

Anti-Human CD18/CR3 [Clone KIM127] — APC

Monoclonal Antibody

Product Information

Product No.: C551
Clone: KIM127
Isotype: Mouse Mouse IgG1 κ

Product Description

Specificity:

Anti-CD18/CR3 antibody (clone KIM127) recognizes an epitope on the leukocytic cell-adhesion molecule (Leu-CAM) common β chain, CD18. As such, this antigen is considered part of the Leu-CAM β integrin family of adhesion molecules. Activity is directed against immunoprecipitated human CR3 and lymphocytes expressing LFA-1. KIM127 binds to pre-activated integrins.

Antigen Distribution:

Members of the Leu-CAM β integrin family of adhesion molecules are widely distributed on circulating leukocytes.

Background:

Integrins are a large family of α/β heterodimeric transmembrane molecules that mediate adhesion, migration, cell survival, and cell differentiation¹. The leukocytic cell-adhesion molecule (Leu-CAM) family has three members, LFA-1 (CD18/CD11a), CR3 (CD18/CD11b), and p150,95 (CD18/CD11c), all of which share the β chain CD18².

KIM127 recognizes a temperature sensitive epitope on CD18, binding to lymphocytes that express LFA-1 as well as to immunopurified CR3³. KIM127 promotes LFA-1 and CR3-dependent adhesion events and enhances aggregation of the human B lymphoblastoid line JY and human T cell line MOLT-4. This aggregation is completely blocked by anti-LFA-1 antibody DA36. KIM127 is not associated with increased surface expression of CR3 or LFA-1.

KIM127 recognizes residues Gly 504, Leu 506, and Tyr 508 of CD18 in a cysteine-rich repeat located in the long loop protruding from the C-terminal end of the integrin-epidermal growth factor-like (I-EGF) 2 domain^{4,5,6}. The epitope is near the extreme bend (genu) between the integrin headpiece and stalk, buried deep in the crevice formed by the bend between the α subunit thigh and calf-1 domains, and is only accessible when the integrin is extended in its activated conformation⁶. In resting integrins, the KIM127 epitope is shielded by the α subunit⁵. KIM127 preferentially reacts with activated β_2 integrins and free β_2 subunit compared with resting β_2 integrins. A switchblade-like action that extends the headpiece of the integrin away from the plasma membrane is thought to expose the KIM127

Products are for research use only. Not for use in diagnostic or therapeutic procedures.

410 Axminister Dr, St. Louis, MO 63026

(800) 538-1145

leincoglobal@leinco.com

Product Datasheet

www.leinco.com



epitope when activated⁶.

Activation of LFA-1 ligand binding by Mn^{2+} , and to a lesser degree by Mg^{2+} in the absence of Ca^{2+} , is positively correlated with increased expression of the KIM127 epitope⁵. PMA also induces a small but consistent increase in KIM127 expression.

KIM127 was obtained from a BALB/c mouse immunized with CR3 immunopurified from a human white cell lysate³. Hybridoma lines were created by fusing spleen cells with Sp2/0 cells and screening by ELISA for their ability to bind to immunopurified CR3 and then for their ability to promote aggregation of different cell types. Mildly denaturing conditions are required during Western blotting because boiling the sample destroys the KIM127 epitope.

Known Reactivity Species:

Human

Format:

Allophycocyanin (APC)

Formulation

This Allophycocyanin (APC) conjugate is formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.4, 1% BSA and 0.09% sodium azide as a preservative.

Storage and Stability

This Allophycocyanin (APC) conjugate is stable when stored at 2-8°C. **Do not freeze.**

Applications

Applications and Recommended Usage (Quality Tested By Leinco):

WB³,

FC^{3,5,7,8,9,10,11,12}

Other Applications Reported in Literature:

ELISA³,

IP¹³,

IF Microscopy^{12, 14, 15, 16}

Country of Origin

USA

References

1. Luo BH, Carman CV, Springer TA. Annu Rev Immunol. 25:619-647. 2007.
2. Sanchez-Madrid F, Nagy JA, Robbins E, et al. J Exp Med. 158(6):1785-1803. 1983.
3. Robinson MK, Andrew D, Rosen H, et al. J Immunol. 148(4):1080-1085. 1992.
4. Stephens P, Romer JT, Spitali M, et al. Cell Adhes Commun. 3(5):375-384. 1995.

Products are for research use only. Not for use in diagnostic or therapeutic procedures.

410 Axminister Dr, St. Louis, MO 63026

(800) 538-1145

leincoglobal@leinco.com

Product Datasheet

www.leinco.com



5. Lu C, Ferzly M, Takagi J, et al. J Immunol. 166(9):5629-5637. 2001.
6. Beglova N, Blacklow SC, Takagi J, et al. Nat Struct Biol. 9(4):282-287. 2002.
7. Xie C, Shimaoka M, Xiao T, et al. Proc Natl Acad Sci U S A. 101(43):15422-15427. 2004.
8. Kuwano Y, Spelten O, Zhang H, et al. Blood. 116(4):617-24. 2010.
9. Biber G, Ben-Shmuel A, Noy E, et al. Nat Commun. 12(1):5581. 2021.
10. Chen J, Yang W, Kim M, et al. Proc Natl Acad Sci U S A. 103(35):13062-7. 2006.
11. Boras M, Volmering S, Bokemeyer A, et al. J Exp Med. 214(3):851-874. 2017.
12. Faridi MH, Altintas MM, Gomez C, et al. Biochim Biophys Acta. 1830(6):3696-710. 2013.
13. Jevnikar Z, Obermajer N, Doljak B, et al. J Leukoc Biol. 90(1):99-109. 2011.
14. Comrie WA, Babich A, Burkhardt JK. J Cell Biol. 208(4):475-91. 2015.
15. Comrie WA, Li S, Boyle S, et al. J Cell Biol. 208(4):457-73. 2015.
16. Jankowska KI, Williamson EK, Roy NH, et al. Front Immunol. 9:25. 2018.

Products are for research use only. Not for use in diagnostic or therapeutic procedures.

410 Axminister Dr, St. Louis, MO 63026

(800) 538-1145

leincoglobal@leinco.com