

gp140 (HIV-1/Clade A, BG505) Recombinant Protein

BACKGROUND

Envelope glycoprotein gp140 is a soluble ectodomain of the HIV-1 envelope spike derived from the gp160 precursor. Following proteolytic cleavage of gp160, gp120 and gp41 remain associated as heterodimers that assemble into trimeric envelope spikes responsible for viral attachment and membrane fusion. The gp140 construct contains the complete gp120 ectodomain together with the extracellular portion of gp41, preserving key structural and antigenic features of the native viral envelope. gp140 binds the primary receptor CD4 and attachment factors including DC-SIGN and heparan sulfate proteoglycans (HSPGs). CD4 engagement triggers conformational changes that ultimately promote fusion of the viral and host cell membranes. Because it retains native antigenic epitopes, recombinant gp140 is widely used for HIV vaccine research, antibody characterization, receptor-binding studies, and diagnostic assay development.

PRODUCT SPECIFICATIONS

Field	Description
Description	gp140 (HIV-1/Clade A, BG505.E6M.ENV.C2) Recombinant Protein
Catalog Number	IV-gp140-BG505
GenBank Accession	ABA61516.1
Expression System	Human Embryonic Kidney (HEK293) cells
Protein length	Amino acids 32-659 (Asn32-Ala659)
Purity	>95% as determined by SDS-PAGE
Formulation	1 µg/µL in PBS (pH 7.4), no preservative
Size	50 µg
Applications	ELISA, Immunogen, WB, etc
Organism	Human Immunodeficiency Virus Type-1 (HIV-1), Clade A, BG505 Strain
Predicted Molecular Weight	~140 kDa (monomer)

APPLICATIONS

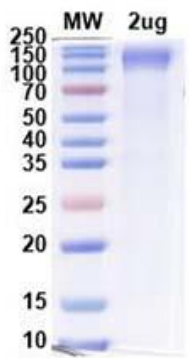
- **ELISA** — Suitable for antigen detection, assay development, and antibody sorting/screening.
- **Immunogen** — Useful for antibody production and vaccine-related studies.
- **SDS-PAGE** — Appropriate as a positive control and protein characterization reagent.
- **Western Blot (WB)** — Suitable for evaluation of anti-gp140 antibody reactivity.

Note: Optimal antibody concentration should be determined by the end user for each specific application and sample type. Titration is recommended to achieve optimal signal-to-noise ratios.

STORAGE & STABILITY

Recommended Storage	Store at -20 °C –70 °C for up to twelve months from receipt.
Short-Term Stability	Stable for at least 1 month at 2–8 °C from the date of shipment under appropriate conditions.
Handling	Avoid repeated freeze-thaw cycles and use a manual-defrost freezer when possible. Upon receipt, aliquot the protein into single-use volumes to minimize degradation and preserve activity.

QUALITY CONTROL



SDS-PAGE: Purified recombinant HIV-1 gp140 (Clade A) protein

PRODUCT DESCRIPTION

IV-gp140-BG505 is a recombinant HIV-1 envelope glycoprotein (Env) derived from the BG505 transmitted/founder (Clade A) isolate. The protein is transiently expressed in HEK293 cells, providing mammalian post-translational modifications and glycosylation that support native-like antigenic properties. The purified protein is supplied at 1 mg/mL in phosphate-buffered saline (PBS, pH 7.4), contains no preservatives, and is sterile-filtered through a 0.2-µm membrane prior to aliquoting.

The construct comprises the soluble gp140 ectodomain of the BG505 Env sequence (GenBank: ABA61516.1) and retains the native gp120/gp41 cleavage site sequence. A C-terminal GSGSG linker followed by a Strep-tag II (WSHPQFEK) facilitates affinity purification, protein detection, and capture-based applications, including ELISA, Western blotting, and surface plasmon resonance (SPR).

As a mammalian cell-expressed HIV-1 Env glycoprotein, the protein is extensively N-glycosylated, preserving important conformational and glycan-dependent epitopes relevant to HIV-1 research. This recombinant protein is suitable for a wide range of basic research applications, including antibody screening, epitope mapping, immunoassay development, receptor-binding studies, and vaccine antigen research.

Recombinant gp140 (HIV-1/Clade A) SEQ:

NLWVTVYYGVVPVKDAETTLFCASDAKAYETEKHNWATHACVPTDPNPQEIHLENVTEEFNMWKNNMVEQMHTDII
SLWDQSLKPCVKLTPLCVTLQCTNVTNNITDDMRGELKNCSFNMTEL RDKKQKVYSLFYRLDVVQINENQGNRSNN
SNKEYRLINCNTSAITQACPKVSFEPIPIHYCAPAGFAILKCKDKKFNGTGPCPSVSTVQCTHGIKPVVSTQLLLNG
SLAEVEVMIRSENITNNAKNILVQFNTVPQINCTRPNNNTRKSIRIGPGQAFYATGDIIGDIRQAHCTVSKATWNET
LGKVVQQLRKHFGNNTIIRFANSSGGDLEVTTHSFNCGGEFFYCNTSGLFNSTWISNTSVQGSNSTGSNDSITLPCR
IKQIINMWQRIGQAMYAPPIQGVIRCVSNITGLILTRDGGSTNSTTETFRPGGGMDRDNWRSELYKYKVVKIEPLGV
APTRCKRRVVGRRRRRRRAVGIGAVFLGFLGAAGSTMGAASMTLTVQARNLLSGPVQQQSNLLRAIEAQQHLLKLTWV
GIKQLQARVLAVERYLRDQQLLGIWGC SGKLI CCTNPWNSSWSNRNLSEIWDNMTWLQWDKEISNYTQIIYGLLEE
SQNQQEKNEQDLLAGSGSGSWSHQPFEK

USAGE & SAFETY INFORMATION

For research use only. Not for use in diagnostic procedures. This product is intended solely for laboratory research by qualified personnel.