Anti-HIV GP120 [JM4] Standard Size Ab03087-1.159

This chimeric mouse antibody was made using the variable domain sequences of the original VHH format for improved compatibility with existing reagents assays and techniques.

Isotype and Format: Mouse IgG1-Fc fusion
Clone Number: JM4
Alternative Name(s) of Target: Glycoprotein 120; SU; surface protein gp120; env polyprotein; envelope glycoprotein gp16
UniProt Accession Number of Target Protein: P04578
Published Application(s): functional assay, neutralization, SPR, therapeutic, ELISA, FC
Published Species Reactivity: HIV-1
Immunogen: This antibody was raised by panning a phage library created by immunizing 2 llamas with either gp120 or purified cross-linked gp140-S-S-M64U1 complex.
Specificity: This antibody is specific for the gp120 envelope protein of HIV-1. HIV are two species of Lentivirus (a subgroup of retrovirus) that infect humans. Over time, they cause acquired immunodeficiency syndrome (AIDS), a condition in which progressive failure of the immune system allows life-threatening opportunistic infections and cancers to thrive.
Application Notes: This antibody was characterized using an ELISA. The ELISA was preformed using the nanobody version of this antibody on the gp120 antigen. Further to test the ability of this antibody to neutralize HIV-1. A neutralization assay was preformed by incubating pseudovirons with the nanobody version of this antibody after which the infectivity of the incubated pseudovirons was tested on TZM-bl cells. Furthermore the influence of this antibody on the binding of gp120 to its cellular receptor CCR5 was assessed by flow cytometry. Gp120 was preincubated or not with 3 molar equivalents of sCD4 then futher incubated with the nanobody version of this antibody. This mixture was then added to CHO-K1 cells overexpressing CCR5 and analyzed using flow cytometry. Finally surface plasmon resonance was preformed on HIV-1 env proteins using the nanobody version of this antibody. This was done to determine the affinity of this antibody to the HIV-1 env proteins (Matz et al, 2013; pmid:23152508). The crystal structure of the nanobody version of this antibody in complex with gp120 and M48U1 was solved by molecular replacement using Phaser in the CCP4 program suite. Furthermore the structure of the nanobody version of this antibody in complex with gp120 and M48U1 was determined using x-ray crystallography (Acharya et al, 2013; pmid:23843638). To test the effect of GPI bound to the nanobody version of this antibody on cell-free HIV-1 infection, Mss-CCR5 cells transduced with GPI bound to the nanobody version of

this antibody were infected with HIV-1 strains Bru-3, Bru-Yu2, JRCSF, AD8, THRO.c, and Mj4. Further the T cell T cell transmission was measured using CEMss-CCR5 cells incubated with HIV-1 JRCSF and Jurkat-CCR5 cells incubated with HIV-1. Then the ability of GPI bound to the nanobody version of this antibody to disturb the transmission was assayed. Finally the single-cycle infectivity of HIV-1 was assesed under influence of the GPI bound nanobody version of this antibody (Liu et al, 2016; pmid:27654286). The antigenicity of consensus B HIV-1 envelope proteins on the surface of a stably transfected S2 clone B2 was assesed using flow cytometry with the nanobody version of this antibody (Huang et al, 2017; pmid:28318765).
Antibody First Published in: Matz et al. Straightforward Selection of Broadly Neutralizing Single-Domain Antibodies Targeting the Conserved CD4 and Coreceptor Binding Sites of HIV-1 gp120 J Virol. 2013 Jan; 87(2): 1137–1149. PMID:23152508
Note on publication: Few broadly neutralizing antibodies targeting determinants of the HIV-1 surface envelope glycoprotein (gp120) involved in sequential binding to host CD4 and chemokine receptors have been characterized.

Product Form

Size: 100 µg Purified antibody.
Purification: Protein A affinity purified
Supplied In: PBS with 0.02% Proclin 300.
Storage Recommendation: Store at 4ºC for up to 3 months. For longer storage, aliquot and store at -20ºC.
Concentration: 1 mg/ml.

Important note – This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.