Recombinant Human CD74

Catalog Number: 3590-CDB

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human CD74 protein Gln73-Met232, with an N-terminal HA (YPYDVPDYA) tag Accession # NP_004346.1
N-terminal Sequence Analysis	Tyr (of HA tag)
Predicted Molecular Mass	19 kDa

SPECIFICATIONS

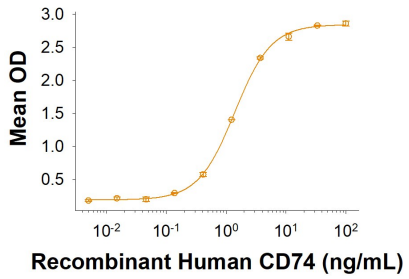
SDS-PAGE	25-33 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. Recombinant Human CD74 (Catalog # 3590-CDB) binds to Human CD74 Antibody (Catalog # AF3590) with an ED_{50} of 0.300-3.60 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 µg/mL in water.
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.

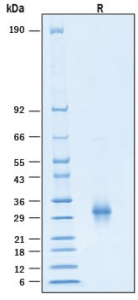
DATA

Binding Activity



Recombinant Human CD74 Protein Binding Activity. Measured by its binding ability in a functional ELISA. Recombinant Human CD74 (Catalog # 3590-CDB) binds to Human CD74 Antibody (Catalog # Catalog # AF3590) with an ED_{50} of 0.300-3.60 ng/mL.

SDS-PAGE



Recombinant Human CD74 Protein SDS-PAGE. 2 µg/lane of Recombinant Human CD74 Protein (Catalog # 3590-CDB) was resolved with SDS-PAGE under reducing (R) condition and visualized by Coomassie® Blue staining, showing bands at 25-33 kDa.

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Catalog Number: 3590-CDB

BACKGROUND

CD74, also known as Invariant chain (Ii) and p33, is a type 2 transmembrane glycoprotein that plays an important role in adaptive immunity, inflammation, and cancer (1). Mature human CD74 consists of a 46 amino acid (aa) cytoplasmic domain, a 26 aa transmembrane segment, and a 224 aa extracellular domain (ECD) that contains one thyroglobulin type 1 domain (2, 3). Alternate splicing and the use of a second initiation start site result in the synthesis of additional isoforms (ranging from 31 kDa - 41 kDa) that differ by the presence or absence of a 16 aa N-terminal extension and/or a 64 aa internal section of the ECD (4). This recombinant protein does not contain the 64 aa insertion. Within comparable regions of the ECD, human CD74 shares 70% and 73% aa sequence identity with mouse and rat CD74, respectively. CD74 functions as a chaperone for MHC class II molecules on antigen presenting cells and undergoes progressive proteolysis during class II trafficking and antigenic peptide loading (5). Full length CD74 assembles into trimers which then associate with class II molecules in nonameric complexes on the cell surface (6, 7). CD74 also associates with CD44 and binds with high affinity to the cytokine MIF, leading to inflammatory leukocyte responses, protection from tissue fibrosis, B cell proliferative and survival signaling, and the up-regulation of angiogenic factors in endometrial stromal cells (8 - 13). MIF binding notably induces the proteolytic cleavage of the CD74 intracellular domain which then promotes B cell differentiation (12). CD74 is up-regulated on non-immune cells at sites of inflammation including amyloid beta plaques and atherosclerotic plaques (14, 15). It is also up-regulated in a variety of cancers and enhances tumorigenicity, tumor angiogenesis, and metastasis (1, 16).

References:

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