

# Wee 2 (E-15): sc-249349

## BACKGROUND

The Wee kinases are major regulators of mitotic entry. Wee kinases function by phosphorylating Cdc2 and related Cdks on conserved tyrosine and threonine residues. This phosphorylation blocks the activity of the Cdc2 and prevents entry into mitosis. The abundance and activity of the Wee kinases are regulated during the cell cycle and development. Wee 2 (Wee1-like protein kinase 2), also known as WEE1B, is a 567 amino acid nuclear protein belonging to the protein kinase superfamily. Expressed in testis, Wee 2 phosphorylates and inhibits Cdc2 and may act as a negative regulator of entry into the G<sub>2</sub> to M transition of mitosis. The gene encoding Wee 2 is located on human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

## REFERENCES

- Morla, A., et al. 1989. Reversible tyrosine phosphorylation of cdc2: dephosphorylation accompanies activation during entry into mitosis. *Cell* 58: 193-203.
- Krek, W., et al. 1991. Differential phosphorylation of vertebrate p34cdc2 kinase at the G<sub>1</sub>/S and G<sub>2</sub>/M transitions of the cell cycle: identification of major phosphorylation sites. *EMBO J.* 10: 305-316.
- Igarashi, M., et al. 1991. Wee1<sup>+</sup>-like gene in human cells. *Nature* 353: 80-83.
- McGowan, C.H., et al. 1995. Human Wee1 kinase inhibits cell division by phosphorylating p34cdc2 exclusively on Tyr15. *EMBO J.* 12: 75-85.
- Nakanishi, M., et al. 2000. Identification and characterization of human Wee1B, a new member of the Wee1 family of Cdk-inhibitory kinases. *Genes Cells* 5: 839-847.
- Leise, W., et al. 2002. Multiple Cdk1 inhibitory kinases regulate the cell cycle during development. *Dev. Biol.* 249: 156-173.
- Petrus, M.J., et al. 2004. Altered expression of Chk1 disrupts cell cycle remodeling at the midblastula transition in *Xenopus laevis* embryos. *Cell Cycle* 3: 212-217.

## CHROMOSOMAL LOCATION

Genetic locus: WEE2 (human) mapping to 7q34; Wee2 (mouse) mapping to 6 B1.

## SOURCE

Wee 2 (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Wee 2 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-249349 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Wee 2 (E-15) is recommended for detection of Wee 2 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with Wee 1.

Wee 2 (E-15) is also recommended for detection of Wee 2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Wee 2 siRNA (h): sc-106809, Wee 2 siRNA (m): sc-155333, Wee 2 shRNA Plasmid (h): sc-106809-SH, Wee 2 shRNA Plasmid (m): sc-155333-SH, Wee 2 shRNA (h) Lentiviral Particles: sc-106809-V and Wee 2 shRNA (m) Lentiviral Particles: sc-155333-V.

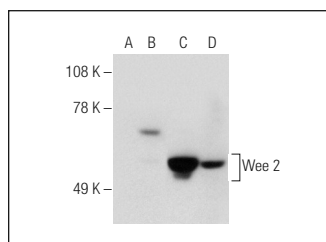
Molecular Weight of Wee 2: 63 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate, HUV-EC-C + VEGF cell lysate: sc-24709 or mouse testis extract: sc-2405.

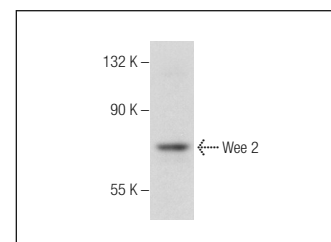
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Wee 2 (E-15): sc-249349. Western blot analysis of Wee 2 expression in non-transfected 293T: sc-117752 (A), mouse Wee 2 transfected 293T: sc-124642 (B) and HUV-EC-C (C) whole cell lysates and mouse testis tissue extract (D).



Wee 2 (E-15): sc-249349. Western blot analysis of Wee 2 expression in NTERA-2 cl.D1 whole cell lysate.

## 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.