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MATERIAL DATA SHEET

Recombinant Human FAT10 Biotin
Cat. # UL-912

Human Leukocyte Antigen-F Associated Transcript 10 (FAT10), also known as Ubiquitin D (UBD), is a 165 amino acid (aa) member of the Ubiquitin-like family of proteins. Human FAT10 has a predicted molecular weight of 18.5 kDa and shares 69% aa sequence identity with mouse FAT10 (1). Human FAT10 mRNA is expressed as a single transcript in lymphoblastoid lines and dendritic cells, but more than one mRNA transcript has been identified for murine FAT10 (1,2). FAT10 can also be induced by IFN-γ and TNF-α in some cell lines (1). Structurally, FAT10 consists of two Ubiquitin-like domains that are connected by a short linker. Like Ubiquitin, FAT10 has a C-terminal glycine residue that can be used to form isopeptide bonds with target proteins. FAT10-conjugated proteins are targeted to the proteasome where the 26S Proteasome subunit S5a/Angiocidin binds to FAT10 and enables subsequent degradation of the conjugated protein (3). In addition to S5a/Angiocidin, FAT10 has been shown to interact with Huntingtin, Ataxin-1, MAD2, and NUB1L (4,5). FAT10 has been implicated in a number of biological processes such as cell cycle control, antigen presentation, and cytokine response (1,6-8).This protein is modified with biotin via primary amine coupling resulting in the modification of lysine residues as well as the N-terminus. Biotinylated FAT10 can be detected using avidin-linked reagents for higher efficiency and detection sensitivity than with antibodies.

Product Information	
Quantity:	50 µg
Source:	*E. coli*-derived Accession # O15205/Q96EC7 (NP_006389)
Stock:	Supplied as a solution in HEPES, NaCl, DTT and Glycerol.
Purity:	>95%, by PAGE.

Use & Storage

Use: Biotin-FAT10 can be conjugated to substrate proteins via the subsequent actions of a FAT10-activating (E1) enzyme, a FAT10-conjugating (E2) enzyme, and a FAT10 ligase (E3). Biotin-FAT10 is ideal for the visualization or quantification of thioester formation with avidin-linked reagents. Reaction conditions will need to be optimized for each specific application. We recommend an initial Biotin-FAT10 concentration of 5-20 µM.

Storage: **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -70 °C as supplied.
- 3 months, -70 °C under sterile conditions after opening.

Literature

References:

1. Liu, Y.-C. *et al*. (1999) Proc. Natl. Acad. Sci. USA **96**:4313.
2. Canaan, A. *et al*. (2006) Mol. Cell. Biol. **26**:5180.
3. Rani, N. *et al*. (2012) Nat. Commun. **3**:749.
4. Hipp, M.S. *et al*. (2004) J. Biol. Chem. **279**:16503.
5. Nagashima, Y. *et al*. (2011) J. Biol. Chem. **286**:29594.
6. Ebstein, F. *et al*. (2012) Cell. Mol. Life Sci. **69**:2443.
7. Lukasiak, S. *et al*. (2008) Oncogene **27**:6068.
8. Ren, J. *et al*. (2011) J. Cell Sci. **124**:3665.

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