

UBA3 (E-5): sc-377272

BACKGROUND

Ubiquitin is an abundant, highly conserved protein found in all eukaryotic cells either free or covalently attached to cellular proteins. The primary function of ubiquitin in mammalian systems is to clear abnormal, foreign and improperly folded proteins by targeting them for proteasome degradation. UBA3 (ubiquitin-like modifier activating enzyme 3), also known as NEDD8-activating enzyme E1 catalytic subunit or UBE1C (ubiquitin-activating enzyme E1C), is a 463 amino acid protein belonging to the ubiquitin-activating E1 family and UBA3 subfamily. Ubiquitously expressed, UBA3 acts as an activator to NEDD8, a ubiquitin-like protein, thus regulating cell division, signaling and embryogenesis. UBA3 exists as two isoforms due to alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: UBA3 (human) mapping to 3p14.1; Uba3 (mouse) mapping to 6 D3.

SOURCE

UBA3 (E-5) is a mouse monoclonal antibody raised against amino acids 317-463 mapping at the C-terminus of UBA3 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

UBA3 (E-5) is available conjugated to agarose (sc-377272 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377272 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377272 PE), fluorescein (sc-377272 FITC), Alexa Fluor® 488 (sc-377272 AF488), Alexa Fluor® 546 (sc-377272 AF546), Alexa Fluor® 594 (sc-377272 AF594) or Alexa Fluor® 647 (sc-377272 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377272 AF680) or Alexa Fluor® 790 (sc-377272 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

UBA3 (E-5) is recommended for detection of UBA3 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).

UBA3 (E-5) is also recommended for detection of UBA3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for UBA3 siRNA (h): sc-76783, UBA3 shRNA Plasmid (h): sc-76783-SH and UBA3 shRNA (h) Lentiviral Particles: sc-76783-V.

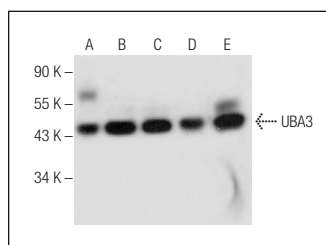
Molecular Weight of UBA3: 58 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or RAW 264.7 whole cell lysate: sc-2211.

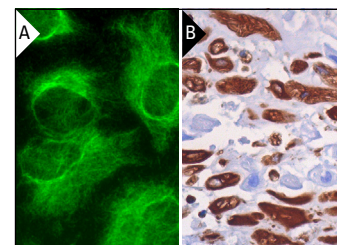
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



UBA3 (E-5): sc-377272. Western blot analysis of UBA3 expression in mouse brain tissue extract (A) and Hep G2 (B), HeLa (C), RAW 264.7 (D) and K-562 (E) whole cell lysates.



UBA3 (E-5): sc-377272. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing nuclear and cytoplasmic staining of subset of decidual cells (B).

SELECT PRODUCT CITATIONS

- Saito, N., et al. 2014. CBS9106-induced CRM1 degradation is mediated by Cullin ring ligase activity and the neddylation pathway. *Mol. Cancer Ther.* 13: 3013-3023.
- Xiong, C., et al. 2021. Development of potent NEDD8-activating enzyme inhibitors bearing a pyrimidotriazole scaffold. *J. Med. Chem.* 64: 6161-6178.
- Zhou, L.N., et al. 2022. SOMCL-19-133, a novel, selective, and orally available inhibitor of NEDD8-activating enzyme (NAE) for cancer therapy. *Neoplasia* 32: 100823.
- Wu, M.H., et al. 2022. Inhibition of neddylation suppresses osteoclast differentiation and function *in vitro* and alleviates osteoporosis *in vivo*. *Biomedicines* 10: 2355.
- Kawamura, A., et al. 2022. DYRK2 maintains genome stability via neddylation of cullins in response to DNA damage. *J. Cell Sci.* 135: jcs259514.

STORAGE

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

RESEARCH USE

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