SANTA CRUZ BIOTECHNOLOGY, INC.

# E6-AP (E-4): sc-166689

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

E6-associating protein (E6-AP), also designated ubiquitin protein ligase E3A (UBE3A), is a component of the ubiquitin-mediated proteolytic pathway that selectively targets proteins for degradation by the 26S Proteasome. Ubiquitin (Ub) is directly conjugated to protein substrates by the transfer of Ub from an E2 ubiquitin conjugating enzyme to the target protein. This conjugation is facilitated by the enzymatic activity of E3 ubiquitin ligase family members such as E6-AP. Several substrates of E6-AP have been identified and include the tumor suppressor protein p53 and the mammalian homolog of Rad23, HHR23A. Previous studies have indicated that E6-AP associates with the human papillomavirus E6 oncogene, which forms a complex with p53 and thereby potentiates E6-AP mediated ubiquitination of p53. Genetic mutations that impair E6-AP activity result in the accumulation of p53 in the cytoplasm, and in many instances, these mutations are associated with the development of the rare neurodevelopmental disorder Angelman syndrome (AS), which is characterized by severe motor dysfunction and mental retardation.

## CHROMOSOMAL LOCATION

Genetic locus: UBE3A (human) mapping to 15q11.2; Ube3a (mouse) mapping to 7 C.

## SOURCE

E6-AP (E-4) is a mouse monoclonal antibody raised against amino acids 9-190 of E6-AP of human origin.

## PRODUCT

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

E6-AP (E-4) is available conjugated to agarose (sc-166689 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166689 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166689 PE), fluorescein (sc-166689 FITC), Alexa Fluor® 488 (sc-166689 AF488), Alexa Fluor® 546 (sc-166689 AF546), Alexa Fluor® 594 (sc-166689 AF594) or Alexa Fluor® 647 (sc-166689 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166689 AF680) or Alexa Fluor® 790 (sc-166689 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

E6-AP (E-4) is recommended for detection of E6-AP of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

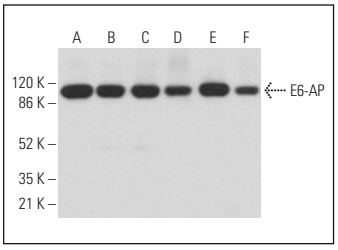
Suitable for use as control antibody for E6-AP siRNA (h): sc-43742, E6-AP siRNA (m): sc-40682, E6-AP shRNA Plasmid (h): sc-43742-SH, E6-AP shRNA Plasmid (m): sc-40682-SH, E6-AP shRNA (h) Lentiviral Particles: sc-43742-V and E6-AP shRNA (m) Lentiviral Particles: sc-40682-V.

Molecular Weight of E6-AP: 100 kDa.

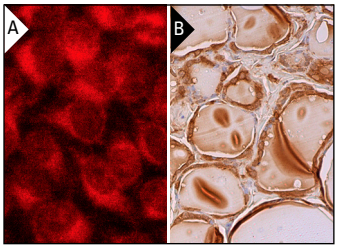
## STORAGE

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

## DATA




E6-AP (E-4): sc-166689. Western blot analysis of E6-AP expression in K-562 (**A**), Jurkat (**B**), Ramos (**C**), HeLa (**D**), NIH/3T3 (**E**) and SK-N-MC (**F**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.




E6-AP (E-4): sc-166689. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic and nuclear staining of glandular cells (**B**).

## SELECT PRODUCT CITATIONS


1. Shamanna, R.A., et al. 2013. Induction of p53, p21 and apoptosis by silencing the NF90/NF45 complex in human papilloma virus-transformed cervical carcinoma cells. Oncogene 32: 5176-5185.
2. Xu, X., et al. 2018. Excessive UBE3A dosage impairs retinoic acid signaling and synaptic plasticity in autism spectrum disorders. Cell Res. 28: 48-68.
3. Li, C., et al. 2020. An integrative synthetic biology approach to interrogating cellular ubiquitin and Ufm signaling. Int. J. Mol. Sci. 21: 4231.
4. Fang, M., et al. 2021. Epilepsy-associated UBE3A deficiency downregulates retinoic acid signalling pathway. Front. Genet. 12: 681295.
5. Martínez-Noël, G., et al. 2021. Live cell, image-based high-throughput screen to quantitate p53 stabilization and viability in human papillomavirus positive cancer cells. Virology 560: 96-109.
6. Peng, K., et al. 2021. Regulation of O-linked N-acetyl glucosamine transferase (OGT) through E6 stimulation of the ubiquitin ligase activity of E6AP. Int. J. Mol. Sci. 22: 10286.
7. Lautz, J.D., et al. 2021. Synaptic protein interaction networks encode experience by assuming stimulus-specific and brain-region-specific states. Cell Rep. 37: 110076.
8. Zhang, J., et al. 2022. A small-molecule inhibitor of MDMX suppresses cervical cancer cells via the inhibition of E6-E6AP-p53 axis. Pharmacol. Res. 177: 106128.
9. Leiendecker, L., et al. 2022. Human papillomavirus 42 drives digital papillary adenocarcinoma and elicits a germ-cell like program conserved in HPV-positive cancers. Cancer Discov. E-published.


## RESEARCH USE

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