SANTA CRUZ BIOTECHNOLOGY, INC.

ORC3 (H-97): sc-98930

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 G_1-S transition in mammalian cells.

REFERENCES

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2. Mendez, J. and Stillman, B. 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.
3. Dhar, S.K. and Dutta, A. 2000. Identification and characterization of the human ORC6 homolog. J. Biol. Chem. 275: 34983-34988.
4. Thome, K.C., Dhar, S.K., Quintana, D.G., Delmolino, L., Shahsafaei, A. and Dutta, A. 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.
5. Kreitz, S., Ritzi, M., Baack, M. and Knippers, R. 2000. The human origin-recognition-complex protein 1 dissociates from chromatin during S phase in HeLa cells. J. Biol. Chem. 276: 6337-6342.
6. Natale, D.A., Li, C.J., Sun, W.H. and DePamphilis, M.L. 2000. Selective instability of ORC1 protein accounts for the absence of functional origin recognition complexes during the M-G_1 transition in mammals. EMBO J. 19: 2728-2738.

CHROMOSOMAL LOCATION

Genetic locus: ORC3L (human) mapping to 6q15; Orc3l (mouse) mapping to 4 A5.

SOURCE

ORC3 (H-97) is a rabbit polyclonal antibody raised against amino acids 617-707 mapping at the C-terminus of ORC3 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.

APPLICATIONS

ORC3 (H-97) is recommended for detection of ORC3 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).

ORC3 (H-97) is also recommended for detection of ORC3 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for ORC3 siRNA (h): sc-38155, ORC3 siRNA (m): sc-38156, ORC3 shRNA Plasmid (h): sc-38155-SH, ORC3 shRNA Plasmid (m): sc-38156-SH, ORC3 shRNA (h) Lentiviral Particles: sc-38155-V and ORC3 shRNA (m) Lentiviral Particles: sc-38156-V.

Molecular Weight of ORC3: 80 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or A549 cell lysate: sc-2413.

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

1. Song, B., Liu, X.S., Davis, K. and Liu X. 2011. Plk1 phosphorylation of Orc2 promotes DNA replication under conditions of stress. Mol. Cell. Biol. 31: 4844-4856.

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.