Ubiquitin, Fluorescein-labeled (FLR-Ub)

Cat. # SI270F

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Background

Ubiquitin, a small and highly conserved protein, can covalently modify protein substrates. Post-translational modification of proteins by ubiquitin (Ub) is a key regulatory process that regulates a broad spectrum of cellular functions, including protein stability, localization, activity, and protein-protein interactions. The ubiquitination reaction generates an isopeptide bond between the carboxyl-terminal of Ub and the ε-amino group of lysine in the substrate. Ub contains seven internal lysine residues, all of which can participate as conjugation sites, generating poly-Ub chains. The type of polyubiquitin linkage determines the fate of the modified protein(s). Monitoring the ubiquitination of target proteins or the growth of polyubiquitin chains has traditionally been carried out with either radiolabeled or epitope-tagged ubiquitin, requiring long and laborious detection methods. Fluorescently labeled ubiquitin provides a rapid, facile technique for studying ubiquitin conjugation in vitro. Unlike others, LifeSensors' fluorescein-labeled ubiquitin carries a single fluorescein molecule attached at a defined location and prevents modification of either the N-terminus or lysine side chains.

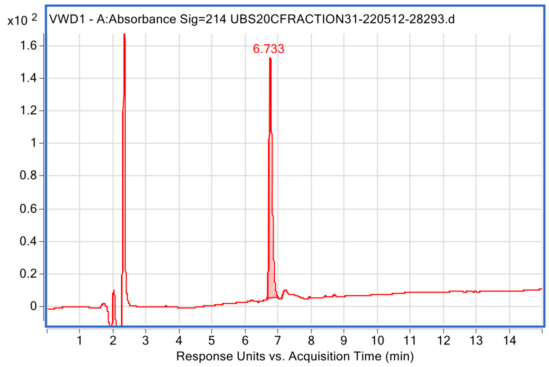
Application(s)

- In vitro detection of ubiquitin conjugation
- Determination of the activity of ubiquitin conjugating enzymes

Product Specifications

Tag	None
Purity	$\geq$ 95% by RP-HPLC
Molecular Weight	9,009.3 Da
Quantity & Source	100 µg
Species	Human
Expression System	*E. Coli*
Physical State	Liquid
Buffer	PBS
Solubility	> 8 mg/ml
Ex/Em wavelengths	Excitation: 494 nm; Emission: 520 nm
Stability & Storage	1 year at -80^{o}C. Avoid repeated freeze/thaw cycles

Product QC



RP-HPLC

References

1. Zheng N, Shabek N. Ubiquitin ligases: structure, function, and regulation. Annu Rev Biochem. 2017; 86:129-157.
2. Swatek KN, Komander D. Ubiquitin modifications. Cell Res. 2016;26(4):399-422.
3. Xu, P. and Peng, J., Characterization of polyubiquitin chain structure by middle-down spectrometry. Anal Biochem. 2008; 80:3438-3444.
4. Hochstrasser M. Origin and function of ubiquitin-like proteins. Cell. 2006;124(1):27-34.
5. Pickart, C.M. and Fushman, D., Polyubiquitin chains: polymeric protein signals. Curr Opin Chem Biol. 2004; 8:610-616.
6. Pickart, C.M., Mechanisms underlying ubiquitination. Annu Rev Biochem. 2001; 70:503-33.
7. Weissman AM. Themes and variations on ubiquitylation. Nat Rev Mol Cell Biol. 2001;2(3):169-178.