



ACS Local Section
North Jersey

An intrinsically disordered phosphoswitch controls circadian timekeeping in humans

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Date: April 20rd, 2023

Time: 12:00 pm ET via Microsoft Teams

Abstract

Our lives are intimately linked to Earth's 24-hour solar cycle by circadian clocks that coordinate physiology and behavior into rhythms that coincide with the day/night cycle. Recent studies of the genetic basis of morning lark and night owl behavior in humans have identified inherited alleles that alter the intrinsic timing of circadian rhythms. Here, I'll describe our discovery of the mechanism by which morning lark alleles regulate clock protein dynamics and activity to shorten the human circadian clock by ~4 hours. NMR spectroscopy played a particularly powerful role in this project by identifying how sequential phosphorylation of a multi-serine cluster in the clock protein PERIOD generates feedback inhibition of the major clock kinase, CK1 δ , to control clock timing.

Connection Information

This will be a virtual meeting hosted via Microsoft Teams. A direct link to the meeting is located [HERE](#).

Further information can be found on the [NMR Topical Group website](#).

Please reach out to Tom Osborn Popp (thomas.osbornpopp@rutgers.edu) or Christine Jorge (christine.jorge@bms.com) with any questions.