SANTA CRUZ BIOTECHNOLOGY, INC.

ORC1 (TK 1/2): sc-53391

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. 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

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3. Dhar, S.K. and Dutta, A. 2000. Identification and characterization of the human ORC6 homolog. J. Biol. Chem. 275: 34983-34988.
4. Thome, K.C., Dhar, S.K., Quintana, D.G., Delmolino, L., Shahsafaei, A. and Dutta, A. 2000. Subsets of human origin recognition complex (ORC) subunits are expressed in non-proliferating cells and associate with non-ORC proteins. J. Biol. Chem. 275: 35233-35241.
5. Natale, D.A., Li, C.J., Sun, W.H. and DePamphilis, M.L. 2000. Selective instability of ORC1 protein accounts for the absence of functional origin recognition complexes during the M-G_1 transition in mammals. EMBO J. 19: 2728-2738.
6. Kreitz, S., Ritzi, M., Baack, M. and Knippers, R. 2000. The human origin-recognition-complex protein 1 dissociates from chromatin during S phase in HeLa cells. J. Biol. Chem. 276: 6337-6342.
7. Vashee, S., Simancek, P., Challberg, M.D. and Kelly, T.J. 2001. Assembly of the human origin recognition complex. J. Biol. Chem. 276: 26666-26673.
8. Dhar, S.K., Delmolino, L. and Dutta, A. 2001. Architecture of the human origin recognition complex. J. Biol. Chem. 276: 29067-29071.

SOURCE

ORC1 (TK 1/2) is a mouse monoclonal antibody raised against full length ORC1 protein of *Xenopus* origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ORC1 (TK 1/2) is recommended for detection of ORC1 of *Xenopus laevis* 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

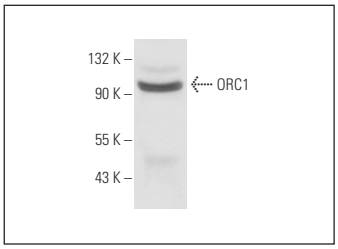
Molecular Weight of ORC1: 120 kDa.

Positive Controls: XLK-WG whole cell lysate: sc-364801.

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).

DATA



ORC1 (TK 1/2): sc-53391. Western blot analysis of ORC1 expression in XLK-WG whole cell lysate.

SELECT PRODUCT CITATIONS

1. Simon, A.C., Sannino, V., Costanzo, V. and Pellegrini, L. 2016. Structure of human Cdc45 and implications for CMG helicase function. Nat. Commun. 7: 11638.
2. Tao, Y., Aparicio, T., Li, M., Leong, K.W., Zha, S. and Gautier, J. 2021. Inhibition of DNA replication initiation by silver nanoclusters. Nucleic Acids Res. 49: 5074-5083.

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.

PROTOCOLS

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