UbiQ
targeting the ubiquitin system

**K58K(biotin) cRh110-Cys-Ubv$^{(USP7)}$-PA** *(synthetic, USP7 targeting Ub variant)*

| | | |
|---|---|---|
| UbiQ code | : | UbiQ-314 |
| Batch # | : | B01065021-001 |
| Amount | : | 50 ug, lyophilized powder |
| Purity | : | >90% |
| Mol. Weight | : | 9.23 kDa |
| Storage | : | upon arrival, powder at –20°C; solution at –80°C. Please store dark and avoid multiple freeze/thaw cycles. |

# Productsheet

**Background.** UbiQ-314 is an activity-based probe that is based on a ubiquitin variant designed to selectively target USP7. It contains a C-terminal electrophilic propargyl amide (PA, also sometimes abbreviated as Prg).

- the PA group forms a covalent linkage with the active site Cys residue of USP7 that can be cleaved by acid treatment (5% aq. TFA), allowing proteomic analyses.
- the N-terminus is functionalised with a 5-carboxyrhodamine110 dye (cRh110, $\lambda_{ex}$ = 480 nm; $\lambda_{em}$ = 520 nm) allowing sensitive and fast (in-gel fluorescence) detection.
- a Cys residue is introduced between the dye and N-terminus for further modification with thiol-reactive tags.
- Ub variant is based on Ub with the following mutations: T7D, L8Y, I13R, E34L, Q40N, L69A, and L71A
- Lys58 contains a biotin tag which besides detection and binding also serves to increase USP7 selectivity by prohibiting binding of most USPs.

**sequence**

cRh110-CMQIFVKDYTGKTRTLEVEPSDTIENVKAKIQDKLGIPPDNQRLIFAGKQLEDGRTLSK$^{(biotin)}$YNIQKESTLHAVARLRG-PA

**Figure 1.** SDS-PAGE analysis UbiQ-314. MES buffer, 12% Bolt Bis-Tris Plus gel (Lifetechnologies), fluorescent scanning (480/520 nm).

## important: sample preparation

- dissolve the powder in as little DMSO as possible (e.g. 25 – 40 mg/mL)
- add this DMSO stock slowly to milliQ (please note the order of addition)
- buffer as desired
- for experimental details please see references 1 and 2.

**Literature.** (1) Gjonaj et al. *Chem Comm* **2019**, *55*, 5075. (2) Mandal et al. *Angew Chem Int Ed Engl* **2021**, *60*, 7333. (3) Ekkebus et al. *J Am Chem Soc* **2013**, *135*, 2867. (4) Sommer et al. *Bioorg Med Chem* **2013**, *21*, 2511.

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