The small ubiquitin-related modifier (SUMO) proteins, which include SUMO-1, SUMO-2 and SUMO-3, belong to the ubiquitin-like protein family. Like ubiquitin, the SUMO proteins are synthesized as precursor proteins that undergo processing before conjugation to target proteins. Also, both utilize the E1, E2, and E3 cascade enzymes for conjugation. However, SUMO and ubiquitin differ with respect to targeting. Ubiquitination predominantly targets proteins for degradation, whereas sumoylation targets proteins to a variety of cellular processes, including nuclear transport, transcriptional regulation, apoptosis and protein stability. The unconjugated SUMO-1, SUMO-2 and SUMO-3 proteins localize to the nuclear membrane, nuclear bodies and cytoplasm, respectively. SUMO-1 utilizes UBC9 for conjugation to several target proteins, which include IκBα, MDM2, p53, PML and Ran GAP1. SUMO-2 and SUMO-3 contribute to a greater percentage of protein modification than does SUMO-1, and unlike SUMO-1, they can form polymeric chains. In addition, SUMO-3 regulates β-Amyloid generation and may be critical in the onset or progression of Alzheimer’s disease.

REFERENCES

CHROMOSOMAL LOCATION
Genetic locus: SUMO1 (human) mapping to 2q33.1.

PRODUCT
SUMO-1 (h2): 293 Lysate represents a lysate of human SUMO-1 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS
SUMO-1 (h2): 293 Lysate is suitable as a Western Blotting positive control for human reactive SUMO-1 antibodies.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

SUMO-1 (D-11): sc-5308 is recommended as a positive control antibody for Western Blot analysis of enhanced human SUMO-1 expression in SUMO-1 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SECONDARY REAGENTS
To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

DATA

SUMO-1 (D-11): sc-5308. Western blot analysis of SUMO-1 expression in non-transfected: sc-110760 (A) and human SUMO-1 transfected: sc-176664 (B) 293 whole cell lysates.

SUMO-1 (C-19): sc-6375. Western blot analysis of SUMO-1 expression in non-transfected: sc-110760 (A) and human SUMO-1 transfected: sc-176664 (B) 293 whole cell lysates.

RESEARCH USE
For research use only, not for use in diagnostic procedures.

STORAGE
Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS
See our web site at www.scbt.com or our catalog for detailed protocols and support products.