# SUMO Protease 2

Cat. # 4020

**Background:** LifeSensors' industry leading SUMO Protease 2 (Senp2), a highly active and robust recombinant protease, cleaves hSUMO3 from recombinant fusion proteins. Unlike thrombin, EK, or TEV protease, which recognize short linear sequences, SUMO Protease 2 recognizes the tertiary structure of SUMO. As a result, SUMO Protease 2 will not cleave within the fused protein of interest. SUMO Protease 2 cleaves consistently over a broad range of temperature (30°C is optimal), pH [5.5 – 9.5], and ionic strength. SUMO Protease 2 contains a polyhistidine tag at the N-terminus, making it easy to remove from the cleavage reaction by affinity chromatography.

**Application:** Removal of hSUMO tags from recombinant, fusion proteins.

## Product Information

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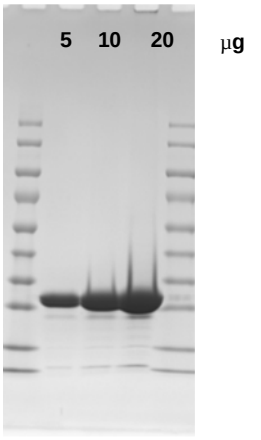
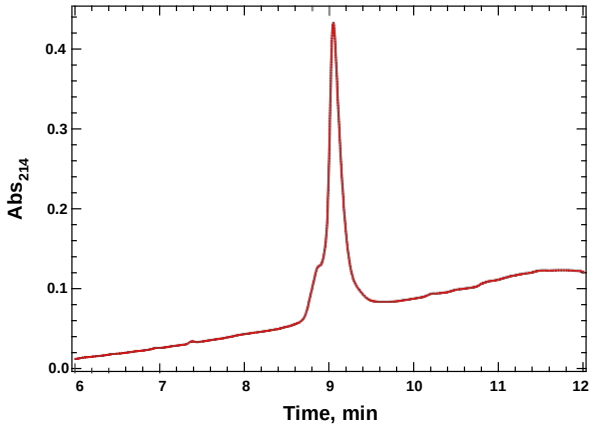
| **Purity:** | ≥ 95% by SDS-PAGE and RP-HPLC |
| **Molecular Weight:** | 27739.2 Da by MS (27739.1 expected) |
| **Specific Activity:** | ≥ 1 x $10^5$ U/mg, 1 U will cleave >90 µg of hSUMO3-GFP in 1 hr at 37° C |
| **Physical State:** | 10U/µl in 50 mM Hepes, pH 7.5, 150 mM NaCl, 10% glycerol |
| **Quantity:** | 250, 500, 1000, or 5000 Units |
| **Storage:** | -80° C. Avoid repeated freeze/thaw cycles |




SDS-PAGE




RP-HPLC

## Protocol

1. After SUMO3-protein fusion is purified: dialyze sample against proper buffer (e.g. PBS, pH 7.4 or 20 mM TRIS buffer containing 150 mM NaCl, pH 8.0) at 4°C.
2. Add SUMO Protease 2 to substrate (1 unit enzyme to 10-100 µg substrate should suffice, depends on SUMO3 fusion protein); add DTT to 2 mM final.
3. Either:
    a. incubate the mixture at 30°C for 1 h (mix gently do not vortex), or
    b. incubate the mixture at 4°C overnight
        i. (you can also perform a. followed by b.)
4. Check the cleavage using SDS-PAGE. If the SUMO3-fusion is not cleaved up to 95%, add more SUMO protease 2.

## References

1. Marblestone JG, Edavettal SC, Lim Y, Lim P, Zuo X, Butt TR (2006). "Comparison of SUMO fusion technology with traditional gene fusion systems: Enhanced expression and solubility with SUMO," Protein Science, 15:182-9.
2. Butt TR, Edavettal SC, Hall JP, Mattern MR (2005). "SUMO fusion technology for difficult-to-express proteins," Protein Expr Purif., 43(1):1-9.
3. Zuo X, Li S, Hall J, Mattern MR, Tran H, Shoo J, Tan R, Weiss SR, Butt TR (2005). "Enhanced expression and purification of membrane proteins by SUMO fusion in Escherichia coli.," J Struct Funct Gen., 6:103-11.
4. Malakhov MP, Mattern MR, Malakhov OA, Drinker M, Weeks SD, Butt TR (2004). "SUMO fusions and SUMO-specific protease for efficient expression and purification of proteins," J Struct Funct Gen, 5:75-86.