ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Recombinant (E. coli) HIV-1 gp41/gp120, protein (soluble)

Cat. HGP412-R Recombinant (E. coli) HIV-1 gp41/gp120, protein (soluble) **SIZE**: 100 ug

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 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 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.

gp41 is a glycoprotein non-covalently-bound to gp120, and provides the second step by which HIV enters the cell. It is originally buried within the viral envelope, but, when gp120 binds to a CD4 receptor, gp120 changes its conformation, causing gp41 to become exposed, where it can assist in fusion with the host cell. Fusion inhibitor drugs such as enfuvirtide block the fusion process by binding to gp41. The env gene does not, in fact, code for gp120 and gp41, but for a precursor to both, gp160. During HIV reproduction, the host cell's own enzymes cleave gp160 into gp120 and gp41.

A polyclonal caprine (goat) antibody is in phase II human clinical trials that targets, among others sites, the GP41 transmembrane glycoprotein. This is a new class of treatment for HIV infection. The trials are being conducted for a patented biologic developed by Virionyx, a New Zealand Company.

Source of Antigen and Antibodies

Cat# HGP412-R Contains all the immunogenic determinants found in gp41 and a small portion of gp120. rHIV 1 is a non-glycosylated 233aa polypeptide chain with a molecular mass of 27275.88. #HGPP412-R is a recombinant protein expressed in E. coli and purified (>95%). It is supplied in 0.5X PBS with 0.05% PBS with 0.05% SDS, pH 9.7 in liquid at 0.5-1 mg/ml (see lot sp concn on the vial) or in powder form. **Reconstitute** powder in water**.** Store at -20oC for ~1 year.

Storage

Short-term: unopened, undiluted liquid vials for less than a week at 4oC.

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 12 months at –20oC or below.

Shipping: 4oC for solutions and room temp for powder.

Recommended Usage

Western Blotting (100-500 ng/lane)

ELISA (0.1-1 ug/ml indirect ELISA or to at 1-10 ug/ml in ELISA.

Specificity & Cross-reactivity

Immunoreactive with sera of HIV-infected individuals.

General References: Caffrey M (2001) BBA 1536, 116-122; Admason DC (1999) J. Neurosci. 19, 64-71

*This product is for in vitro research use only.

Related material available from ADI

Catalog#	ProdDescription
HGP13-R	Recombinant (E. coli) HIV gp13 protein (HIV-gp13 Subtype O), soluble
HGP361-R	Recombinant (P. pastoris) HIV-2 gp36 protein (insoluble)
HGP362-R	Recombinant (E. coli) HIV gp36 protein (soluble)
HGP410-R	Recombinant (E. coli) HIV-1 gp41 protein (insoluble)
HGP411-R	Recombinant (E. coli) HIV-1 gp41, protein (soluble)
HGP412-R	Recombinant (E. coli) HIV-1 gp41 protein (Contains all the immunogenic determinants found in gp41 and a small portion of gp120) (soluble)
RP-544	Recombinant HIV-1 gp41 100 ug
RP-545	Recombinant HIV-1 gp41 Long (513-674 a.a.) 100 ug

HGP412-R 100809A

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