

MSP1E3D1-His “Ultra Dark”, human

Cat. No.: 26452

Description	MSP1E3D1-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 of 12–14 nm in diameter, enabling the stabilization of membrane proteins in a defined 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 intrinsic fluorescence and UV absorbance at 280 nm, allowing for straightforward detection and accurate concentration determination of integrated membrane proteins within the disc. This product contains a His-tag, keep that in mind when choosing the affinity tag for your membrane protein.
Form	Lyophilized
Amount	2 mg
Available origins	Human
Purity	> 90% (Determined by SDS-PAGE)
Number of amino acids	277
Molecular mass	32.37 kDa
Extinction coefficient (in H₂O) ϵ_{280}	Ext. coefficient 2980 Abs 0.1% (=1 g/l) 0.092
Buffer	20 mM TRIS pH 7.4, 100 mM NaCl, 0.5 mM EDTA
Affinity tag	His tag
Sequence	GHHHHHHH DYDIPTT ENLYFQG STFSKLREQLG PVTQEFFDNLEKETEGLRQEMS KDLEEVKAKVQ PFLDDFQKKFQEEMELFRQKVE PLRAELQEGARQKLHELQEKLS PLGEEMRDRARAHVDALRTHLA PFLDDFQKKFQEEMELFRQKVE PLRAELQEGARQKLHELQEKLS PLGEEMRDRARAHVDALRTHLA PFSDRLRQLAARLEALKENGG ARLAEFHAKATEHLSTLSEKAK PALEDLRQGLL PVLESFKVSFLSALEEFTKKLNTQ
Stability & Storage	Lyophilized protein: stable at -20°C for 24 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	
Recommended usage	The reduced UV absorption at 280 nm makes MSP1E3D1-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, MSP1E3D1-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.
Manufacturer	Cube Biotech

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