



FIST SA

Protein involved in DNA replication, and modulation of its activity

Notre référence :
06081-01

Status des brevets

Priority patent application n° EP13305725.7 filed on May 31, 2013, entitled "Protein involved in DNA replication, and modulation of its activity."



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Status Commercial

Exclusive or non-exclusive license

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CONTEXT

Although DNA replication is a vital process for cell growth and its mechanism is highly conserved, recent studies also reveal significant diversity in origin structure, assembly of pre-replication complex (pre-RC) and regulation of replication initiation along evolutionary lines.

It is crucial to maintain genomic integrity in eukaryotic cells. During DNA replication, errors in pre-RC assembly often result in substantial changes in the amount of genetic material, which will cause cell death, or transform cells to become malignant tumors.

The first origin recognition complex (ORC) proteins were purified from cell extracts as a heterohexameric complex that specifically binds to origins of DNA replication and the subunits were named Orc1 through Orc6.

TECHNICAL DESCRIPTION

The invention is based on the characterization by the inventors of a new protein that physically interacts with the ORC protein complex and that is involved in DNA replication. By a purification process of the ORC protein complex, the inventors have identified a new ORC protein complex partner which has been identified to specifically interact with both ORC1 and LRWD1 proteins. They named this protein ORC Ubiquitin-ligase 1 or Obi1.

The invention relates to this protein or derived proteins as drug and to compounds affecting (i.e. inhibiting or activating) the expression or the activity of said protein.

INDUSTRIAL APPLICATIONS

This innovation could be used for **diagnosing** and **treating pathologies involving a deregulation of DNA replication (cancers or rare diseases** as Seckel syndrome, Meier-Gorlin syndrome, Majewski osteodysplastic primordial dwarfism type II, etc.)

Mots clés :

DNA replication origins
ORC Ubiquitin-ligase
cancer orphan diseases