

# HIV-1 Tat (vN-21): sc-17439

## BACKGROUND

Infection by human immunodeficiency virus (HIV) is associated with an early immune dysfunction and progressive destruction of CD4<sup>+</sup> T lymphocytes. The HIV-induced, premature destruction of lymphocytes is associated with the continuous production of HIV viral proteins, which modulate apoptotic pathways. The HIV-1 Tat protein, also designated Tbp1, is a viral protein that is essential for activation of the HIV genes and plays a critical role in HIV-induced immunodeficiency. Extracellular HIV-1 Tat has been implicated in the development of AIDS and of AIDS-associated pathologies. HIV-1 Tat is associated with chronic immune activation and the continuous induction of apoptotic factors. It can also protect HIV-infected cells from apoptosis by increasing anti-apoptotic proteins and downregulating cell surface receptors recognized by immune system cells. HIV-1 Tat has been shown to have neurotoxic activity and is able to promote certain proinflammatory functions of microglia.

## REFERENCES

1. Peloponese, J.M., et al. 2000. 1H-13C nuclear magnetic resonance assignment and structural characterization of HIV-1 Tat protein. *C. R. Acad. Sci. III, Sci. Vie* 10: 883-894.
2. Ross, T.M. 2001. Using death to one's advantage: HIV modulation of apoptosis. *Leukemia* 3: 332-341.
3. Rusnati, M., et al. 2001. Pentosan polysulfate as an inhibitor of extracellular HIV-1 Tat. *J. Biol. Chem.* 25: 22420-22425.
4. Visentin, S., et al. 2001. Altered outward-rectifying K<sup>+</sup> current reveals microglial activation induced by HIV-1 Tat protein. *Glia* 3: 181-190.
5. Patrizio, M., et al. 2001. Human immunodeficiency virus type 1 Tat protein decreases cyclic AMP synthesis in rat microglia cultures. *J. Neurochem.* 2: 399-407.
6. Yang, Y., et al. 2003. Monocytes treated with human immunodeficiency virus Tat kill uninfected CD4<sup>+</sup> cells by a tumor necrosis factor-related apoptosis-induced ligand-mediated mechanism. *J. Virol.* 77: 6700-6708.
7. Bruce-Keller, A.J., et al. 2003. Synaptic transport of human immunodeficiency virus Tat protein causes neurotoxicity and gliosis in rat brain. *J. Neurosci.* 23: 8417-8422.
8. Leifert, J.A., et al. 2003. The cationic region from HIV Tat enhances the cell-surface expression of epitope/MHC class I complexes. *Gene Ther.* 10: 2067-2673.

## SOURCE

HIV-1 Tat (vN-21) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of HIV-1 Tat of HIV-1 origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17439 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

HIV-1 Tat (vN-21) is recommended for detection of Tat of HIV-1 origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of HIV-1 Tat: 15 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

## SELECT PRODUCT CITATIONS

1. Mingaleeva, R.N., et al. 2010. Comparative analysis of herpes simplex virus thymidine kinase gene expression potentiation via HIV-1 Tat-TAR-system and cancer-specific promoters in p53<sup>+</sup> and p53<sup>-</sup> cells. *Mol. Biol.* 44: 507-514.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **HIV-1 Tat (02-012): sc-65916**, our highly recommended monoclonal alternative to HIV-1 Tat (vN-21).