

Product Data Sheet

Human Immune Deficiency Virus (HIV-1) Glycoprotein protein 41 (gp41) Antibodies

□ Cat # AB-16010

Rabbit Anti HIV-1 gp41 IgG

Size: □ 1 ml

Human immunodeficiency virus (HIV) is a retrovirus that can lead to a condition in which the immune system begins to fail, leading to opportunistic infections. HIV primarily infects vital cells in the human immune system such as helper T cells (specifically CD4+ T cells), macrophages and dendritic cells. HIV infection leads to low levels of CD4+ T cells through three main mechanisms: firstly, direct viral killing of infected cells; secondly, increased rates of apoptosis in infected cells; and thirdly, killing of infected CD4+ T cells by CD8 cytotoxic lymphocytes that recognize infected cells. When CD4+ T cell numbers decline below a critical level, cell-mediated immunity is lost, and the body becomes progressively more susceptible to opportunistic infections. HIV was classified as a member of the genus *Lentivirus*, part of the family of *Retroviridae*. Lentiviruses have many common morphologies and biological properties. Many species are infected by lentiviruses, which are characteristically responsible for long-duration illnesses with a long incubation period. Lentiviruses are transmitted as single-stranded, positive-sense, enveloped RNA viruses. Upon entry of the target cell, the viral RNA genomes are converted to double-stranded DNA by a virally encoded reverse transcriptase that is present in the virus particle. This viral DNA is then integrated into the cellular DNA by a virally encoded integrase so that the genome can be transcribed. Once the virus has infected the cell, two pathways are possible: either the virus becomes latent and the infected cell continues to function, or the virus becomes active and replicates, and a large number of virus particles are liberated that can then infect other cells.

- tat (HIV trans-activator) plays an important role in regulating the reverse transcription of viral genome RNA ensuring efficient synthesis of viral mRNAs as well as regulating the release of the virions from the infected cells. Tat is expressed as 72-amino acid one-exon Tat as well as the 86-101 amino-acid two-exon Tat playing an important role early in HIV infection. Tat (14-15kDa) binds to the bulged genomic RNA stem-loop secondary structure near the 5' LTR region forming the Tat Responsive element (TAR)

Source of Antigen and Antibodies

Antigen	E. coli derived recombinant HIV-I protein, DEV-I (contains the C- terminus of gp120 and most of gp41).
Ab Host/type	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Shipping Conditions:

Antibody is shipped lyophilized at ambient temperature or in solution at 4°C.

Storage Procedures:

In lyophilized form, for long periods, store at 4°C in a dry environment. After reconstitution, if not intended for use within a month, aliquot and store at -20°C.

Reconstitution:

Reconstitute with H₂O. Mix gently, wash the sides of the vial and wait 30-60 seconds before use.

Stability / Shelf Life:

1- year lyophilized, 6 month in solution at 4°C.

Suggested Use

Immunoreactive with HIV-I gp41. Generates a Strong positive control spot on HIVsav 1+2. Generates 1 OD (410nm) at a dilution of 1: 250 on AS 1001 (DEV-1) ELISA.

Reference: Chan DC (1998) Cell 93, 681-684; Buzon V (2010) PLOS Pathol. 6, e1000880; Lalezari JP (2003) N. Eng. J. Med. 348, 2175-2185; Rot MJ (2004) Curr. Pharm. 10, 1805-1805

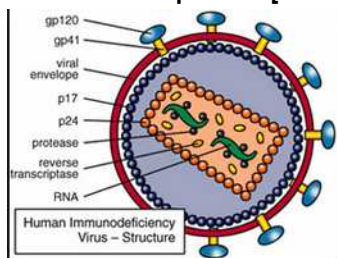
Usage:

This item is for LABORATORY RESEARCH USE ONLY.

AB-16010

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Viral structural proteins [edit source]



- gag (group-specific antigen) codes for the precursor gag polyprotein which is processed by viral protease during maturation to MA (matrix protein, p17); CA (capsid protein, p24); SP1 (spacer peptide 1, p2); NC (nucleocapsid protein, p7); SP2 (spacer peptide 2, p1) and P6 protein.
- pol codes for viral enzymes reverse transcriptase (RT) and RNase H, integrase (IN), and HIV protease (PR). HIV protease is required to cleave the precursor Gag polyprotein to produce structural proteins, RT is required to transcribe DNA from RNA template, and IN is necessary to integrate the double-stranded viral DNA into the host genome.
- env (for "envelope") codes for gp160, which is cleaved by a protease, furin, within the endoplasmic reticulum of the host cell. The post-translational processing produces a surface lipoprotein, gp120 or SU, which attaches to the CD4 receptors present on lymphocytes, and gp41 or TM, which embeds in the viral envelope to enable the virus to attach to and fuse with target cells.

India Contact:

Life Technologies (India) Pvt. Ltd.

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi - 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com