

UBE2C (h2): 293T Lysate: sc-116349

BACKGROUND

The ubiquitin (Ub) pathway involves three sequential enzymatic steps that facilitate the conjugation of Ub and Ub-like molecules to specific protein substrates. The first step requires the ATP-dependent activation of the Ub C-terminus and the assembly of multi-Ub chains by the Ub-activating enzyme known as the E1 component. The Ub chain is then conjugated to the Ub-conjugating enzyme (E2) to generate an intermediate Ub-E2 complex. The Ub-ligase (E3) then catalyzes the transfer of Ub from E2 to the appropriate protein substrate. UBE2C, also designated UBCH10 in human, is an E2 ubiquitin conjugating enzyme for the anaphase promoting complex (APC), which coordinates mitosis and G₁ by sequentially promoting the degradation of key cell-cycle regulators. UBE2C is overexpressed in many different types of cancers and may be a potential therapeutic target.

REFERENCES

1. Lin, Y., Hwang, W.C. and Basavappa, R. 2002. Structural and functional analysis of the human mitotic-specific ubiquitin-conjugating enzyme, UBCH10. *J. Biol. Chem.* 277: 21913-21921.
2. Okamoto Y., Ozaki T., Miyazaki K., Aoyama M., Miyazaki M. and Nakagawara, A. 2003. UBCH10 is the cancer-related E2 ubiquitin-conjugating enzyme. *Cancer Res.* 63: 4167-4173.
3. Rape, M. and Kirschner, M.W. 2004. Autonomous regulation of the anaphase-promoting complex couples mitosis to S-phase entry. *Nature* 432: 588-595.
4. Passmore, L.A. and Barford, D. 2004. Getting into position: the catalytic mechanisms of protein ubiquitylation. *Biochem. J.* 379: 513-525.
5. Wagner, K.W., Sapinoso, L.M., El-Rifai, W., Frierson, H.F., Butz, N., Mestan, J., Hofmann, F., Deveraux, Q.L. and Hampton, G.M. 2004. Overexpression, genomic amplification and therapeutic potential of inhibiting the UBCH10 ubiquitin conjugase in human carcinomas of diverse anatomic origin. *Oncogene* 23: 6621-6629.
6. Kobirumaki, F., Miyauchi, Y., Fukami, K. and Tanaka, H. 2005. A novel UBCH10-binding protein facilitates the ubiquitylation of cyclin B *in vitro*. *J. Biochem.* 137: 133-139.
7. Kuhlbrodt, K., Mouysset, J. and Hoppe, T. 2005. Orchestra for assembly and fate of polyubiquitin chains. *Essays Biochem.* 41: 1-14.
8. Rape, M., Reddy, S.K. and Kirschner, M.W. 2006. The processivity of multi-ubiquitination by the APC determines the order of substrate degradation. *Cell* 124: 89-103.

CHROMOSOMAL LOCATION

Genetic locus: UBE2C (human) mapping to 20q13.12.

PRODUCT

UBE2C (h2): 293T Lysate represents a lysate of human UBE2C transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

UBE2C (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive UBE2C antibodies. Recommended use: 10-20 µl per lane.

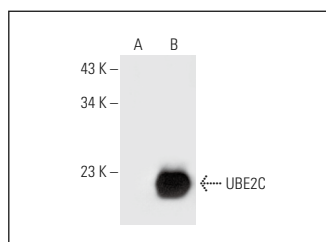
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

UBE2C (B-12): sc-166339 is recommended as a positive control antibody for Western Blot analysis of enhanced human UBE2C expression in UBE2C transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

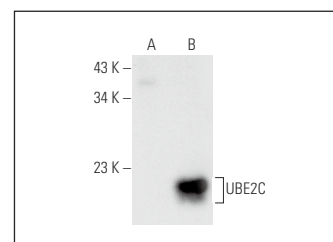
RECOMMENDED SUPPORT REAGENTS

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.

DATA



UBE2C (B-12): sc-166339. Western blot analysis of UBE2C expression in non-transfected: sc-117752 (A) and human UBE2C transfected: sc-116349 (B) 293T whole cell lysates.



UBE2C (B-4): sc-166499. Western blot analysis of UBE2C expression in non-transfected: sc-117752 (A) and human UBE2C transfected: sc-116349 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.