

HIV-1 RT (39/4.12.2): sc-57829

BACKGROUND

Reverse transcriptase (RT) is a DNA polymerase that will either use an RNA or DNA strand as a primer. Retroviruses use the enzyme RT to transcribe their single-stranded RNA genome into single-stranded DNA and to then construct a complementary strand of DNA. As a result, RT provides a DNA double helix capable of integration into host cell chromosomes. The host cell lysine tRNA, which partially unfolds and anneals to the 5' end of the viral genomic RNA, primes the double stranded DNA production. HIV-1 uses RT to infect humans; HIV-1 RT is a heterodimer. RT inhibitors were the first anti-HIV medications and are divided into two classes based on their structure and action: nucleoside analogues and non-nucleoside reverse transcriptase inhibitors. AZT is one such drug which causes chain termination of the polymerase reaction.

REFERENCES

1. Midgley, A.R. and Hepburn, M.R. 1980. Use of the double-antibody method to separate antibody bound from free ligand in radioimmunoassay. *Meth. Enzymol.* 70: 266-274.
2. Preston, B.D., Poiesz, B.J. and Loeb, L.A. 1988. Fidelity of HIV-1 reverse transcriptase. *Science* 242: 1168-1171.
3. Roberts, J.D., Bebenek, K. and Kunkel, T.A. 1988. The accuracy of reverse transcriptase from HIV-1. *Science* 242: 1171-1173.
4. Kati, W.M., Johnson, K.A., Jerva, L.F. and Anderson, K.S. 1993. Mechanism and fidelity of HIV reverse transcriptase. *J. Biol. Chem.* 267: 25988-25997.
5. Ren, J., Esnouf, R., Garman, E., Somers, D., Ross, C., Kirby, I., Keeling, J., Darby, G., Jones, Y. and Stuart, D. 1995. High resolution structures of HIV-1 RT from four RT-inhibitor complexes. *Nat. Struct. Biol.* 2: 293-302.
6. Esnouf, R., Ren, J., Ross, C., Jones, Y., Stammers, D. and Stuart, D. 1995. Mechanism of inhibition of HIV-1 reverse transcriptase by non-nucleoside inhibitors. *Nat. Struct. Biol.* 2: 303-308.
7. Huang, H., Chopra, R., Verdine, G.L. and Harrison, S.C. 1998. Structure of a covalently trapped catalytic complex of HIV-1 reverse transcriptase: implications for drug resistance. *Science* 282: 1669-1675.
8. Rhee, S.Y., Gonzales, M.J., Kantor, R., Betts, B.J., Ravela, J. and Shafer, R.W. 2003. Human immunodeficiency virus reverse transcriptase and protease sequence database. *Nucleic Acids Res.* 31: 298-303.

SOURCE

HIV-1 RT (39/4.12.2) is a mouse monoclonal antibody raised against Pol RT (Reverse Transcriptase) of HIV-1 origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

HIV-1 RT (39/4.12.2) is recommended for detection of Pol RT (Reverse Transcriptase) of HIV-1 origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000); also recommended for detection of pol-encoded p51/66 using Western blotting; Non cross-reactive with HTLV-I RT.

Molecular Weight of HIV-1 RT subunits: 66/51 kDa.

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.