve activity.

SDS-PAGE



4-20% SDS-PAGE: purified recombinant HIV-1 Nef protein

NEF PROTEIN SEQUENCE

Full-length Nef sequence – HIV-1 Clade B, isolate NL4-3 (GenBank accession: P03406):

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MGGKWSKSSV IGWPAVRERM RRAEPAADGV GAVSRDLEKH GAITSSNTAA NNAACAWLEA QEEEEVGFPV
TPQVPLRPMT YKAAVDLSHF LKEKGGLEGL IHSQRRQDIL DLWIYHTQGY FPDWQNYTPG PGVRYPLTFG
WCYKLVPVEP DKVEEANKGE NTSLLHPVSL HGMDDPEREV LEWRFDSRLA FHHVARELHP EYFKNC
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