

AOS-1 (E-12): sc-376628

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 κ B- α inhibits NF κ 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 the sentrin-activating enzyme complex. *FEBS Lett.* 448: 185-189.
4. Desterro, J.M., 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. Interferoninduced 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 Ran BP-2 SUMO E3 ligase is neither HECT- nor RING-type. *Nat. Struct. Mol. Biol.* 11: 984-991.
7. Lois, L.M., et al. 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 (E-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 65-101 near the N-terminus of AOS-1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376628 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

AOS-1 (E-12) is recommended for detection of AOS-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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 (E-12) is also recommended for detection of AOS-1 in additional species, including equine, 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.

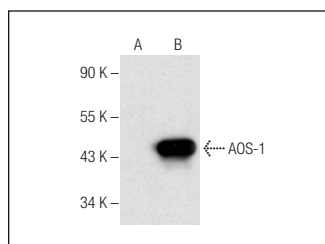
Molecular Weight of AOS-1: 38 kDa.

Positive Controls: SW480 cell lysate: sc-2219, HeLa whole cell lysate: sc-2200 or AOS-1 (h): 293T Lysate: sc-176690.

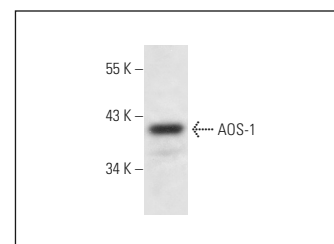
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



AOS-1 (E-12): sc-376628. Western blot analysis of AOS-1 expression in non-transfected: sc-117752 (A) and human AOS-1 transfected: sc-176690 (B) 293T whole cell lysates.



AOS-1 (E-12): sc-376628. Western blot analysis of AOS-1 expression in SW480 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Sun, Q., et al. 2018. Inhibition of sumoylation alleviates oxidative stress-induced retinal pigment epithelial cell senescence and represses proinflammatory gene expression. *Curr. Mol. Med.* 18: 575-583.

STORAGE

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