Di-ubiquitin (linear)

Linear polyubiquitin chains are useful tools for investigating, amongst other things, the specificity and reactivity of deubiquitinylating enzymes (DUBs) and the recognition and interaction of linear polyubiquitin modified proteins with ubiquitin binding domain (UBDs) containing proteins.

The post-translational modification of proteins with polyubiquitin chains occurs in a wide range of signalling pathways and is tightly regulated in order to ensure cellular homeostasis. The function, processing and ultimate fate of polyubiquitinylated proteins is thought to be determined by the nature of the linkage between adjacent ubiquitin molecules in the polyubiquitin chain.

In addition to lysine-linked polyubiquitin chains the amino terminus of ubiquitin can be used to form head-to-tail polyubiquitin chains, in which the C-terminal Gly of one ubiquitin is conjugated to the N-terminal Met of an adjacent ubiquitin. Such linear polyubiquitin chains are structurally similar to Lys^{63}-linked polyubiquitin, despite the chemical differences between the two linkage types.

Several ubiquitin polygenes are encoded in eukaryotic cells and undergo post-translational processing to generate the cellular source of free ubiquitin monomers. However, linear polyubiquitin chains,in which the C-terminal Gly of one ubiquitin is conjugated to the N-terminal Met of an adjacent ubiquitin, have been shown to be assembled in vitro by an E3 ligase complex, known as the linear ubiquitin chain assembly complex (LUBAC), and ubiquitin binding domains (UBDs) with a preference for linear polyubiquitin have been identified in a number of proteins. A possible role for linear polyubiquitin modification in NF-κB pathway activation, involving linear polyubiquitinylation of NEMO, has also been reported.

Such observations suggest that linear polyubiquitin modification of proteins may play an important role in cellular processes in addition to that of lysine-linked polyubiquitin protein conjugation.

Citations: 3

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Ordering Information

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BML-UW0775-0100	100µg

Manuals, SDS & CofA

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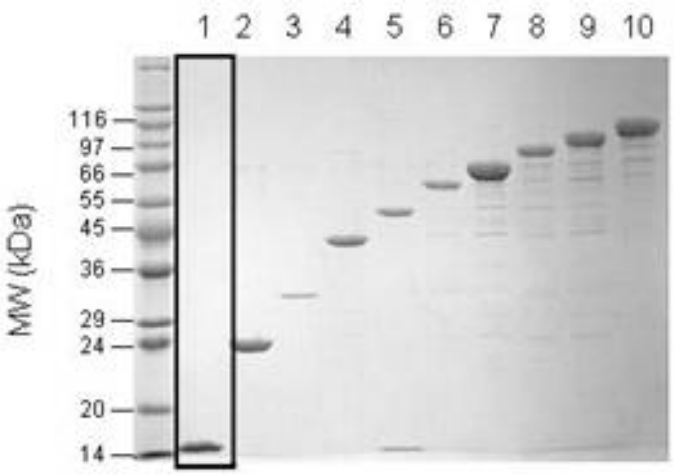


Figure 1: SDS-PAGE comparison of linear polyubiquitin chains (all 2 µg/lane):

Lane 1: Ub_2 (Prod. No. BML-UW0775) Lane 2: Ub_3 (Prod. No. BML-UW0780) Lane 3: Ub_4 (Prod. No. BML-UW0785) Lane 4: Ub_5 (Prod. No. BML-UW0790) Lane 5: Ub_6 (Prod. No. BML-UW0795) Lane 6: Ub_7 (Prod. No. BML-UW0800) Lane 7: Ub_8 (Prod. No. BML-UW0805) Lane 8: Ub_9 (Prod. No. BML-UW0810)Lane 9: Ub_{10} (Prod. No. BML-UW0815) Lane 10: Ub_{11} (Prod. No. BML-UW0820)

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Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended. Stable for at least 12 months after receipt when stored at -20°C.
Handling	Avoid freeze/thaw cycles. After opening, prepare aliquots and store at -20°C.
Long Term Storage	-20°C
Shipping	Blue Ice

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	Ub2
Application Notes	For use in deubiquitinylating enzyme assays and polyubiquitin binding studies. Suggested uses: 1. Deubiquitinylating enzyme substrates (general/linkage specific). 2. Investigation of polyubiquitin chain recognition by and interaction with ubiquitin binding proteins. 3. Linear polyubiquitin studies.
Formulation	Liquid. In 50mM TRIS, pH 8.0, containing 50mM sodium chloride.
MW	~17.1kDa
Purity	≥95% (SDS-PAGE)
Purity Detail	Purified by multistep chromatography.
Source	Produced in *E. coli*.
UniProt ID	P0CG47 (UBB), P0CG48 (UBC)

ENZO LIFE SCIENCES, INC.
Phone: 800 942 0430
info-usa@enzolifesciences.com

European Sales Office
ENZO LIFE SCIENCES (ELS) AG
Phone: +41 61 926 8989
info-eu@enzolifesciences.com

Belgium, The Netherlands & Luxembourg
Phone: +32 3 466 0420
info-be@enzolifesciences.com

France
Phone: +33 472 440 655
info-fr@enzolifesciences.com

Germany
Phone: +49 7621 5500 526
info-de@enzolifesciences.com

UK & Ireland
Phone (UK customers): 0845 601 1488
Phone: +44 1392 825900
info-uk@enzolifesciences.com

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