abcam

ab43015

Biotin Anti-HIV1 tat antibody

Anti-HIV1 tat antibody conjugated to Biotin is a rabbit polyclonal antibody suitable for ELISA, flow cytometry, Western blot.

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Biotin
Storage buffer	pH: 7.4 Constituents: PBS, 0.05% Glycerol (glycerin, glycerine)
Form	Liquid
Clonality	Polyclonal
Purification technique	Affinity purification Protein A
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Expected

Species	Human immunodeficiency virus
Dilution info	-
Notes	ab200208 - Rabbit polyclonal IgG, is suitable for use as an isotype control with this antibody.

ELISA

Expected

Species	Human immunodeficiency virus
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Expected

Species	Human immunodeficiency virus
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information tat

Function

Transcriptional activator that increases RNA Pol II processivity, thereby increasing the level of full-length viral transcripts. Recognizes a hairpin structure at the 5'-LTR of the nascent viral mRNAs referred to as the transactivation responsive RNA element (TAR) and recruits the cyclin T1-CDK9 complex (P-TEFb complex) that will in turn hyperphosphorylate the RNA polymerase II to allow efficient elongation. The CDK9 component of P-TEFb and other Tat-activated kinases hyperphosphorylate the C-terminus of RNA Pol II that becomes stabilized and much more processive. Other factors such as HTATSF1/Tat-SF1, SUPT5H/SPT5, and HTATIP2 are also important for Tat's function. Besides its effect on RNA Pol II processivity, Tat induces chromatin remodeling of proviral genes by recruiting the histone acetyltransferases (HATs) CREBBP, EP300 and PCAF to the chromatin. This also contributes to the increase in proviral transcription rate, especially when the provirus integrates in transcriptionally silent region of the host genome. To ensure maximal activation of the LTR, Tat mediates nuclear translocation of NF-kappa-B by interacting with host RELA. Through its interaction with host TBP, Tat may also modulate transcription initiation. Tat can reactivate a latently infected cell by penetrating in it and transactivating its LTR promoter. In the cytoplasm, Tat is thought to act as a translational activator of HIV-1 mRNAs. Extracellular circulating Tat can be endocytosed by surrounding uninfected cells via the binding to several surface receptors such as CD26, CXCR4, heparan sulfate proteoglycans (HSPG) or LDLR. Neurons are rarely infected, but they internalize Tat via their LDLR. Through its interaction with nuclear HATs, Tat is potentially able to control the acetylation-dependent cellular gene expression. Modulates the expression of many cellular genes involved in cell survival, proliferation or in coding for cytokines or cytokine receptors. Tat plays a role in T-cell and neurons apoptosis. Tat induced neurotoxicity and apoptosis probably contribute to neuroAIDS. Circulating Tat also acts as a chemokine-like and/or growth factor-like molecule that binds to specific receptors on the surface of the cells, affecting many cellular pathways. In the

vascular system, Tat binds to ITGAV/ITGB3 and ITGA5/ITGB1 integrins dimers at the surface of endothelial cells and competes with bFGF for heparin-binding sites, leading to an excess of soluble bFGF.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The HIV-1 Tat protein also known as HIV Tat or simply Tat is an important regulatory protein of the Human Immunodeficiency Virus type 1 (HIV-1). It has a mass of approximately 14 to 16 kDa and is important for viral replication. This protein is expressed early in the HIV-1 infection cycle and is localized mainly in the nucleus of infected T-cells. HIV-1 Tat is known for its ability to transactivate the HIV-1 long terminal repeat (LTR) promoter which significantly enhances the production of viral RNA.
Biological function summary	The HIV-1 Tat protein plays an important role in the replication and transcription processes of the HIV-1 virus. It is part of a complex that interacts with other host cellular factors to improve the efficiency of the HIV-1 transcription from the provirus. This interaction is essential for the elongation phase of transcription which results in increased viral gene expression and successful replication of the virus inside host cells.
Pathways	The involvement of the HIV-1 Tat protein extends to interfering with several important biological pathways. It influences the NF-kB pathway which is critical for immune response regulation and interacts with the Cyclin T1 as part of the P-TEFb complex. This interaction is important for the transcriptional activation of the HIV LTR. By affecting the NF-kB pathway Tat protein indirectly modulates inflammatory responses which can lead to altered immune system functions.
Associated diseases and disorders	HIV-1 Tat protein's primary significance lies in the progression and pathology of HIV/AIDS. Its interactions with host cellular proteins such as CDK9 (a component of P-TEFb) are critical for viral persistence and pathogenesis. Additionally Tat has been implicated in neurological disorders associated with HIV-1 infection often referred to as HIV-associated neurocognitive disorders (HAND). Its influence on

the central nervous system arises from its ability to exit infected cells and exert neurotoxic effects in neighboring uninfected neural cells.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.