SANTA CRUZ BIOTECHNOLOGY, INC.

ORC1 (F-10): sc-398734

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-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.
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.

CHROMOSOMAL LOCATION

Genetic locus: ORC1 (human) mapping to 1p32.3.

SOURCE

ORC1 (F-10) is a mouse monoclonal antibody raised against amino acids 782-861 mapping at the C-terminus of ORC1 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-398734 X, 200 µg/0.1 ml.

ORC1 (F-10) is available conjugated to agarose (sc-398734 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398734 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398734 PE), fluorescein (sc-398734 FITC), Alexa Fluor® 488 (sc-398734 AF488), Alexa Fluor® 546 (sc-398734 AF546), Alexa Fluor® 594 (sc-398734 AF594) or Alexa Fluor® 647 (sc-398734 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398734 AF680) or Alexa Fluor® 790 (sc-398734 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ORC1 (F-10) is recommended for detection of ORC1 of 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).

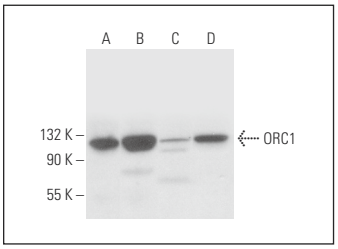
Suitable for use as control antibody for ORC1 siRNA (h): sc-38151, ORC1 shRNA Plasmid (h): sc-38151-SH and ORC1 shRNA (h) Lentiviral Particles: sc-38151-V.

ORC1 (F-10) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

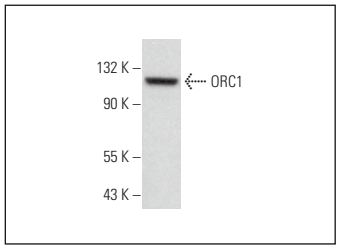
Molecular Weight of ORC1: 120 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Ramos nuclear extract: sc-2153 or MCF7 whole cell lysate: sc-2206.

DATA



ORC1 (F-10): sc-398734. Western blot analysis of ORC1 expression in HeLa (**A**) and Ramos (**B**) nuclear extracts and Hep G2 (**C**) and MCF7 (**D**) whole cell lysates.



ORC1 (F-10): sc-398734. Western blot analysis of ORC1 expression in HEL 92.1.7 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Silva, B., et al. 2021. TERRA transcription destabilizes telomere integrity to initiate break-induced replication in human ALT cells. Nat. Commun. 12: 3760.
2. Gemble, S., et al. 2022. Genetic instability from a single S phase after whole-genome duplication. Nature 604: 146-151.
3. Wu, L., et al. 2023. Origin recognition complex subunit 1 (ORC1) is a potential biomarker and therapeutic target in cancer. BMC Med. Genomics 16: 243.

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.