SANTA CRUZ BIOTECHNOLOGY, INC.

ORC4 (17): sc-136331

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 the ORC6 and ORC1 assemble. The formation of this core complex suggests ORC proteins play a crucial role in the G_1-S transition in mammalian cells.

REFERENCES

1. 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.
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.

CHROMOSOMAL LOCATION

Genetic locus: ORC4L (human) mapping to 2q22.3; Orc4l (mouse) mapping to 2 C1.1.

SOURCE

ORC4 (17) is a mouse monoclonal antibody raised against amino acids 318-436 of ORC4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-136331 X, 200 µg/0.1 ml.

ORC4 (17) is available conjugated to agarose (sc-136331 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-136331 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-136331 PE), fluorescein (sc-136331 FITC), Alexa Fluor® 488 (sc-136331 AF488), Alexa Fluor® 594 (sc-136331 AF594) or Alexa Fluor® 647 (sc-136331 AF647), 200 µg/ml, for IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-136331 AF680) or Alexa Fluor® 790 (sc-136331 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

ORC4 (17) is recommended for detection of ORC4 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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 (17) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

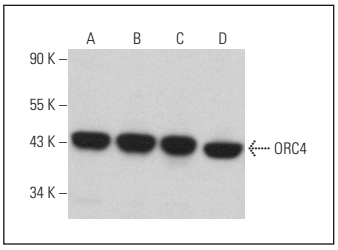
Molecular Weight of ORC4: 45 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, A549 cell lysate: sc-2413 or HeLa whole cell lysate: sc-2200.

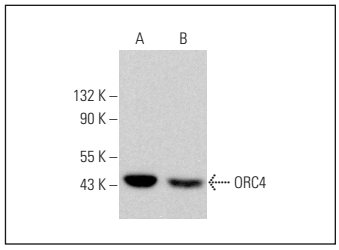
RECOMMENDED SUPPORT REAGENTS

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



ORC4 (17): sc-136331. Western blot analysis of ORC4 expression in A549 (**A**), A-431 (**B**), HeLa (**C**) and Neuro-2A (**D**) whole cell lysates.



ORC4 (17): sc-136331. Western blot analysis of ORC4 expression in IMR-32 (**A**) and A2058 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Fernandez-Vidal, A., et al. 2014. A role for DNA polymerase θ in the timing of DNA replication. Nat. Commun. 5: 4285.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.