

# ORC4 (D-8): sc-393985

## BACKGROUND

The initiation of DNA replication is a multi-step process that depends on the formation of pre-replication complexes, which trigger initiation. Among the proteins required for establishing these complexes are the origin recognition complex (ORC) proteins, which bind specifically to origins of replication, where they serve as scaffold for the assembly of additional initiation factors. Human ORC subunits 1-6 are expressed in the nucleus of proliferating cells and tissues, such as the testis. ORC1 and ORC2 are both expressed at equivalent concentrations throughout the cell cycle; however, only ORC2 remains stably bound to chromatin. ORC4 and ORC6 are also expressed constantly throughout the cell cycle. ORC2, ORC3, ORC4 and ORC5 form a core complex upon which ORC6 and ORC1 assemble. The formation of this core complex suggests ORC proteins play a crucial role in the G<sub>1</sub>/S transition in mammalian cells.

## REFERENCES

- Quintana, D.G., et al. 1997. Identification of the HsORC4, a member of the human origin of replication recognition complex. *J. Biol. Chem.* 272: 28247-28251.
- Mendez, J., et al. 2000. Chromatin association of human origin recognition complex, Cdc6, and minichromosome maintenance proteins during the cell cycle: assembly of prereplication complexes in late mitosis. *Mol. Cell. Biol.* 20: 8602-8612.
- Dhar, S.K., et al. 2000. Identification and characterization of the human ORC6 homolog. *J. Biol. Chem.* 275: 34983-34988.
- Thome, K.C., et al. 2000. Subsets of human origin recognition complex (ORC) subunits are expressed in non-proliferating cells and associate with non-ORC proteins. *J. Biol. Chem.* 275: 35233-35241.
- Kreitz, S., et al. 2000. The human origin-recognition-complex protein 1 dissociates from chromatin during S phase in HeLa cells. *J. Biol. Chem.* 276: 6337-6342.
- Natale, D.A., et al. 2000. Selective instability of ORC1 protein accounts for the absence of functional origin recognition complexes during the M-G<sub>1</sub> transition in mammals. *EMBO J.* 19: 2728-2738.

## CHROMOSOMAL LOCATION

Genetic locus: ORC4 (human) mapping to 2q22.3; Orc4 (mouse) mapping to 2 C1.1.

## SOURCE

ORC4 (D-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 375-398 near the C-terminus of ORC4 of human origin.

## PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-393985 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-393985 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

ORC4 (D-8) is recommended for detection of ORC4 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).

Suitable for use as control antibody for ORC4 siRNA (h): sc-38157, ORC4 siRNA (m): sc-38158, ORC4 shRNA Plasmid (h): sc-38157-SH, ORC4 shRNA Plasmid (m): sc-38158-SH, ORC4 shRNA (h) Lentiviral Particles: sc-38157-V and ORC4 shRNA (m) Lentiviral Particles: sc-38158-V.

ORC4 (D-8) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

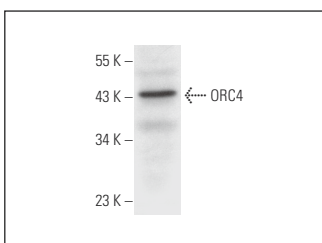
Molecular Weight of ORC4: 45 kDa.

Positive Controls: A549 cell lysate: sc-2413.

## 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 L-Agarose: sc-2336 (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



ORC4 (D-8): sc-393985. Western blot analysis of ORC4 expression in A549 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.