SANTA CRUZ BIOTECHNOLOGY, INC.

HTLV-1 Tax (1A3): sc-57872

BACKGROUND

HTLV-1 causes two distinct human diseases, HTLV-1-associated myelopathy/tropical spastic paraparesis (HAM/TSP) and adult T cell leukemia/lymphoma (ATL). The glycoproteins encoded by the env gene of HTLV-1 are essential for interaction with an unidentified receptor on the surface of target cells and play a crucial role in the infection process. Encoded by HTLV-1 Tax is a phosphoprotein that functions as a transcriptional activator. Tax has the ability to modulate the expression and function of many cellular genes and has been crucial to understanding the HTLV-1-mediated transformation of cells. In activating cellular gene expression, Tax impinges upon several cellular signal-transduction pathways, including the CREB/ATF and NFκB pathways. In addition, Tax deregulates the expression of downstream genes, which mediate cell cycle control.

REFERENCES

1. Kitze, B., et al. 1998. Human CD4+ T lymphocytes recognize a highly conserved epitope of human T lymphotropic virus type 1 (HTLV-1) ENV gp21 restricted by HLA DRB1*0101. Clin. Exp. Immunol. 111: 278-285.
2. Jinno, A., et al. 1999. Inhibition of cell-free human T-cell leukemia virus type 1 infection at a postbinding step by the synthetic peptide derived from an ectodomain of the gp21 transmembrane glycoprotein. J. Virol. 73: 9683-9689.
3. Tallet, B., et al. 2001. Sequence variations in the amino- and carboxy-terminal parts of the surface envelope glycoprotein of HTLV type 1 induce specific neutralizing antibodies. AIDS Res. Hum. Retroviruses 17: 337-348.
4. Carter, R.S., et al. 2001. Persistent activation of NFκB by the Tax transforming protein involves chronic phosphorylation of IκB kinase subunits IKKβ and IKKγ. J. Biol. Chem. 276: 24445-24448.
5. Jeang, K.T. 2001. Functional activities of the human T-cell leukemia virus type I Tax oncoprotein: cellular signaling through NFκB. Cytokine Growth Factor Rev. 12: 207-217.

SOURCE

HTLV-1 Tax (1A3) is a mouse monoclonal antibody raised against full length HTLV-1 Tax.

PRODUCT

Each vial contains 50 µg IgG_{2a} in 500 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HTLV-1 Tax (1A3) is recommended for detection of HTLV-1 Tax proteins expressed in transiently transfected cells of HTLV-1 origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:2500), immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:50-1:2500) and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:100-1:5000).

Molecular Weight of HLV-1 Tax: 40 kDa.

STORAGE

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

SELECT PRODUCT CITATIONS

1. Wada, K., et al. 2009. Ro52-mediated monoubiquitination of IKKβ down-regulates NFκB signalling. J. Biochem. 146: 821-832.
2. Wang, J., et al. 2013. Bcl-3, induced by Tax and HTLV-1, inhibits NFκB activation and promotes autophagy. Cell. Signal. 25: 2797-2804.
3. Wang, J., et al. 2017. HTLV-1 Tax impairs K63-linked ubiquitination of STING to evade host innate immunity. Virus Res. 232: 13-21.
4. Wang, J., et al. 2017. HLA-DMB restricts human T-cell leukemia virus type-1 (HTLV-1) protein expression via regulation of ATG7 acetylation. Sci. Rep. 7: 14416.
5. Huang, Q., et al. 2017. HTLV-1 Tax upregulates early growth response protein 1 through nuclear factor-κB signaling. Oncotarget 8: 51123-51133.
6. Wang, J., et al. 2017. Ku70 senses HTLV-1 DNA and modulates HTLV-1 replication. J. Immunol. 199: 2475-2482.
7. Yang, B., et al. 2018. IFI16 regulates HTLV-1 replication through promoting HTLV-1 RTI-induced innate immune responses. FEBS Lett. 592: 1693-1704.
8. Malu, A., et al. 2019. The human T-cell leukemia virus type-1 Tax oncoprotein dissociates NFκB $p65^{RelA}$-Stathmin complexes and causes catastrophic mitotic spindle damage and genomic instability. Virology 535: 83-101.
9. Xu, X., et al. 2020. Reversal of CYLD phosphorylation as a novel therapeutic approach for adult T-cell leukemia/lymphoma (ATLL). Cell Death Dis. 11: 94.
10. Mohanty, S., et al. 2020. The E3/E4 ubiquitin conjugation factor UBE4B interacts with and ubiquitinates the HTLV-1 Tax oncoprotein to promote NFκB activation. PLoS Pathog. 16: e1008504.
11. Bellon, M., et al. 2022. Feedback loop regulation between Pim kinases and Tax keeps human T-cell leukemia virus type 1 viral replication in check. J. Virol. 96: e0196021.
12. Hasegawa, A., et al. 2023. Vaccination with short-term-cultured autologous PBMCs efficiently activated STLV-1-specific CTLs in naturally STLV-1-infected Japanese monkeys with impaired CTL responses. PLoS Pathog. 19: e1011104.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.