

PRODUCT INFORMATION



ORC1 BAH domain (human, recombinant)

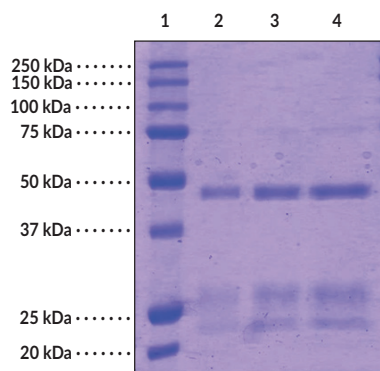
Item No. 11919

Overview and Properties

Synonyms: ORC1L, Origin Recognition Complex Subunit 1, PARC1, Replication Control Protein 1
Source: Recombinant N-terminal GST-tagged protein expressed in *E. coli*
Amino Acids: 2-185 (C-terminal truncation)
Molecular Weight: 48.2 kDa
Storage: -80°C (as supplied)
Stability: ≥6 months
Purity: *batch specific* (≥80% estimated by SDS-PAGE)
Supplied in: 20 mM Tris, pH 8.0, with 50 mM sodium chloride and 20% glycerol
Protein Concentration: *batch specific* mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Marker
Lane 2: ORC1 BAH domain (1 µg)
Lane 3: ORC1 BAH domain (2 µg)
Lane 4: ORC1 BAH domain (4 µg)

Representative gel image shown; actual purity may vary between each batch.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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Description

ORC1, a component of the Origin Recognition Complex, is necessary for the initiation of DNA replication. It is bound in complex with ORC2, ORC3, ORC4, ORC5, and ORC6. The BromoAdjacent Homology (BAH) domain of ORC1 recognizes histone 4 dimethylated at lysine 20, which is enriched at replication origins (ORI).¹ Chromatin immunoprecipitation and parallel sequencing of ORC1 DNA binding sites has been used to identify the ORI sites in HeLa cells.² In addition to BAH mediated nucleosome recognition, ORC1 contains ATPase activity which is required for loading the minichromosome maintenance helicase complex.³ ORC1 levels oscillate during the cell cycle, decreasing during S phase following formation of pre-replication complexes.⁴ Mutations in ORC1 have been shown to cause Meier-Gorlin syndrome, a form of primordial dwarfism.⁵ This protein product contains the BAH domain region of ORC1.

References

1. Kuo, A.J., Song, J., Cheung, P., *et al.* The BAH domain of ORC1 links H4K20me2 to DNA replication licensing and Meier-Gorlin syndrome. *Nature* **484**, 115-119 (2012).
2. Dellino, G.I., Cittaro, D., Piccioni, R., *et al.* Genome-wide mapping of human DNA-replication origins: Levels of transcription at ORC1 sites regulate origin selection and replication timing. *Genome Res.* **23(1)**, 1-11 (2013).
3. Fernandez-Cid, A., Riera, A., Tognetti, S., *et al.* An ORC/Cdc6/MCM2-7 complex is formed in a multistep reaction to serve as a platform for MCM double-hexamers assembly. *Mol. Cell.* **50(4)**, 577-588 (2013).
4. Tatsumi, Y., Ohta, S., Kimura, H., *et al.* The ORC1 cycle in human cells: I. Cell cycle-regulated oscillation of human ORC1. *J. Biol. Chem.* **278(42)**, 41528-41534 (2003).
5. Klingseisen, A. and Jackson, A.P. Mechanisms and pathways of growth failure in primordial dwarfism. *Genes Dev.* **25(19)**, 2011-2024 (2011).

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