

HIV-1 Reverse Transcriptase

Cat. # 05-001 (200 units) ; #05-002 (1,000 units)

Description

HIV-1 reverse transcriptase is an RNA-dependent DNA polymerase of HIV-1 virus, subtype B origin (1). It also has RNaseH activity and is an enzyme indispensable to the reproduction of AIDS virus.

The product is uniquely over-expressed as a recombinant protein in *E. coli* by a patented method and highly purified (2). It is composed of two subunits with molecular weight of 66 kD and 51 kD, same as the enzyme purified from HIV virus particles (Fig 1).

Applications

- It is highly useful for screening specific inhibitors for HIV virus as a drug for treating AIDS (3).
- 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.
- Reverse transcriptases are used in the first stage of RT-PCR reaction for converting RNA to DNA. The HIV-1 reverse transcriptase can be also applied for RT-PCR method.

Specification

Activity: 1 nanomole uptake of dTMP in 10 min at 37°C is considered 1 unit using poly(rA) and oligo(dT) as template and primer. Activity was measured in 50 mM Tris-HCl (pH 8.3), 10 mM MgCl₂, 50mM KCl, 3 mM DTT, 0.1% Nonidet P-40, 20 µg/ml poly(rA) · oligo(dT)₁₂₋₁₈, 0.5 mM [³H]dTTP, and 10-50 units/ml reverse transcriptase.

Purity: Over 90% by SDS-PAGE (CBB staining)

Protein concentration: 0.5 mg/ml as measured by BCA method

Specific activity: 5,000 units/ml

Formulation: 50% glycerol, 40 mM Tris-HCl (pH8.3), 50 mM NaCl, 5 mM MgCl₂ 0.1% Triton X-100, 10 mM mercaptoethanol

Storage: -20°C

Data Link GenBank: [AAA44988.1](https://www.ncbi.nlm.nih.gov/nuclot/AAA44988.1)

Reference

1. Adachi A, et al., J. Virol. 59, 284 (1986) PMID: 3016298
2. Saitoh A, et al., Microbiol. Immunol. 34:509-521 (1990) PMID:1699113
3. Fischl MA, et al., N. Engl. J. Med. 317,185 (1987) PMID: 329089

Fig. 1: Polyacrylamide gel electrophoresis of HIV-1 reverse transcriptase protein

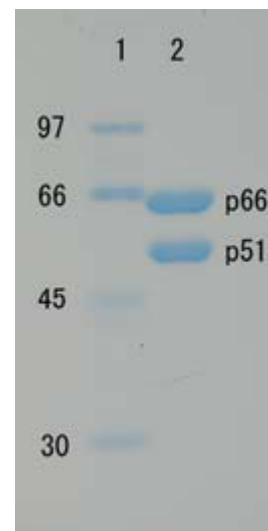
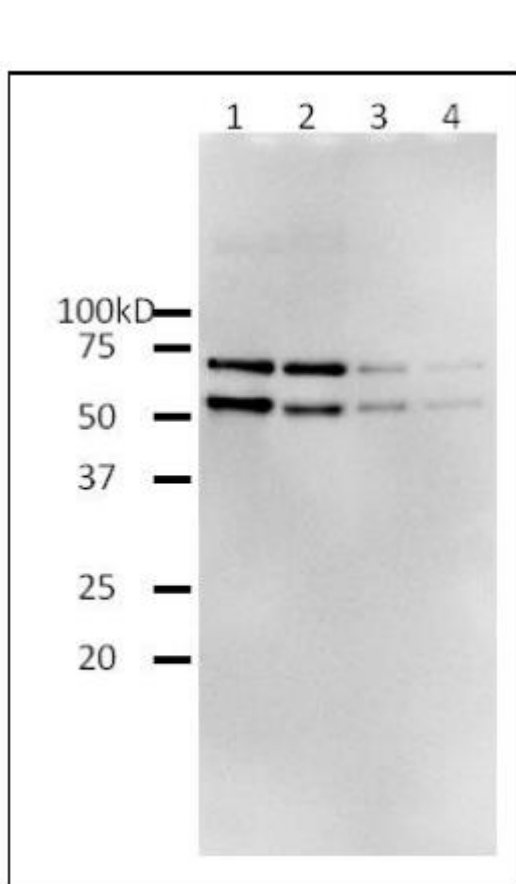


Fig.2 Western Blot of functional recombinant full-length HIV-1 reverse transcriptase by using anti-HIV-1

Reverse Transcriptase antibody catalog #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.