

TOK-1 β (C-15): sc-15417

BACKGROUND

Combinations of cyclin-cyclin-dependent kinase (CDK) complex and their inhibitors coordinately regulate cell-cycle movement. INK4 family proteins p15, p16, p18 and p19 inhibit CDK4/CDK2, whereas Cip/Kip family proteins p21, p27 and p57, inhibit all of the CDKs. p21 induces cell cycle arrest, thus inhibiting CDK activity for Rb inactivation. In addition to binding of CDK-cyclin to the N-terminal region of p21, other proteins such as proliferating cell nuclear antigen (PCNA), SET/TAF1 and calmodulin are able to bind to the C-proximal region of p21. A novel p21 Cip1-binding protein TOK-1 binds to the C-terminal region of p21. TOK-1 is alternatively spliced to form TOK-1 α and TOK-1 β , which are comprised of 322 and 314 amino acids, respectively. TOK-1 co-localizes with p21 in nuclei and has similar expression pattern to that of p21. TOK-1 α , but not TOK-1 β , directly binds to the C-terminal proximal region of p21 and both are expressed at the G₁/S boundary of cell-cycle. TOK-1 α preferentially binds to an active form of CDK2 via p21 to make a ternary complex in human cells. In addition, TOK-1 α enhances the inhibitory activity of p21 to histone H1 kinase activity of CDK2, suggesting that TOK-1 α may be a new type of CDK2 modulator.

REFERENCES

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- Goubin F. and Ducommun B. 1995. Identification of binding domains on the p21 Cip1 cyclin-dependent kinase inhibitor. *Oncogene* 10: 2281-2287.
- Harper, J.W., Elledge, S.J., Keyomarsi, K., Dynlacht, B., Tsai, L.H., Zhang, P., Dobrowolski, S., Bai, C., Connell-Crowley, L. and Swindell, E. 1995. Inhibition of cyclin-dependent kinases by p21. *Mol. Biol. Cell* 6: 387-400.
- Luo, Y., Hurwitz, J. and Massague, J. 1995. Cell-cycle inhibition by independent CDK and PCNA binding domains in p21Cip1. *Nature* 375: 159-161.
- Connell-Crowley, L., Elledge, S.J. and Harper, J.W. 1998. G1 cyclin-dependent kinases are sufficient to initiate DNA synthesis in quiescent human fibroblasts. *Curr. Biol.* 8: 65-68.

CHROMOSOMAL LOCATION

Genetic locus: BCCIP (human) mapping to 10q26.2; Bccip (mouse) mapping to 7 F3.

SOURCE

TOK-1 β (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of TOK-1 β of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-15417 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TOK-1b (C-15) is recommended for detection of TOK-1 β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

TOK-1b (C-15) is also recommended for detection of TOK-1 β in additional species, including equine, canine and bovine.

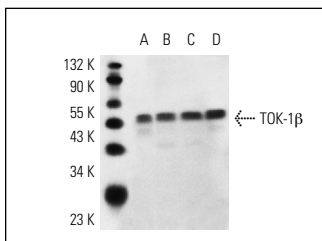
Molecular Weight of TOK-1 β : 45 kDa.

Positive Controls: SK-BR-3 cell lysate: sc-2218, Caki-1 cell lysate: sc-2224 or SW480 cell lysate: sc-2219.

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



TOK-1 β (C-15): sc-15417. Western blot analysis of TOK-1 β expression in SK-BR-3 (A), Caki-1 (B), SW480 (C) and COLO 320DM (D) whole cell lysates.

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.

PROTOCOLS

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