CLOCK acetylates lysine-10 of histone H3, H4

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05/05/2024

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.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

Literature references

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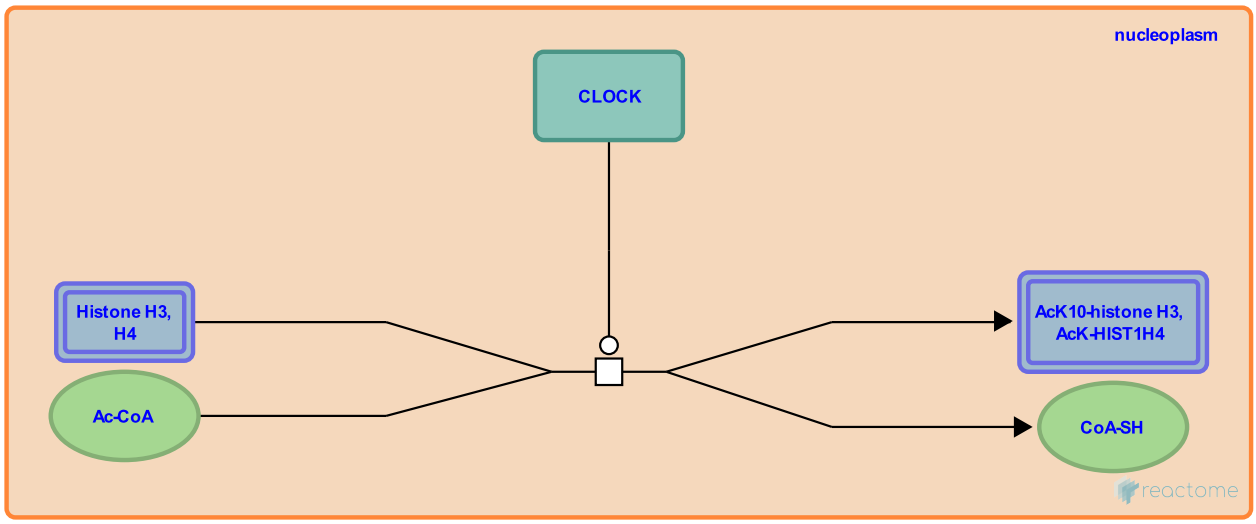
CLOCK acetylates lysine-10 of histone H3, H4 ↗

Stable identifier: R-HSA-3697920

Type: transition

Compartments: nucleoplasm

Inferred from: Clock acetylates histones H3, H4 (Homo sapiens)



CLOCK is a central element of the core clock mechanism that governs circadian rhythms. It has intrinsic histone acetyltransferase (HAT) activity which regulates the transcription of many clock-controlled genes (Doi et al. 2006, Hirayama et al. 2007). The carboxy-terminal region of CLOCK displays significant sequence homology with the carboxy-terminal domain of NCOA3 (ACTR), which also has intrinsic HAT activity (Chen et al. 1997). CLOCK acetylates histones H3 and H4 with greatest activity at H3K14, lesser activity at H3K9, but does not acetylate H2A and H2B (Doi et al. 2006 and Nakahata et al. 2007).

Editions

2013-03-12	Authored	Jupe, S.
2013-11-18	Edited	Jupe, S.
2013-11-18	Reviewed	Karagiannis, T.