

# Dbf4 (K-15): sc-5702

## BACKGROUND

The Dbf4/Cdc7 protein kinase is essential for the activation of replication origins during S phase. Cdc7-Dbf4 efficiently phosphorylates several proteins that are required for the initiation of DNA replication, including five of the six minichromosome maintenance (Mcm) proteins and the p180 subunit of DNA polymerase  $\alpha$ -primase. This protein complex consists of the catalytic subunit Cdc7 associating with the regulatory and activating subunit Dbf4, and the kinase activity of the complex is regulated throughout the cell cycle mainly by fluctuating levels of Dbf4. Cdc7 is consistently expressed throughout the cell cycle, while the expression of Dbf4 is absent during G<sub>1</sub> phase and accumulates during S and G<sub>2</sub> phases. The anaphase-promoting complex rapidly degrades Dbf4 at the time of chromosome segregation, and the stability of Dbf4 remains low during pre-Start G<sub>1</sub> phase. The coordinated degradation of Dbf4 and the time of chromosomes separation is important to ensuring that prereplicative complexes, which assemble after chromosome segregation, do not immediately re-fire.

## REFERENCES

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## CHROMOSOMAL LOCATION

Genetic locus: DBF4 (human) mapping to 7q21.12; Dbf4 (mouse) mapping to 5 A2.

## SOURCE

Dbf4 (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Dbf4 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-5702 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Dbf4 (K-15) is recommended for detection of Dbf4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Dbf4 (K-15) is also recommended for detection of Dbf4 in additional species, including equine and porcine.

Suitable for use as control antibody for Dbf4 siRNA (h): sc-37605, Dbf4 siRNA (m): sc-37606, Dbf4 shRNA Plasmid (h): sc-37605-SH, Dbf4 shRNA Plasmid (m): sc-37606-SH, Dbf4 shRNA (h) Lentiviral Particles: sc-37605-V and Dbf4 shRNA (m) Lentiviral Particles: sc-37606-V.

Molecular Weight of Dbf4: 77 kDa.

Positive Controls: Sol8 nuclear extract: sc-2157, PC-3 nuclear extract: sc-2152 or SW480 nuclear extract: sc-2155.

## 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) 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.

## 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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Try **Dbf4 (6G9): sc-293398**, our highly recommended monoclonal alternative to Dbf4 (K-15).