

HIV-1 Protease E.coli

Product Data Sheet

Type: Active

Source: E. coli

Species: Human

Cat. No.:

RH1P0001

(0.1 mg)

Description

Total 99 AA. MW: 10.8 kDa (monomer), protein active as dimer

Introduction to the Molecule

Retroviral protease from HIV-1 virus is an enzyme important in the life cycle of the virus. It is expressed in the infected cells as a part of Gag-Pol polyprotein from which it is autocatalytically released after formation of immature viral particle. The enzyme subsequently cleaves the other parts of viral polyproteins causing the maturation of the virus. In HIV-infected patients the enzyme is a subject of intensive mutagenesis and mutants resistant to applied medicines are produced as a consequence of the selection pressure. HIV-1 protease is active as a homodimer.

Research topic

Others

Amino Acid Sequence

PQITLWQRPL VTIKIGGQLK EALLDTGADD TVLEEMNLPG RWKPKMIGGI GGFVKVRQYD QILIEICGHK AIGTVLVGPT
PVNIIGRNLL TQIGCTLNF

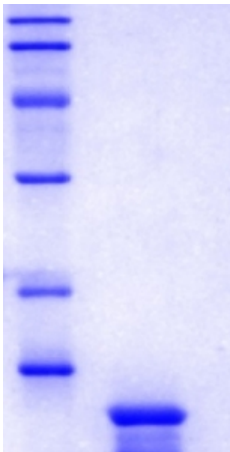
Source

E. coli

Purity

Purity as determined by densitometric image analysis: >95%

SDS-PAGE gel



14% SDS-PAGE separation of Human HIV-1 Protease

1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa

2. reduced and heated sample, 2.5 µg/lane

Formulation

20 mM Tris, 20 mM MES, 200 mM NaCl, 1mM EDTA, 10% (v/v) glycerol, 0,05% 2-mercaptoethanol, pH 6.5 - filtered (0.4 µm), frozen

Reconstitution

Defrost at ambient temperature.

Shipping

On ice. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store protein at -80°C. Protein remains stable until the expiry date when stored at -80°C. Avoid repeated freezing/thawing cycles.

Quality Control Test

SDS PAGE to determine purity of the protein.

Active site titration by tightly binding inhibitor.

Applications

Crystallography, Inhibitor screening, Kinetic studies

Note

$K_m = 15.1 \mu\text{M}$

$K_{cat} = 30 \text{ s}^{-1}$

$K_{cat}/K_m = 1981 \text{ mM}^{-1} \text{ s}^{-1}$ with peptide substrate

KARVF(NO₂)VRKA

(F(NO₂) ... p-nitrophenylalanine)

References to this Product

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- Ingr M, Uhlikova T, Strisovsky K, Majerova E, Konvalinka J. *Kinetics of the dimerization of retroviral proteases: the "fireman's grip" and dimerization*. Protein Sci. 2003 Oct;12 (10):2173-82
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