SANTA CRUZ BIOTECHNOLOGY, INC.

ORC6 (3A4): sc-32735

SANTA CRUZ BIOTECHNOLOGY

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, 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 G_1-S transition in mammalian cells.

CHROMOSOMAL LOCATION

Genetic locus: ORC6 (human) mapping to 16q11.2; Orc6 (mouse) mapping to 8 C3.

SOURCE

ORC6 (3A4) is a rat monoclonal antibody raised against recombinant ORC6 protein of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} 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-32735 X, 200 µg/0.1 ml.

ORC6 (3A4) is available conjugated to agarose (sc-32735 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32735 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32735 PE), fluorescein (sc-32735 FITC), Alexa Fluor® 488 (sc-32735 AF488), Alexa Fluor® 546 (sc-32735 AF546), Alexa Fluor® 594 (sc-32735 AF594) or Alexa Fluor® 647 (sc-32735 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32735 AF680) or Alexa Fluor® 790 (sc-32735 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ORC6 (3A4) is recommended for detection of ORC6 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for ORC6 siRNA (h): sc-38161, ORC6 siRNA (m): sc-38162, ORC6 shRNA Plasmid (h): sc-38161-SH, ORC6 shRNA Plasmid (m): sc-38162-SH, ORC6 shRNA (h) Lentiviral Particles: sc-38161-V and ORC6 shRNA (m) Lentiviral Particles: sc-38162-V.

ORC6 (3A4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

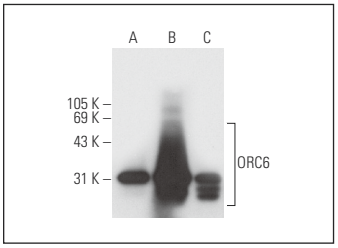
Molecular Weight of ORC6: 30 kDa.

Positive Controls: ORC6 (h2): 293T Lysate: sc-116694.

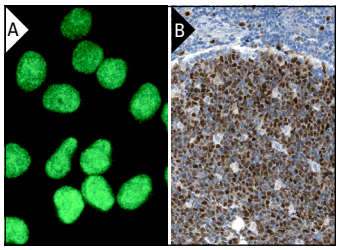
STORAGE

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

DATA



ORC6 (3A4): sc-32735. Western blot analysis of ORC6 expression in non-transfected 293T: sc-117752 (**A**), human ORC6 transfected 293T: sc-116694 (**B**) and HeLa (**C**) whole cell lysates.



ORC6 (3A4): sc-32735. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing nuclear staining of lymphoid cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Rampakakis, E., et al. 2008. Ku is involved in cell growth, DNA replication and G_1-S transition. J. Cell Sci. 121: 590-600.
2. 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.
3. Varma, D., et al. 2012. Recruitment of the human Cdt1 replication licensing protein by the loop domain of Hec1 is required for stable kinetochore-microtubule attachment. Nat. Cell Biol. 14: 593-603.
4. 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.
5. Passerini, V., et al. 2016. The presence of extra chromosomes leads to genomic instability. Nat. Commun. 7: 10754.
6. Huang, Y., et al. 2016. A role of hIPI3 in DNA replication licensing in human cells. PLoS ONE 11: e0151803.
7. Matson, J.P., et al. 2017. Rapid DNA replication origin licensing protects stem cell pluripotency. Elife 6: e30473.
8. Chirackal Manavalan, A.P., et al. 2019. CDK12 controls G_1/S progression by regulating RNAPII processivity at core DNA replication genes. EMBO Rep. 20: e47592.
9. Silva, B., et al. 2021. TERRA transcription destabilizes telomere integrity to initiate break-induced replication in human ALT cells. Nat. Commun. 12: 3760.

RESEARCH USE

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