Recombinant Human MMR/CD206

Catalog Number: 2534-MR

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human MMR/CD206 protein Leu19-Lys1383 (Thr399Ala) & (Leu407Phe), with a C-terminal 6-His tag Accession # P22897
N-terminal Sequence Analysis	Leu19
Predicted Molecular Mass	157 kDa

SPECIFICATIONS

SDS-PAGE	160 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. When Mannan is coated at 0.2 µg/mL (100 µL/well), the concentration of Recombinant Human MMR/CD206 that produces 50% of the optimal binding response is approximately 0.200-1.20 µg/mL.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
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

The MMR (macrophage mannose receptor) is also called MR due to its presence on cells other than macrophages, and is designated CD206, Mrc1 (mannose receptor C type 1), or CLEC13D (C-type lectin domain family 13, member D) (1-4). CD206 is a 175-190 kDa endocytic receptor that is expressed on M2 alternatively activated tissue macrophages including tumor-associated macrophages (TAMs), inflammatory dendritic cells in selected lymphoid organs, and liver, splenic, lymphatic, and dermal microvascular endothelial cells (1, 2, 5-8). The 1456 amino acid (aa) human CD206 precursor contains a signal sequence (18 aa), an extracellular domain (ECD) containing an N-terminal cysteine-rich domain, a fibronectin type II repeat, eight C-type lectin domains (CTLDs), and several N-glycosylation sites (1371 aa), a transmembrane segment and a short (46 aa) cytoplasmic domain (2-4). Metalloproteinases can mediate the shedding of the soluble ECD (2). The human CD206 ECD shares 83%, 84%, 89%, 89% and 90% aa sequence identity with mouse, rat, equine, porcine and canine CD206, respectively. The cysteine-rich domain recognizes some pituitary hormones such as LH (luteinizing hormone/lutropin) and TSH (thyroid stimulating hormone/thyrotropin), chondroitin sulfates, and sulfated N-acetylgalactosamines including sulfo-Lewis^a and -Lewis^x (1, 7, 9). The FNII domain mediates $Ca2^+$-independent binding of collagens (2, 10). The CTLDs participate in $Ca2^+$-dependent recognition of branched sugars with terminal mannose, fucose or N-acetylglucosamine that occur on many pathogenic microorganisms (7, 11). CD206 internalizes ligands in clathrin-coated vesicles, sorts them to phagosomes or early endosomes, and recycles to the cell surface (1, 6, 7). CD206 also promotes clearance of glycoproteins that promote allergy or ongoing inflammation, such as lysosomal hydrolases and myeloperoxidases (1, 2, 5-7). It is involved in T cell polarization and production of pro- and anti-inflammatory cytokines (1, 2). It facilitates peptide presentation on MHC II, and cross-presentation on MHC I which is important for tumor immunogenicity (1, 2, 12). This function may be blocked by engagement of CD206 on TAMs by tumor mucins (8).

References:

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