CDB SEMINAR

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Wednesday, June 1, 2011
16:00~17:00 D2F Seminar Room

The role of chromatin orchestra in circadian rhythms

Summary

Dynamic gene expression patterns are necessary for adaptation to changing environments. Large numbers of transcripts amounting up to ~15% of the expressed genome show daily high-amplitude ~24-hour oscillations in various mouse organs including the liver. Such rhythms are generated by the synergistic interaction between the circadian oscillator and metabolic cycle. The heterodimeric CLOCK:BMAL1 activators are crucial components of the circadian oscillator. CLOCK:BMAL1 mediated transcription involves dynamic chromatin modifications. However, the mechanism of histone modification rhythms at Per loci and the functional relevance of factors in circadian rhythms are not clearly understood. We find temporally coordinated recruitment of chromatin modifying proteins to CLOCK:BMAL1 target promoters and their interactions generate coordinated changes in histone modifications.

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