Recombinant Human VAP-B

Catalog Number: 5855-VB

DESCRIPTION

Source	*E. coli*-derived human VAP-B protein Ala2-Pro132, with a C-terminal 6-His tag Accession # O95292
N-terminal Sequence Analysis	Ala2
Predicted Molecular Mass	15.6 kDa

SPECIFICATIONS

SDS-PAGE	17 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When rmEphB2/Fc Chimera (Catalog # 467-B2) is coated at 2 µg/mL (100 µL/well), the concentration of rhVAPB that produces 50% of the optimal binding response is found to be approximately 0.3-1.5 µg/mL.
Endotoxin Level	<0.01 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

Vesicle-associated membrane protein (VAMP)-associated protein B (VAP-B; also VAMP-B) is an ~30 kDa ubiquitously expressed type IV transmembrane protein belonging to the VAP family (1, 2). It is found in endoplasmic reticulum (ER), Golgi and other membranes as a homodimer or a heterodimer with VAP-A, probably associating through a GxxxG motif in the transmembrane regions (1, 2). Human VAP-B cDNA encodes 243 amino acids (aa) that include a 222 aa cytoplasmic domain and a 21 aa C-terminal membrane anchor. The cytoplasmic domain contains a mobile sperm protein (MSP) domain (aa 7 - 124) and a coiled-coil region (aa 159 - 196). Human VAP-B shares 90%, 89%, 96%, 96% and 94% aa identity with mouse, rat, canine, bovine and porcine VAP-B, respectively. VAP-A and VAP-B MSP domains recruit FFAT (two phenylalanines in an acidic tract)-motif-containing proteins to the cytosolic surface of ER membranes (2 - 4). FFAT proteins mediate many of the effects of VAPs on regulation of membrane transport, phospholipid biosynthesis, microtubule organization, and the unfolded protein response (2, 3). VAPs also interact with some SNARE and viral proteins (2). A human polymorphism of VAP-B, P56S, is found in three familial motor neuron diseases, notably the amylotrophic lateral sclerosis variant ALS8 (2). It produces a non-functional protein that can dimerize with and inhibit function of normal VAP-B, leading formation of intracellular aggregates and increased ER-stress-induced death of motor neurons (5 - 7). It can also promote cleavage and secretion of soluble VAP-B, which can then function as a ligand for EPH receptors (8). A naturally occurring 99 aa isoform of VAP-B that diverges at aa 71 within the MSP domain is termed VAP-C (1, 9). It also appears to be a negative regulator of VAP-A and VAP-B (9). While VAP-B is used by hepatitis C virus (HCV) for its propagation, VAP-C inhibits HCV propagation (9).

References:

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