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Therapeutic potential of Mediator complex subunits in metabolic diseases

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Abstract

The multisubunit Mediator is an evolutionary conserved transcriptional coregulatory complex in eukaryotes. It is needed for the transcriptional regulation of gene expression in general as well as in a gene specific manner. Mediator complex subunits interact with different transcription factors as well as components of RNA Pol II transcription initiation complex and in doing so act as a bridge between gene specific transcription factors and general Pol II transcription machinery. Specific interaction of various Mediator subunits with nuclear receptors (NRs) and other transcription factors involved in metabolism has been reported in different studies. Evidence indicates that ligand-activated NRs recruit Mediator complex for RNA Pol II-dependent gene transcription. These NRs have been explored as therapeutic targets in different metabolic diseases; however, they show side-effects as targets due to their overlapping involvement in different signaling pathways. Here we discuss the interaction of various Mediator subunits with transcription factors involved in metabolism and whether specific interaction of these transcription factors with Mediator subunits could be potentially utilized as therapeutic strategy in a variety of metabolic diseases.

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