SANTA CRUZ BIOTECHNOLOGY, INC.

Wee 1 (B-11): sc-5285

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Phosphorylation of Cdc2 on threonine 14 and Tyrosine 15 is required to maintain Cdc2 in an inactive state throughout the S and G_2 phases of the cell cycle. The human Wee 1 protein, Wee 1 Hu, encodes a tyrosine-specific protein kinase that phosphorylates Cdc2 on tyrosine 15. Myt 1, a member of the Wee 1 family of protein kinases, has been shown to phosphorylate Cdc2 on both Threonine 14 and tyrosine 15 in a cyclin-dependent manner. Activity of both Wee 1 Hu and Myt 1 is regulated during the cell cycle, suggesting that both proteins play a role in mitotic control. Dephosphorylation of Cdc2 on threonine 14 and Tyrosine 15 in late G_2 by Cdc25 then activates the Cdc2/cyclin B complex to allow entry into mitosis.

CHROMOSOMAL LOCATION

Genetic locus: WEE1 (human) mapping to 11p15.4.

SOURCE

Wee 1 (B-11) is a mouse monoclonal antibody raised against amino acids 347-646 of Wee 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Wee 1 (B-11) is available conjugated to agarose (sc-5285 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-5285 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-5285 PE), fluorescein (sc-5285 FITC), Alexa Fluor® 488 (sc-5285 AF488), Alexa Fluor® 546 (sc-5285 AF546), Alexa Fluor® 594 (sc-5285 AF594) or Alexa Fluor® 647 (sc-5285 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-5285 AF680) or Alexa Fluor® 790 (sc-5285 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Wee 1 (B-11) is recommended for detection of Wee 1 of human origin by Western Blotting (starting dilution 1:200, 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 Wee 1 siRNA (h): sc-36835, Wee 1 shRNA Plasmid (h): sc-36835-SH and Wee 1 shRNA (h) Lentiviral Particles: sc-36835-V.

Molecular Weight of Wee 1: 94 kDa.

Positive Controls: Hela whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or BJAB whole cell lysate: sc-2207.

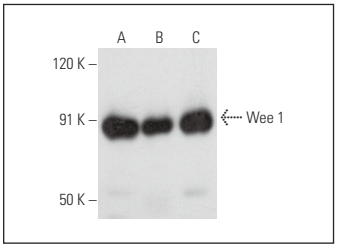
RESEARCH USE

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

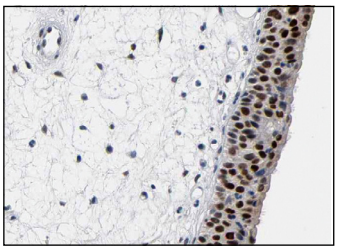
STORAGE

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

DATA



Wee 1 (B-11): sc-5285. Western blot analysis of Wee 1 expression in BJAB (**A**), HeLa (**B**) and Jurkat (**C**) whole cell lysates.



Wee 1 (B-11): sc-5285. Immunoperoxidase staining of formalin fixed, paraffin-embedded human nasopharynx tissue showing nuclear staining of surface epithelial cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Yuan, H., et al. 2003. Depletion of Wee 1 kinase is necessary for both human immunodeficiency virus type 1 Vpr- and gamma irradiation-induced apoptosis. J. Virol. 77: 2063-2070.
2. Music, D., et al. 2016. Expression and prognostic value of the WEE1 kinase in gliomas. J. Neurooncol. 127: 381-389.
3. Duan, Z., et al. 2017. miR-15b modulates multidrug resistance in human osteosarcoma *in vitro* and *in vivo*. Mol. Oncol. 11: 151-166.
4. de Pedro, I., et al. 2018. Sublethal UV irradiation induces squamous differentiation via a p53-independent, DNA damage-mitosis checkpoint. Cell Death Dis. 9: 1094.
5. Han, Y., et al. 2019. Synergistic activity of BET inhibitor MK-8628 and PLK inhibitor Volasertib in preclinical models of medulloblastoma. Cancer Lett. 445: 24-33.
6. Saha, S., et al. 2020. MicroRNA regulation of murine trophoblast stem cell self-renewal and differentiation. Life Sci. Alliance 3: e202000674.
7. Calandrini, C., et al. 2021. Organoid-based drug screening reveals neddylation as therapeutic target for malignant rhabdoid tumors. Cell Rep. 36: 109568.
8. Cho, J.G., et al. 2022. MicroRNA-dependent inhibition of WEE1 controls cancer stem-like characteristics and malignant behavior in ovarian cancer. Mol. Ther. Nucleic Acids 29: 803-822.
9. Su, B., et al. 2023. VPA mediates bidirectional regulation of cell cycle progression through the PPP2R2A-Chk1 signaling axis in response to HU. Cell Death Dis. 14: 114.

PROTOCOLS

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