

ORC4 (H-300): sc-20634

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 G₁/S transition in mammalian cells.

CHROMOSOMAL LOCATION

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

SOURCE

ORC4 (H-300) is a rabbit polyclonal antibody raised against amino acids 137-436 of ORC4 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.

STORAGE

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

APPLICATIONS

ORC4 (H-300) 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ORC4 (H-300) is also recommended for detection of ORC4 in additional species, including equine, canine, bovine and porcine.

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 (H-300) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

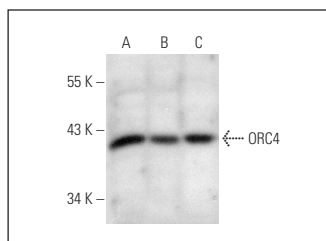
Molecular Weight of ORC4: 45 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, A-431 nuclear extract: sc-2122 or A549 cell lysate: sc-2413.

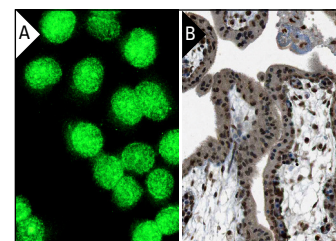
RESEARCH USE

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

DATA



ORC4 (H-300): sc-20634. Western blot analysis of ORC4 expression in HeLa (A), A-431 (B) and A549 (C) nuclear extracts.



ORC4 (H-300): sc-20634. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing nuclear and cytoplasmic staining of trophoblastic cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

- Rowntree, R.K., et al. 2006. Mapping of DNA replication origins to non-coding genes of the X-inactivation center. *Mol. Cell. Biol.* 26: 3707-3717.
- 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.
- Zhu, H., et al. 2013. Impaired N-cadherin-mediated adhesion increases the risk of inducible ventricular arrhythmias in isolated rat hearts. *Sci. Res. Essays* 7: 2983-2991.
- Abdelbaqi, K., et al. 2013. Ku protein levels, localization and association to replication origins in different stages of breast tumor progression. *J. Cancer* 4: 358-370.

PROTOCOLS

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