

Formation of ARC coactivator complex

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Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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Literature references

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Reactome database release: 88

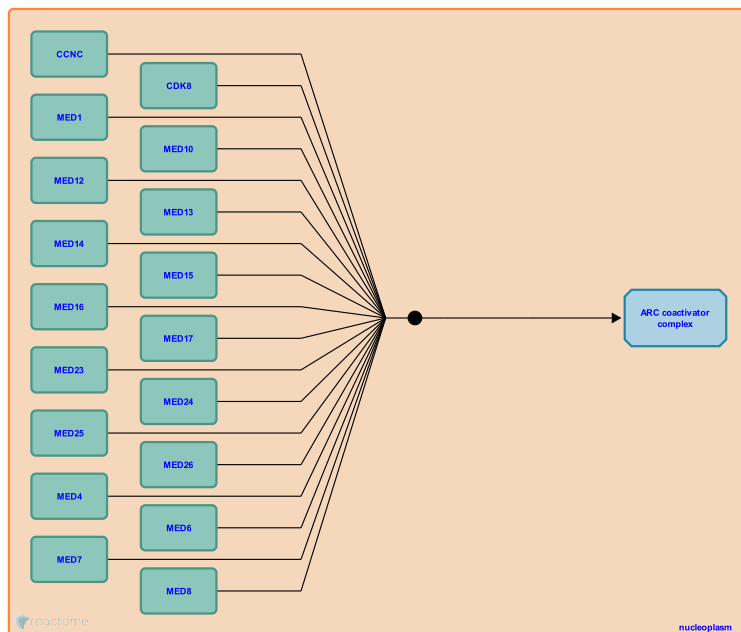
This document contains 1 reaction ([see Table of Contents](#))

Formation of ARC coactivator complex ↗

Stable identifier: R-HSA-212352

Type: binding

Compartments: nucleoplasm



ARC co-activator complex and assembly

The ARC co-activator complex is a subset of 18 proteins from the set of at least 31 Mediator proteins that, in different combinations, form "Adapter" complexes in human cells. Adapter complexes bridge between the basal transcription factors (including Pol II) and tissue-specific transcription factors (TFs) bound to sites within upstream Proximal Promoter regions or distal Enhancer regions (reviewed in Maston, 2006 and Naar, 2001).

The ARC complex was originally identified and named as a co-activator complex associated with transcription activator proteins (reviewed in Malik, 2005 and references therein). It was subsequently determined that many of the components of the ARC complex are also in the DRIP complex, and in the TRAP complex..

The ARC complex contains the following 14 proteins, which also are common to the DRIP and TRAP complexes: MED1, MED4, MED6, MED7, MED10, MED12, MED13, MED14, MED16, MED17, MED23, MED24, CDK8, CycC.

The ARC complex also contains 4 additional, ARC-specific components, which are now called: MED8, MED15, MED25, and MED 26 in the unified nomenclature scheme (Bourbon, 2004).

In addition, these various transcription co-activator proteins identified in mammalian cells were found to be the orthologues or homologues of the Mediator complex proteins in yeast, first identified by Kornberg and colleagues (Kelleher, 1990). The unified nomenclature system for these adapter / co-activator proteins now labels them Mediator 1 through Mediator 31 (Bourbon, 2004).

The order of addition of the ARC proteins during complex assembly is not fully determined, and may vary in different cell contexts. Therefore, ARC complex assembly is represented as a single reaction event, in which all 19 components assemble simultaneously into the ARC co-activator complex.

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Editions

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Reviewed

Freedman, LP.