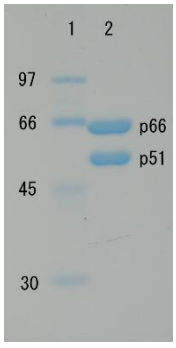
HIV-1 Reverse Transcriptase, Functional

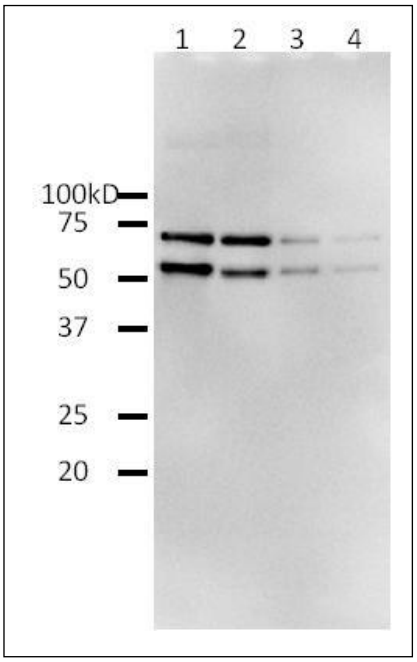
Product code	05-001 05-002
Size	200 U 1000 U
Storage	-20℃
Product Description	Recombinant full-size HIV-1 Reverse Transcriptase without Tag-peptide expressed in *E. coli.* It is composed of heterodeimer, p66 and p51 as the one produced in HIV-1 infected cell. It is an RNA-dependent DNA polymerase derived from HIV-1 (AIDS virus), subtype B origin (Ref.1). It also has RNaseH activity and is an enzyme indispensable for reproduction of AIDS virus.
Concentration	5000 U/ml (0.5 mg/ml)
Buffer	50% glycerol, 40 mM Tris-HCl (pH8.3), 50 mM NaCl, 5 mM MgCl2, 0.1% Triton X-100, 1 mM DTT
Purity	Over 90% by SDS-PAGE (CBB staining)
Definition of Activity	Activity of intake of 1 nmole of dTMP in 10 min at 37℃ is considered as 1 unit using poly(rA) and oligo(dT) as template and primer.
Conditions of measurement	50 mM Tris-HCl (pH 8.3), 10 mM $MgCl_2$, 50mM KCl, 3 mM DTT, 0.1% Nonidet P-40, 20 μg/ml poly(rA)・oligo$(dT)_{12\text{-}18}$, 0.5 mM dTTP ($[^3H]$dTTP ,~1 x 10^5 cpm), and 10-50 units/ml reverse transcriptase.
Activity	5,000 U/ml
Application	1. It is extremely effective for screening new specific inhibitors for HIV virus as a drug for treating AIDS). 2. Generally, Gag and Env proteins are employed as antigens for detecting anti-HIV-1 antibody. However, by using this enzyme in combination as an antigen, the detection will be more sensitive. 3. Standards for SDS-PAGE (Fig.1), Western blotting (Fig.2), Dot blotting, ELISA
Data Image	 **Fig. SDS-Polyacrylamide gel electrophoresis of HIV-1 reverse transcriptase**
Data Link	UniProtKB: : P04585 GenBank: AAA44988.1

Please note: All products are FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES. NOT FOR MILITARY USE.

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Data Image: 05-001 HIV-1 Reverse Transcriptase

Fig.2. Western blotting of functional recombinant full-length HIV-1 reverse transcriptase by using anti-HIV-1 Reverse Transriptase antibody (BioAcademia 65-001).



1; 40 ng / lane
2; 20 ng / lane
3; 4 ng / lane
4; 2 ng /lane

Anti-HIV-1 RT antibody was used at 1/2,000 dilution. As second antibody, goat anti-rabbit IgG antibody conjugated with HRP was used at 1/5,000 dilution. ECL system was used.

References: This product was described in Ref 1 and used in the following publications.

1. Saitoh A *et al.* Overproduction of human immunodeficiency virus type I reverse transcriptase in Escherichia coli and purification of the enzyme. *Microbiol Immunol* **34**: 509-521 (1990) PMID: 1699113
2. Permanasari ED et al. Enzymatic Activities of RNase H Domains of HIV-1 Reverse Transcriptase with Substrate Binding Domains of Bacterial RNases H1 and H2. Mol Biotechnol. 2015 Jun;57(6):526-38. PMID: 25673083
3. Kadokura K et al. Novel urushiols with human immunodeficiency virus type 1 reverse transcriptase inhibitory activity from the leaves of Rhus verniciflua. J Nat Med. 2015 Jan;69(1):148-53. PMID: 25349048
4. Tada K et al. Abacavir, an anti-HIV-1 drug, targets TDP1-deficient adult T cell leukemia. Sci Adv. 2015 Apr 24;1(3):e1400203. PMID: 26601161
5. Izumida M et al. The Spirocyclic Imine from a Marine Benthic Dinoflagellate, Portimine, Is a Potent Anti-Human Immunodeficiency Virus Type 1 Therapeutic Lead Compound Mar Drugs. 2019 Aug 24;17(9). PMID: 31450557

Useful Referece: Ref 1 describes infectious cDNA of HIV-1 which was used to construct expression system of this product.

1. Adachi A *et al* " Production of acquired immunodeficiency syndrome-associated retrovirus in human and nonhuman cells transfected with an infectious molecular clone." *J Virol* **59**: 284-291

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(1986) PMID: 3016298

Related products

65-001 Anti-HIV-1 Reverse Transcriptase antibody, rabbit serum

65-022 Anti-HIV-1 Reverse Transcriptase antibody, rabbit polyclonal

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