

# AOS-1 (N-18): sc-46766

## BACKGROUND

Proteolytic degradation by the ubiquitin (Ub) system is essential for normal cell cycle progression, cellular differentiation and stress responses. Proteins conjugated to Ub are marked for progressive degradation by the 26S Proteasome. AOS-1, also designated SUMO-1-activating enzyme or ubiquitin-like 1-activating enzyme E1A, belongs to the ubiquitin-activating E1 family of proteins and plays an important role in the first step of the UBL1 conjugation pathway. AOS-1, which is a dimeric enzyme, functions as a UBL1 E1 ligase, mediating the ATP-dependent activation of UBL1. AOS-1 can bind with UBLE1A and UBLE1B to form a heterodimer which can bind UBL1.

## REFERENCES

1. Desterro, J.M., et al. 1998. SUMO-1 modification of I $\kappa$ B $\alpha$  inhibits NF $\kappa$ B activation. *Mol. Cell* 2: 233-239.
2. Okuma, T., et al. 1999. *In vitro* SUMO-1 modification requires two enzymatic steps, E1 and E2. *Biochem. Biophys. Res. Commun.* 254: 693-698.
3. Gong, L., et al. 1999. Molecular cloning and characterization of human AOS-1 and UBA2, components of the sentrin-activating enzyme complex. *FEBS Lett.* 448: 185-189.
4. Desterro, J., et al. 1999. Identification of the enzyme required for activation of the small ubiquitin-like protein SUMO-1. *J. Biol. Chem.* 274: 10618-10624.
5. Engelhardt, O.G., et al. 2001. Interferon-induced antiviral Mx1 GTPase is associated with components of the SUMO-1 system and promyelocytic leukemia protein nuclear bodies. *Exp. Cell Res.* 271: 286-295.
6. Pichler, A., et al. 2004. The RanBP2 SUMO E3 ligase is neither HECT nor RING type. *Nat. Struct. Mol. Biol.* 11: 984-991.
7. Lois, L.M. and Lima, C.D. 2005. Structures of the SUMO E1 provide mechanistic insights into SUMO activation and E2 recruitment to E1. *EMBO J.* 24: 439-451.

## CHROMOSOMAL LOCATION

Genetic locus: SAE1 (human) mapping to 19q13.32; Sae1 (mouse) mapping to 7 A2.

## SOURCE

AOS-1 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of AOS-1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46766 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

AOS-1 (N-18) is recommended for detection of AOS-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AOS-1 (N-18) is also recommended for detection of AOS-1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AOS-1 siRNA (h): sc-60174, AOS-1 siRNA (m): sc-60175, AOS-1 shRNA Plasmid (h): sc-60174-SH, AOS-1 shRNA Plasmid (m): sc-60175-SH, AOS-1 shRNA (h) Lentiviral Particles: sc-60174-V and AOS-1 shRNA (m) Lentiviral Particles: sc-60175-V.

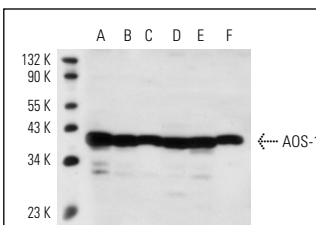
Molecular Weight of AOS-1: 38 kDa.

Positive Controls: SW480 cell lysate: sc-2219, AOS-1 (h): 293T Lysate: sc-176690 or NIH/3T3 whole cell lysate: sc-2210.

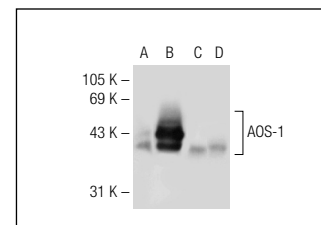
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



AOS-1 (N-18): sc-46766. Western blot analysis of AOS-1 expression in SW480 (A), HeLa (B), NIH/3T3 (C), MCF7 (D), T-47D (E) and PC-12 (F) whole cell lysates.



AOS-1 (N-18): sc-46766. Western blot analysis of AOS-1 expression in non-transfected 293T: sc-117752 (A), human AOS-1 transfected 293T: sc-176690 (B), HeLa (C) and Jurkat (D) whole cell lysates.

## RESEARCH USE

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