ALPHA DIAGNOSTIC INTERNATIONAL

Product Data Sheet

Cat # RP-549 **Recombinant HIV-1 TAT Clade-C** **Size:** 10 ug

The human immunodeficiency virus (HIV) is a retrovirus that causes the acquired immunodeficiency syndrome (AIDS). It is composed of two copies of positive single-stranded RNA that codes for the virus's nine genes enclosed by a capsid composed of the viral protein p24.The RNA is tightly bound to nucleocapsid proteins, p7, and enzymes needed for the development (reverse transcriptase, proteases, ribonuclease and integrase). A matrix composed of the viral protein p17 surrounds the capsid which is, in turn, surrounded by the viral envelope. Embedded in the viral envelope are proteins from the host cell and copies of a complex HIV protein known as Env that consists of a cap made of three molecules called glycoprotein (gp) 120, and a stem consisting of three gp41 molecules that anchor the structure into the viral envelope. This glycoprotein complex enables the virus to attach to and fuse with target cells to initiate the infectious cycle. Both these surface proteins, especially gp120, have been considered as targets of future treatments or vaccines against HIV.

The RNA genome consists of at least seven structural landmarks (LTR, TAR, RRE, PE, SLIP, CRS, and INS), and nine genes out of which 3 are **structural proteins** (**gag, pol, and env**) and the remaining are **regulatory. genes** (**tat, rev, nef, vif, vpr, and vpu**) for proteins that control the ability of HIV to infect cells, produce new copies of virus (replicate), or cause disease.

The two **Tat proteins (p16 and p14)** are transcriptional transactivators for the LTR promoter acting by binding the TAR. HIV-1 regulatory Tat protein plays an essential role in viral replication and infectivity. In addition, during acute infection, Tat is released extracellularly by infected cells and is taken up by neighboring cells where it Tran activates viral replication and increases virus infectivity. HIV-1 Tat activates transcription of HIV-1 viral genes by inducing phosphorylation of the C-terminal domain (CTD) of RNA polymerase II (RNAPII). Tat can also disturb cellular metabolism by inhibiting proliferation of antigen-specific T lymphocytes and by inducing cellular apoptosis. Tat-induced apoptosis of T-cells is attributed, in part, to the distortion of microtubules polymerization. LIS1 is a microtubule-associated protein that facilitates microtubule polymerization.

Source & Storage

HIV-1 TAT Recombinant- produced in E.coli is a single, non-glycosylated, polypeptide chain containing 100 amino acids encoded by two exons and having chain having a molecular mass of 20 kDa (>95% purity). Supplied as lyophilized (freeze-dried) powder. No additives. It is recommended to reconstitute the lyophilized HIV-1 TAT in sterile H2O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.

Lyophilized HIV-1 TAT although stable at room temperature for 1 week, should be stored desiccated below -18°C. Upon reconstitution HIV-1 TAT should be stored at 4°C between 2-7 days and for future use below -18°C. For long-term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles

Specificity:
Immunoreactive with all sera of HIV-1 infected individuals.

Applications: Recognized by anti-Tat (HIV-1) polyclonal antibody. Reacts with anti-Tat antibodies from human, monkey, rabbit and mouse serum.

References: Vaccine. 2003 May 16;21(17-18):2073-81 Ouellet DL *et al.*(April 2008) *Nucleic Acids Res.* **36** (7): 2353–65. Douek DC (2009) *Annu. Rev. Med.* **60**: 471–84

Usage:
This item is for LABORATORY ESEARCH USE ONLY.

Related items :

Catalog#	ProdDescription
RP-533	Recombinant HIV-1 Envelope (233)
RP-534	Recombinant HIV-1 gp120 nef Mosaic
RP-535	Recombinant HIV-1 p24 Core
RP-536	Recombinant HIV-1 p24
RP-537	Recombinant HIV-1 Envelope (288)
RP-538	Recombinant HIV-1 p24, Biotin Labeled
RP-541	Recombinant HIV-1 p24, Horseradish Peroxidase Labeled
RP-542	Recombinant HIV-1 gag p17-p24, gp41-gp120
RP-543	Recombinant HIV-1 gag p17, p24, gp120
RP-546	Recombinant HIV-1 gp120 MN
RP-548	Recombinant HIV-1 gp120 CM
RP-550	Recombinant HIV-1 gp41, Biotin Labeled
RP-551	Recombinant HIV-1 gp41, Horseradish Peroxidase Labeled
RP-552	Recombinant HIV-1 gp41 Long, Biotin Labeled
RP-553	Recombinant HIV-1 gp41 Long, Horseradish peroxidase Labeled
RP-554	Recombinant HIV-1 gag p17, p24
RP-555	Recombinant HIV-1 pol Integrase
RP-556	Recombinant HIV-I p24 gag
RP-557	Recombinant HIV-1 nef
RP-558	Recombinant HIV-1 gp160 LAV
RP-559	Recombinant HIV-1 gp160 MN
RP-560	Recombinant HIV-1 p66 pol
RP-561	Recombinant HIV-1 TAT, Biotin Labeled
RP-562	Recombinant HIV-1 TAT
RP-563	Recombinant HIV-1 p55 gag
RP-564	Recombinant HIV-1 Envelope conjugated to HIV-2 gp39
RP-565	Recombinant HIV Type-O Envelope
RP-567	Recombinant HIV Type-O gp41
RP-568	Recombinant HIV-2 gp32
RP-569	Recombinant HIV-2 gp32, Biotin Labeled
RP-570	Recombinant HIV-2 gp32, Horseradish Peroxidase Labled
RP-571	Recombinant HIV-2 gp36
RP-572	Recombinant HIV-2 gp36 (390-702)
RP-573	Recombinant HIV-2 Envelope
RP-576	Recombinant HIV Type-O gp41, MBP tag
RP-579	Recombinant HIV-1 p31 Integrase
RP-580	Recombinant HIV-1 gp120 LAV
RP-587	Recombinant HIV-1 p24 Core, Sf9

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Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com
☎ (800) 786-5777; (210) 561-9515; **Fax**: (210) 561-9544; **Web Site**: www.4adi.com