

Cks1/2 (F-12): sc-376663

BACKGROUND

The Cdc2 p34-cyclin B complex plays a critical role in the cell cycle by regulating the G₂ to M phase transition. Also referred to as M phase promoting factor or MPF, this complex is a required component of the cell cycle machinery and is necessary for cell entry into mitosis. The Cdc28 protein represents the *S. cerevisiae* counterpart of human Cdc2 p34 and has been found complexed to a regulatory protein, termed p13suc 1, in addition to cyclin B. Two proteins associated with the Cdc2 p34-cyclin B complex are called Cks1 and Cks2. Null mutations in the p13suc 1 and Cks1 genes result in the arrest of the cell cycle at either the G₁ or G₂ phase, suggesting that the proteins may also regulate the activity of cyclin dependent kinases that act at critical points early in the cell cycle. Cks2 (cyclin-dependent kinases regulatory subunit 2) is a 79 amino acid protein that binds to the catalytic subunit of cyclin-dependent kinases, such as those in the Cdc2 p34-cyclin B complex. An essential component of this cyclin/cyclin-dependent kinase complex, Cks2 contributes to cell cycle control and is able to form a homohexamer that can bind up to 6 subunits. Without proper activity of Cks2, the first metaphase/anaphase transition of meiosis cannot occur.

REFERENCES

1. Draetta, G., et al. 1987. Identification of p34 and p13, human homologs of the cell cycle regulators of fission yeast encoded by Cdc2⁺ and suc1⁺. *Cell* 50: 319-325.
2. Dunphy, W.G., et al. 1988. The *Xenopus* Cdc2 protein is a component of MPF, a cytoplasmic regulator of mitosis. *Cell* 54: 423-431.
3. Arion, D., et al. 1988. Cdc2 is a component of the M phase-specific histone H1 kinase: evidence for identity with MPF. *Cell* 55: 371-378.
4. Morla, A.O., et al. 1989. Reversible tyrosine phosphorylation of Cdc2: dephosphorylation accompanies activation during entry into mitosis. *Cell* 58: 193-203.

CHROMOSOMAL LOCATION

Genetic locus: CKS1B (human) mapping to 1q21.3, CKS2 (human) mapping to 9q22.2; Cks1b (mouse) mapping to 3 F1, Cks2 (mouse) mapping to 13 A5.

SOURCE

Cks1/2 (F-12) is a mouse monoclonal antibody raised against amino acids 1-79 representing full length Cks1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cks1/2 (F-12) is available conjugated to agarose (sc-376663 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376663 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376663 PE), fluorescein (sc-376663 FITC), Alexa Fluor® 488 (sc-376663 AF488), Alexa Fluor® 546 (sc-376663 AF546), Alexa Fluor® 594 (sc-376663 AF594) or Alexa Fluor® 647 (sc-376663 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376663 AF680) or Alexa Fluor® 790 (sc-376663 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cks1/2 (F-12) is recommended for detection of Cks1 and Cks2 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Cks1/2 (F-12) is also recommended for detection of Cks1 and Cks2 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of Cks1: 9 kDa.

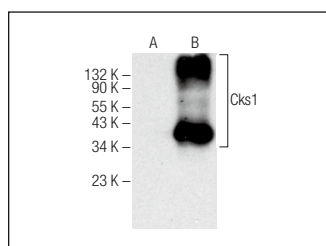
Molecular Weight of Cks2: 10 kDa.

Positive Controls: Cks1 (h): 293T Lysate: sc-171279.

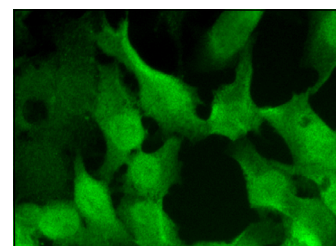
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Cks1/2 (F-12): sc-376663. Western blot analysis of Cks1 expression in non-transfected: sc-117752 (A) and human Cks1 transfected: sc-171279 (B) 293T whole cell lysates.



Cks1/2 (F-12): sc-376663. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Wan, Z., et al. 2022. Cks2 promotes the growth in non-small-cell lung cancer by downregulating cyclin-dependent kinase inhibitor. *Pathobiology* 89: 13-22.

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.

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