

ORC1 (H-80): sc-28741

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. ORC proteins 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 that ORC proteins play a crucial role in the G₁-S transition in mammalian cells.

REFERENCES

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- Dhar, S.K. and Dutta, A. 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-G₁ transition in mammals. *EMBO J.* 19: 2728-2738.

CHROMOSOMAL LOCATION

Genetic locus: ORC1L (human) mapping to 1p32.3; Orc1l (mouse) mapping to 4 C7.

SOURCE

ORC1 (H-80) is a rabbit polyclonal antibody raised against amino acids 782-861 mapping at the C-terminus of ORC1 of human origin.

PRODUCT

Each vial contains 200 µg IgG 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-28741 X, 200 µg/0.1 ml.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

ORC1 (H-80) is recommended for detection of ORC1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

ORC1 (H-80) is also recommended for detection of ORC1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for ORC1 siRNA (h): sc-38151, ORC1 siRNA (m): sc-38152, ORC1 shRNA Plasmid (h): sc-38151-SH, ORC1 shRNA Plasmid (m): sc-38152-SH, ORC1 shRNA (h) Lentiviral Particles: sc-38151-V and ORC1 shRNA (m) Lentiviral Particles: sc-38152-V.

ORC1 (H-80) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of ORC1: 120 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210 or Ramos nuclear extract: sc-2153.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Di Paola, D., et al. 2010. Increased origin activity in transformed versus normal cells: identification of novel protein players involved in DNA replication and cellular transformation. *Nucleic Acids Res.* 38: 2314-2331.
- Di Paola, D. and Zannis-Hadjopoulos, M. 2012. Comparative analysis of pre-replication complex proteins in transformed and normal cells. *J. Cell. Biochem.* 113: 1333-1347.

RESEARCH USE

For research use only, not for use in diagnostic procedures.


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Try **ORC1 (F-10): sc-398734** or **ORC1 (7A7): sc-23887**, our highly recommended monoclonal alternatives to ORC1 (H-80).