

ORC1 (7A7): sc-23887



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 G₁-S transition in mammalian cells.

CHROMOSOMAL LOCATION

Genetic locus: ORC1 (human) mapping to 1p32.3; Orc1 (mouse) mapping to 4 C7.

SOURCE

ORC1 (7A7) is a rat monoclonal antibody raised against partially purified His-tagged bacterially expressed fusion protein corresponding to human ORC1.

PRODUCT

Each vial contains 200 µg IgG₁ 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-23887 X, 200 µg/0.1 ml.

ORC1 (7A7) is available conjugated to agarose (sc-23887 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-23887 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23887 PE), fluorescein (sc-23887 FITC), Alexa Fluor® 488 (sc-23887 AF488), Alexa Fluor® 546 (sc-23887 AF546), Alexa Fluor® 594 (sc-23887 AF594) or Alexa Fluor® 647 (sc-23887 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-23887 AF680) or Alexa Fluor® 790 (sc-23887 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ORC1 (7A7) is recommended for detection of ORC1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for ORC1 siRNA (h): sc-38151, ORC1 siRNA (m): sc-38152, ORC1 shRNA Plasmid (h): sc-38151-SH, ORC1 shRNA Plasmid (m): sc-38152-SH, ORC1 shRNA (h) Lentiviral Particles: sc-38151-V and ORC1 shRNA (m) Lentiviral Particles: sc-38152-V.

ORC1 (7A7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

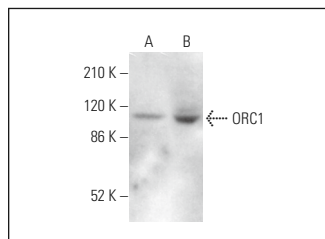
Molecular Weight of ORC1: 120 kDa.

Positive Controls: Ramos nuclear extract: sc-2153, SP2/0 whole cell lysate: sc-364795 or TK-1 whole cell lysate: sc-364798.

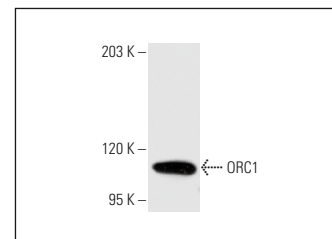
STORAGE

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

DATA



ORC1 (7A7): sc-23887. Western blot analysis of ORC1 expression in SP2/0 (A) and TK-1 (B) whole cell lysates.



ORC1 (7A7): sc-23887. Western blot analysis of ORC1 expression in Ramos nuclear extract.

SELECT PRODUCT CITATIONS

1. Rampakakis, E., et al. 2008. Ku is involved in cell growth, DNA replication and G₁-S transition. *J. Cell Sci.* 121: 590-600.
2. 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.
3. Di Paola, D., et al. 2012. Comparative analysis of pre-replication complex proteins in transformed and normal cells. *J. Cell. Biochem.* 113: 1333-1347.
4. Isaacs, J.T., et al. 2012. Adaptive auto-regulation of androgen receptor provides a paradigm shifting rationale for bipolar androgen therapy (BAT) for castrate resistant human prostate cancer. *Prostate* 72: 1491-1505.
5. 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.
6. Bauwens, S., et al. 2021. The telomeric protein TRF2 regulates replication origin activity within pericentromeric heterochromatin. *Life* 11: 267.
7. Higa, M., et al. 2021. TRF2-mediated ORC recruitment underlies telomere stability upon DNA replication stress. *Nucleic Acids Res.* 49: 12234-12251.

RESEARCH USE

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

PROTOCOLS

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

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