

Recombinant HIV P24 Protein, His-tagged

Cat. No. HUM-410 Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant HIV-1 p24 protein is produced in E. coli and fused with a His-tag.
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Tag	His
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Background

Human immunodeficiency virus (HIV) is a retrovirus (genus Lentivirus) with a single-stranded, positive-sense RNA genome. Upon entry of the target cell, the viral RNA genome is 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 allowing the genome to 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 to infect other cells. Infection with HIV leads to a condition in which the immune system begins to fail, leading to opportunistic infections. HIV primarily infects cells in the human immune system including CD4 T cells, macrophages and dendritic cells. Infection subsequently results in low levels of CD4 T cells via direct viral killing of infected cells, increased rates of apoptosis in infected cells and 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.

The gag gene of HIV-1 encodes a precursor protein known as Pr55Gag. The viral protease PR cleaves this precursor to generate p17, p24, p7, and p6 proteins which are required for virus particle assembly. p24 is a major viral core structural protein. Its measurement is commonly used as an indicator of HIV-1 infection and viral load. P24

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is a 24–25 kDa protein and present at high copy number in HIV-1 virions. The onset of symptoms of AIDS correlates with increased levels of virus and p24 in the blood and a reduction in the number of CD4 T-cells which can be detected as early as 2 weeks after HIV infection using immunoassays. Decrease in the level of antibodies to p24 and p24 antigen has been considered to be one of the most useful prognostic markers for use in assays. Fourth-generation tests can now detect both HIV antibodies and p24 antigens, whereas older versions only looked for antibodies, resulting in a quicker diagnosis compared to previous generation tests. Most diagnostic kits to detect HIV antibodies incorporate p24, in addition to envelope glycoproteins.

Purity >95% purity

Formulation DPBS pH7.4

Applications Suitable for use in ELISA, western blot and lateral flow immunoassay.

Notes This product is intended for research and manufacturing uses only. It is not a diagnostic device. The user assumes all responsibility for care, custody and control of the material, including its disposal, in accordance with all regulations.

Type Recombinant

ClassID 1 Infectious Disease

GENE INFORMATION

Synonyms HIV P24 [HIV-1/Clade C]

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