

# Myt 1 (G-11): sc-74523

## BACKGROUND

Phosphorylation of Cdc2 on Threonine 14 and Tyrosine 15 is required to maintain Cdc2 in an inactive state throughout the S and G<sub>2</sub> 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<sub>2</sub> by Cdc25 then activates the Cdc2/cyclin B complex to allow entry into mitosis.

## REFERENCES

1. Morla, A., et al. 1989. Reversible tyrosine phosphorylation of Cdc2: dephosphorylation accompanies activation during entry into mitosis. *Cell* 58: 193-203.
2. 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.
3. Strausfeld, U., et al. 1991. Dephosphorylation and activation of a p34Cdc2/cyclin B complex *in vitro* by human Cdc25 protein. *Nature* 351: 242-245.
4. Igarashi, M., et al. 1991. Wee 1<sup>+</sup>-like gene in human cells. *Nature* 353: 80-83.
5. Gautier, J., et al. 1991. Cdc25 is a specific tyrosine phosphatase that directly activates p34Cdc2. *Cell* 67: 197-211.
6. McGowan, C.H., et al. 1995. Human Wee 1 kinase inhibits cell division by phosphorylating p34Cdc2 exclusively on Tyr 15. *EMBO J.* 12: 75-85.
7. Watanabe, N., et al. 1995. Regulation of the human Wee 1 Hu Cdk Tyrosine 15 kinase during the cell cycle. *EMBO J.* 14: 1878-1891.

## CHROMOSOMAL LOCATION

Genetic locus: PKMYT1 (human) mapping to 16p13.3.

## SOURCE

Myt 1 (G-11) is a mouse monoclonal antibody raised against amino acids 1-304 mapping at the N-terminus of Myt 1 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.

Myt 1 (G-11) is available conjugated to agarose (sc-74523 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74523 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74523 PE), fluorescein (sc-74523 FITC), Alexa Fluor® 488 (sc-74523 AF488), Alexa Fluor® 546 (sc-74523 AF546), Alexa Fluor® 594 (sc-74523 AF594) or Alexa Fluor® 647 (sc-74523 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74523 AF680) or Alexa Fluor® 790 (sc-74523 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Myt 1 (G-11) is recommended for detection of Myt 1 of 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).

Suitable for use as control antibody for Myt 1 siRNA (h): sc-35997, Myt 1 shRNA Plasmid (h): sc-35997-SH and Myt 1 shRNA (h) Lentiviral Particles: sc-35997-V.

Molecular Weight of Myt 1: 50-60 kDa.

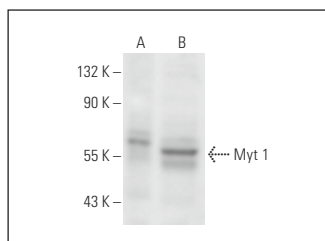
Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or SK-BR-3 cell lysate: sc-2218.

## RECOMMENDED SUPPORT REAGENTS

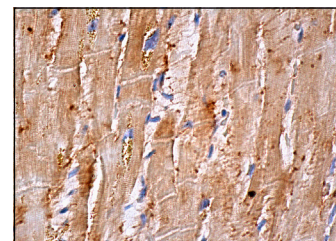
To ensure optimal results, the following support reagents are recommended:

- 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



Myt 1 (G-11): sc-74523. Western blot analysis of Myt 1 expression in HeLa (A) and PCEP-4 (B) whole cell lysates.



Myt 1 (G-11): sc-74523. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

## 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.

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