SFB 1078

Protonation Dynamics in Protein Function

Mon, **June 14,** 2021

15:15 – 16:15

Freie Universität Berlin

via WebEx

Colloquium

Dr. Lisandro Otero

Leloir Institute Foundation, Buenos Aires, Argentina

Long-range signaling mechanism of *Xanthomonas campestris* bacteriophytochrome: a dance under red light

Phytochromes are photo-sensing proteins distributed among plants, fungi and prokaryotes, including pathogens, which reversibly photoconverted, between a red-absorbing (Pr) and a far-red-absorbing (Pfr) state. Despite the vast structural information currently reported, their dynamic protein structures are an extremely challenging matter in structural photobiology where several key questions still remain to be answered.
Undoubtedly, one of the most relevant interrogates is how the long-range structural changes are propagated from the light-sensing module (Photosensory Module) to the effector module (Output Module) during the Pr-Pfr photoconversion. This question remains elusive essentially due to two causes: i) Overwhelmingly, most reported phytochrome structures are truncated versions, without a complete Output Module, ii) No full-length phytochrome structures have been solved at the atomic level in both pure Pr and Pfr photostates.
Our group has recently reported a complete structural characterization at the atomic level of the bacteriophytochrome from the phytopathogenic *Xanthomonas campestris* (including two full-length versions) in the Pr and Pfr states.
In this talk, the light-driven conformational changes during the reversible photoswitching in a full-length phytochrome will be exposed.

.

www.sfb1078.de

Freie Universität Berlin · TU Berlin · Humboldt-Universität zu Berlin · Charité Universitätsmedizin Berlin · FMP Leibniz-Institut für Molekulare Pharmakologie · Justus-Liebig-Universität Gießen