Recombinant Human Immunodeficiency Virus Full-Length Gag Protein [HIV-1/Clade B]

Cat. No. HUM-399 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	HIV Gag protein (HIV-1/Clade B), a highly purified full-length recombinant protein manufactured in E. coli at
Background	Human immunodeficiency virus (HIV) and other primate lentiviruses assemble at the plasma membrane and are released by budding from the cell surface. This mode of assembly allows the viral capsid to acquire a host cell-derived lipid envelope which protects it from the environment. HIV-1 assembly is controlled primarily by the Gag protein. Gag encodes the capsid proteins (group specific antigens), which are the core structural proteins of HIV. HIV Gag protein is encoded by the HIV gag gene, HXB2 nucleotides 790-2292. The precursor is the p55 myristoylated protein, which is processed to p17 (MAtrix), p24 (CApsid), p7 (NucleoCapsid), and p6 proteins, by the viral protease (PR). Gag associates with the plasma membrane, where virus assembly takes place. The 55- kDa Gag precursor is called assemblin to indicate its role in viral assembly. Gag recruits all the elements required for the formation of a fully infectious virion, which includes both viral and cellular components. Gag also provides the principal driving force for virus assembly, as illustrated by the fact that HIV-1 Gag can efficiently form virus-like particles even when expressed in the absence of other viral proteins (Gheysen et al., 1989). Gag thus constitutes an autonomous molecular machine for particle assembly. Clinical trials are still ongoing to develop an effective vaccine for HIV. Effective vaccines are required to elicit a range of responses, including neutralising antibodies and T-cells. In natural HIV infections, immune responses to Gag are associated with lower viral loads in infected hosts. It has been shown that boosting vaccines with Gag

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	virus-like particles as subunit vaccines or Gag produced in vivo by other vaccine vectors, gives high-level, broad multifunctional responses, with memory T-cell responses suitable for early virus control via CD8( ) T-cells at the site of infection, control of spread from the entry portal, and control of viraemia when infection is established (Williamson and Rybicki, 2016). One example of a gag containing vaccine was V520 which contained an attenuated adenovirus that served as a carrier for three subtype B HIV genes (gag, pol and nef), although this was ultimately unsuccesful in Phase 2b studies. More recently gag has been used succesfully in a complementary prime boost vaccination, in which prime and boost favoured distinct types of T cell immunity and improved viral vectored immunization, including mobilization of protective CD8 T cells to the site of virus infection (Ngu et al., 2018).
Purity	Greater than 90% purity and presented lyophilized.
Applications	Suitable for use in ELISA and western blot.
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 Full-Length Gag [HIV-1/Clade B]

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