SANTA CRUZ BIOTECHNOLOGY, INC.

ORC3 (K-17): sc-21862

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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 $G_{1\text{-}S}$ transition in mammalian cells.

REFERENCES

1. 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.
2. Dhar, S.K. and Dutta, A. 2000. Identification and characterization of the human ORC6 homolog. J. Biol. Chem. 275: 34983-34988.
3. 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.
4. 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.
5. Natale, D.A., et al. 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 (K-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-21862 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-21862 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

ORC3 (K-17) 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), 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 (K-17) 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.

ORC3 (K-17) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of ORC3: 80 kDa.

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

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.

SELECT PRODUCT CITATIONS

1. Rampakakis, E., et al. 2008. Ku is involved in cell growth, DNA replication and $G_{1\text{-}S}$ transition. J. Cell Sci. 121: 590-600.
2. Zhu, H., et al. 2013. Impaired N-cadherin-mediated adhesion increases the risk of inducible ventricular arrhythmias in isolated rat hearts. Sci. Res. Essays Vol. 7: 2983-2991.

STORAGE

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