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ORC4 (H-2): sc-398455

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.

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.

CHROMOSOMAL LOCATION

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

SOURCE

ORC4 (H-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 332-347 within an internal region of ORC4 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ 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-398455 X, 200 µg/0.1 ml.

ORC4 (H-2) is available conjugated to agarose (sc-398455 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398455 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398455 PE), fluorescein (sc-398455 FITC), Alexa Fluor[®] 488 (sc-398455 AF488), Alexa Fluor[®] 546 (sc-398455 AF546), Alexa Fluor[®] 594 (sc-398455 AF594) or Alexa Fluor[®] 647 (sc-398455 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-398455 AF680) or Alexa Fluor[®] 790 (sc-398455 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398455 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

ORC4 (H-2) is recommended for detection of ORC4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

ORC4 (H-2) 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-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

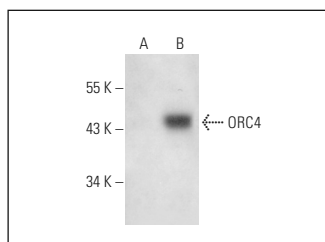
Molecular Weight of ORC4: 45 kDa.

Positive Controls: ORC4 (h): 293T Lysate: sc-113520.

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 (H-2): sc-398455. Western blot analysis of ORC4 expression in non-transfected: sc-117752 (A) and human ORC4 transfected: sc-113520 (B) 293T whole cell lysates.

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.