Leinco Technologies, Inc.
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Human α4β7 Integrin (Vedolizumab) Antibody

Biosimilar Recombinant Human Monoclonal Antibody

Product Information

Product No.:	V204
Clone:	LDP-02
Isotype:	Human IgG1κ
Storage:	Sterile 2 to 8°C

Product Description

Specificity:

This non-therapeutic biosimilar antibody uses the same variable region sequence as the therapeutic antibody Vedolizumab. LDP-02 (Vedolizumab) activity is directed against human, cynomolgus and rhesus monkey α4β7 integrin. Vedolizumab binds to the α 4 β 7 integrin, but not to the α 4 β 1 or α E β 7 integrins. Vedolizumab binds to a subset of human peripheral blood memory CD4 + T lymphocytes (25%) that includes gut-homing IL-17 T helper lymphocytes as well as to eosinophils, naïve T helper lymphocytes, naïve and memory cytotoxic T lymphocytes, B lymphocytes, natural killer cells and basophils but does not bind to the majority of CD4 + T lymphocytes (60%), neutrophils and most monocytes.

Antigen Distribution:

α4β7 integrin has variable expression on circulating B and T lymphocytes.

Background:

Integrins are a large family of heterodimeric transmembrane molecules that mediate adhesion, migration, cell survival, and cell differentiation. The heterodimeric integrin receptor α4β7 is a cell surface glycoprotein that consists of β7 paired with α4 (CD49d) . The α4β7 integrin is a lymphocyte receptor for the mucosal vascular addressin MADCAM-11. MADCAM-1 is a cell adhesion leukocyte receptor expressed by mucosal venules that helps direct lymphocyte traffic into mucosal tissues and regulates the passage and retention of leukocytes2. α4β7 integrin preferentially mediates migration of lymphocytes into gastrointestinal tissue3. This interaction directs the migration of leukocytes into inflamed intestinal tissue4 and is a target for treating intestinal bowel disease.

Vedolizumab is a humanized version of the Act-1 monoclonal antibody that specifically recognizes the α4β7 integrin receptor3,4. Vedolizumab selectively blocks gut lymphocyte trafficking by inhibiting the migration of lymphocytes to the gastrointestinal mucosa during the inflammatory process5. Specifically, migration of memory T lymphocytes into inflamed gastrointestinal parenchymal tissue is inhibited. This is accomplished by blocking immune cell homing to the gut via disruption of α4β7 integrin adhesion on the cell surface of immune cells to its ligand MADCAM-1 on the intestinal endothelium6.

Vedolizumab selectively inhibits the adhesion of α 4 β 7 -expressing cells to MADCAM-1 and fibronectin but not VCAM-17. Consequently, vedolizumab does not induce the systemic immunosuppression seen with anti-α4 chain monoclonal antibodies. Rather, vedolizumab yields gut-selective anti-inflammatory activity8. Additionally, vedolizumab does not interfere with trafficking to the central nervous system3.

Known Reactivity Species:

Cynomolgus Monkey, Rhesus Monkey, Human

Expression Host:

HEK-293 Cells

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Product Datasheet

www.leinco.com

Format:
Purified No Carrier Protein

Immunogen:
Humanized version of the Act-1 monoclonal antibody. Immunogen unknown.

Formulation
This biosimilar antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.

Purity
≥95% by SDS Page, ≥95% monomer by analytical SEC

Endotoxin
≤ 1.0 EU/mg as determined by the LAL method

Storage and Stability
Functional grade preclinical antibodies may be stored sterile as received at 2-8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at ≤ -70°C.
Avoid Repeated Freeze Thaw Cycles.

Product Preparation
Recombinant biosimilar antibodies are manufactured in an animal free facility using only in vitro protein free cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.

Pathogen Testing
To protect mouse colonies from infection by pathogens and to assure that experimental preclinical data is not affected by such pathogens, all of Leinco's recombinant biosimilar antibodies are tested and guaranteed to be negative for all pathogens in the IDEXX IMPACT I Mouse Profile.

Other Applications Reported in Literature:
B,
ELISA,
FA,
FC,
LCI

Country of Origin
USA

References

1) Berlin C, Berg EL, Briskin MJ, et al. Cell. 74(1):185-195. 1993.
2) Schiffer SG, Day E, Latanision SM, et al. Biochem Biophys Res Commun. 216(1):170-176. 1995.
3) Haanstra KG, Hofman SO, Lopes Estêvão DM, et al. J Immunol. 190(5):1961-1973. 2013.
4) Feagan BG, Rutgeerts P, Sands BE, et al. N Engl J Med. 369(8):699-710. 2013.
5) Poole RM. Drugs. 74(11):1293-1303. 2014.
6) Schneider I, Allner C, Mühl L, et al. Transl Res. 253:8-15. 2023.
7) Soler D, Chapman T, Yang LL, et al. J Pharmacol Exp Ther. 330(3):864-875. 2009.
8) Fedyk ER, Wyant T, Yang LL, et al. Inflamm Bowel Dis. 18(11):2107-2119. 2012.
9) Chaparro M, Garre A, Ricart E, et al. Aliment Pharmacol Ther. 48(8):839-851. 2018.

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