

MSP1D1-His “Ultra Dark”, human

Cat. No.: 26412 (2 mg)

Description	MSP1D1-His "Ultra Dark" is a his-tagged membrane scaffold protein (MSP) derived from apolipoprotein A-I that wraps around a phospholipid bilayer patch to form stable, water-soluble nanodiscs, enabling detergent-free solubilization and stabilization of membrane proteins in a near-native lipid environment. Its defining feature is the replacement of all tryptophan and tyrosine residues with non-fluorescent side chains, resulting in an almost non-detectable UV absorbance at 280 nm, allowing for straightforward detection and accurate concentration determination of integrated membrane proteins within the disc.
Form	Lyophilized
Amount	2 mg
Available origins	Human
Purity	> 90% (Determined by SDS-PAGE)
Number of amino acids	222
Molecular mass	25.75 kDa
Extinction coefficient (in H₂O) ϵ_{280}	Ext. coefficient 2980 Abs 0.1% (=1 g/l) 0.116
Buffer	20 mM TRIS pH 7.4, 100 mM NaCl, 0.5 mM EDTA
Affinity tag	His
Sequence	GHHHHHHH DYDIPTT ENLYF QG LKLLDNFDSVTSTFSKLREQL G PVTQEFFDNLEKETEGLRQEMS KDLEEVKAKVQ PFLDDFQKKFQEEMELFRQKVE PLRAELQEGARQKLHELQEKLS PLGEEMRDRARAHVDALRTHLA PFSDELRLQRLAARLEALKENG G ARLAEFHAKATEHLSTLSEKAK PALEDLRQGLL PVLESFKVSFLSALEEFTKKLNTQ
Stability & Storage	Lyophilized protein: stable at -20°C for several months. Reconstituted protein: stable at 2-8°C for several days.
Shipping	Room temperature
Hazards	Product is not classified as hazardous according to (EC) No 1272/2008 [CLP]. A Material Safety Data Sheet is provided.

Application	The reduced UV absorption at 280 nm makes MSP1D1-His "Ultra Dark" particularly advantageous over standard MSPs and alternative solubilization agents such as AASTY or SMA, enabling reliable UV-Vis based concentration determination and significantly reduced background interference in fluorescence-based assays and label-free detection methods. Beyond its spectroscopic advantages, MSP1D1-His "Ultra Dark" is well suited for Cryo-EM, ELISA, and protein-protein interaction studies where unrestricted ligand access is required, and is further compatible with cell-free expression systems and a broad range of biomedical, proteomic, and protein biochemistry applications.
Recommended usage	ELISA: dilute 1:100
Manufacturer	Cube Biotech

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