Recombinant Mouse DDR1 Fc Chimera

Catalog Number: 6416-DR

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived

Mouse DDR1 (Met1 - Thr414) Accession # Q03146	IEGRMDP	Mouse IgG_{2A} (Glu98 - Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Asp22
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	71.1 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	85-95 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Immobilized Collagen I at 10 µg/mL (100 µL/well) can bind Recombinant Mouse DDR1 Fc Chimera with an apparent K_D < 20 nM. **Optimal dilutions should be determined by each laboratory for each application.**
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 300 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

DDR1, also known as CAK, NEP, CD167a, and EDDR1, is a 120 - 140 kDa type I transmembrane glycoprotein belonging to the discoidin-like domain-containing subfamily of receptor tyrosine kinases (1, 2). Mature mouse DDR1 consists of a 395 aa extracellular domain (ECD) that includes the discoidin-like domain, a 27 aa transmembrane segment, and a 470 aa cytoplasmic domain with the tyrosine kinase domain (3). Within the ECD, mouse DDR1 shares 93% aa sequence identity with human and rat DDR1, respectively. Alternate splicing of mouse DDR1 generates an additional isoform that lacks a portion of the cytoplasmic domain encompassing the Shc-interacting NPxY motif (4). DDR1 is expressed on epithelial tissues, activated monocytes and neutrophils, smooth muscle cells, and in several cancers (1, 2). It mediates cellular adhesion and migration through interaction of the discoidin-like domain with the triple helical structure of collagens I - V (5, 6). Collagen binding induces prolonged tyrosine autophosphorylation of DDR1, including within the NPxY motif (5, 6). Collagen binding can also induce the metalloproteinase-dependent cleavage of DDR1, thereby liberating a tyrosine phosphorylated 60 kDa C-terminal fragment and a 60 kDa ECD fragment (7, 8). DDR1 is expressed as a dimer on the cell surface independently of ligand binding (9). Oligomerization enhances collagen binding and also modulates collagen fibrillogenesis (10, 11). Collagen-induced activation of DDR1 is inhibited by the association of DDR1 with E-Cadherin at epithelial cell junctions (12). Expression of DDR1 on arterial smooth muscle cells limits smooth muscle cell migration and the development of proteoglycan plaques during atherogenesis (13). The overexpression of particular DDR1 isoforms in glioblastoma promotes MMP-2 activation and increased tumor cell invasiveness (14).

References:

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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