

UbiQ

targeting the ubiquitin system

Biotin-Ahx-Ub(1-75)-Dha-Ub (human sequence, synthetic)

UbiQ code : UbiQ-121
Batch # : B01062015-001
Amount : 50 ug, lyophilized powder
Purity : ≥95%
Mol. Weight : 17.47 kDa
Storage : upon arrival, powder at –20°C, solution at –80°C. Avoid multiple freeze/thaw cycles.

Productsheet

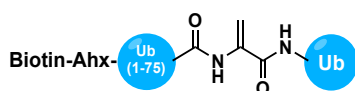
Background. UbiQ-121 is an activity-based probe based on linear diubiquitin which targets the deubiquitinating enzyme (DUB) OTULIN.* In UbiQ-121, the Gly76-Met1 dipeptide of linear diUb is replaced by a dehydroalanine-Met (Dha-Met) dipeptide (Figure 1). The N-terminus of the distal Ub is labeled with a biotin; a 6-aminohexanoic acid (Ahx) linker is used to create extra space for efficient access of biotin binding entities. UbiQ-121 reacts with OTULIN in a covalent manner without being cleaved into monoUb, indicating correct positioning of the Dha electrophile for reacting with the nucleophilic active site cysteine of OTULIN. UbiQ-121 can be used for activity profiling experiments and structural studies. Please note that the native distance between the proximal and distal Ub is preserved.

* Please note that, due to Gly76 of the proximal Ub, UbiQ-121 shows some cross-reactivity with USP5 (isoT) and can serve as substrate for Ub E1-E2-E3 enzymes (resulting in the probe being incorporated into chains).

A

Biotin-Ahx-MQIFVKTLTGKTTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYNIQKESTLHLVLRRLRG-Dha-
MQIFVKTLTGKTTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLLIFAGKQLEDGRTLSDYNIQKESTLHLVLRRLRG

B



C

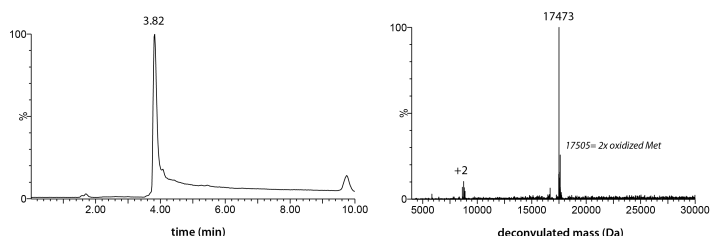


Figure 1. Sequence (A) and structure (B) UbiQ-121. C: LC-MS analysis. Mobile phase A= 1% CH₃CN, 0.1% formic acid in water and B= 1% water and 0.1% formic acid in CH₃CN. XBridge BEH300 C18 5µm 4.6x100mm; column T= 40°C, flow= 0.8 mL/min. Gradient: 30–60% over 6.5 min.

important: sample preparation.

- dissolve the powder in as little DMSO as possible (*e.g.* 20 mg/mL)
- add this DMSO stock slowly to milliQ (please note the order of addition)
- buffer the aq. solution as desired
- for full experimental details see open-access reference 1: <http://dx.doi.org/10.1016/j.chembiol.2017.08.006>

Literature. (1) Weber et al. *Cell Chem Biol.* 2017, 24, 1299.