Recombinant Mouse CLEC9a Fc Chimera

Catalog Number: 6776-CL

DESCRIPTION

Source Chinese Hamster Ovary cell line, CHO-derived

MDP	Mouse IgG_{2A} (Glu98-Lys330)	IEGR	Mouse CLEC9a (Lys57-Ile264) Accession # NP_001192292

N-terminus C-terminus

N-terminal Sequence Analysis	Met
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	50.8 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	60-65 kDa, reducing conditions
Activity	Measured by flow cytometry for its ability to bind a ligand expressed in necrotic EL-4 mouse lymphoblast cells. When 100 ng of Recombinant Mouse CLEC9a Fc Chimera is added to 5 x 10^5 EL-4 cells, >50% of necrotic EL-4 cells bind to the protein.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

CLEC9A (C-type lectin domain family 9 member A), also known as DNGR-1, is a type II transmembrane glycoprotein member of the C-type lectin superfamily (1). Mature mouse CLEC9A consists of a 35 amino acid (aa) cytoplasmic domain with an ITAM-like motif, a 21 aa transmembrane segment, and a 182 extracellular domain (ECD) that contains a stalk region and one C-type lectin domain (CTLD) (2-4). Within the ECD, mouse CLEC9A shares 57% and 80% aa sequence identity with human and rat CLEC9A, respectively. Alternative splicing of mouse CLEC9A generates additional isoforms with insertions in the stalk region or deletions of the transmembrane segment, the CTLD, or a portion of the CTLD (2). Although the CTLD of CLEC9A structurally resembles that of other C-type lectins, it lacks the conserved residues that typically mediate calcium and carbohydrate binding. CLEC9A is expressed as a disulfide-linked homodimer of approximately 50 kDa N-glycosylated subunits (2, 4). Human CLEC9A expression is restricted to a subpopulation of BDCA-3^+ conventional dendritic cells (cDC) and $CD16^-$ monocytes (2-5). BDCA-3^+ cDC are analagous to mouse $CD8^+$ cDC which are specialized in antigenic cross-presentation in complex with MHC class I molecules (6). In mouse, CLEC9A is additionally expressed on plasmacytoid dendritic cells (3, 4). CLEC9A ligation enhances antigen uptake and processing, leading to presentation on MHC class I and cytotoxic T cell (CTL) priming (2-5, 7). Its recognition of filamentous actin in dead cells is important for triggering an immune response to necrotic cell debris (8-10). CLEC9A is also required for the presentation of viral proteins and the subsequent CTL-mediated killing of virus-infected cells (11, 12). CLEC9A signaling triggers activation of the tyrosine kinase Syk (2, 8).

References:

1. Kerrigan, A.M. and G.D. Brown (2010) Immunol. Rev. **234**:335.
2. Huysamen, C. *et al.* (2008) J. Biol. Chem. **283**:16693.
3. Caminschi, I. *et al.* (2008) Blood **112**:3264.
4. Sancho, D. *et al.* (2008) J. Clin. Invest. **118**:2098.
5. Schreibelt, G. *et al.* (2012) Blood **119**:2284.
6. Dudziak, D. *et al.* (2007) Science **315**:107.
7. Poulin, L.F. *et al.* (2010) J. Exp. Med. **207**:1261.
8. Sancho, D. *et al.* (2009) Nature **458**:899.
9. Ahrens, S. *et al.* (2012) Immunity **36**:635.
10. Zhang, J.-G. *et al.* (2012) Immunity **36**:646.
11. Iborra, S. *et al.* (2012) J. Clin. Invest. **122**:1628.
12. Zelenay, S. *et al.* (2012) J. Clin. Invest. **122**:1615.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449