

# UBC12 (D-4): sc-390064



The Power to Question

## BACKGROUND

Ubiquitination is an important mechanism through which three classes of enzymes act in concert to target short-lived or abnormal proteins for destruction. The three classes of enzymes involved in ubiquitination are the ubiquitin-activating enzymes (E1s), the ubiquitin-conjugating enzymes (E2s) and the ubiquitin-protein ligases (E3s). UBC12, also known as UBE2M (ubiquitin-conjugating enzyme E2M), hUbc12 or UBC-RS2, is a 183 amino acid member of the E2 ubiquitin-conjugating enzyme family. UBC12 is linked with NEDD8 (neural precursor cell expressed, developmentally down-regulated 8), a ubiquitin-like protein. Via this interaction, UBC12 facilitates the attachment of NEDD8 to proteins targeted for degradation. Due to its ability to control the conjugation of NEDD8 to cellular proteins, UBC12 is thought to play a role in cell proliferation events.

## CHROMOSOMAL LOCATION

Genetic locus: UBE2M (human) mapping to 19q13.43; Ube2m (mouse) mapping to 7 A1.

## SOURCE

UBC12 (D-4) is a mouse monoclonal antibody raised against amino acids 1-42 mapping at the N-terminus of UBC12 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

UBC12 (D-4) is available conjugated to agarose (sc-390064 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390064 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390064 PE), fluorescein (sc-390064 FITC), Alexa Fluor® 488 (sc-390064 AF488), Alexa Fluor® 546 (sc-390064 AF546), Alexa Fluor® 594 (sc-390064 AF594) or Alexa Fluor® 647 (sc-390064 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390064 AF680) or Alexa Fluor® 790 (sc-390064 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

UBC12 (D-4) is recommended for detection of UBC12 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

UBC12 (D-4) is also recommended for detection of UBC12 in additional species, including canine and bovine.

Suitable for use as control antibody for UBC12 siRNA (h): sc-76786, UBC12 siRNA (m): sc-76787, UBC12 shRNA Plasmid (h): sc-76786-SH, UBC12 shRNA Plasmid (m): sc-76787-SH, UBC12 shRNA (h) Lentiviral Particles: sc-76786-V and UBC12 shRNA (m) Lentiviral Particles: sc-76787-V.

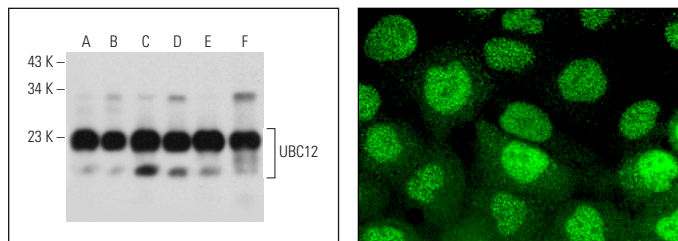
Molecular Weight of UBC12: 21 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, Jurkat whole cell lysate: sc-2204 or NIH/3T3 whole cell lysate: sc-2210.

## STORAGE

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

## DATA



UBC12 (D-4): sc-390064. Western blot analysis of UBC12 expression in MCF7 (A), Jurkat (B), RAW 264.7 (C), NIH/3T3 (D), PC-12 (E) and C6 (F) whole cell lysates.

UBC12 (D-4): sc-390064. Immunofluorescence staining of formalin-fixed A-431 cells showing nuclear and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Zhou, W., et al. 2018. UBE2M is a stress-inducible dual E2 for neddylation and ubiquitylation that promotes targeted degradation of UBE2F. *Mol. Cell* 70: 1008-1024.
- Mayor-Ruiz, C., et al. 2019. Plasticity of the Cullin-RING ligase repertoire shapes sensitivity to ligand-induced protein degradation. *Mol. Cell* 75: 849-858.
- Yu, Q., et al. 2020. Gossypol inhibits Cullin neddylation by targeting SAG-CUL5 and RBX1-CUL1 complexes. *Neoplasia* 22: 179-191.
- Mayor-Ruiz, C., et al. 2020. Rational discovery of molecular glue degraders via scalable chemical profiling. *Nat. Chem. Biol.* 16: 1199-1207.
- Kim, J.H., et al. 2021. UBE2M drives hepatocellular cancer progression as a p53 negative regulator by binding to MDM2 and ribosomal protein L11. *Cancers* 13: 4901.
- Zhou, Q., et al. 2022. Neddylation inhibition induces glutamine uptake and metabolism by targeting CRL3<sup>SPOF</sup> E3 ligase in cancer cells. *Nat. Commun.* 13: 3034.
- Xu, T., et al. 2022. A small molecule inhibitor of the UBE2F-CRL5 axis induces apoptosis and radiosensitization in lung cancer. *Signal Transduct. Target. Ther.* 7: 354.
- Wu, M.H., et al. 2022. Inhibition of neddylation suppresses osteoclast differentiation and function *in vitro* and alleviates osteoporosis *in vivo*. *Biomedicines* 10: 2355.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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