CryoEM Current Practices Webinar

Structural determination of the Dicer-2•R2D2 complex

Helen Donelick

Ph.D. Candidate

Bass and Shen labs, Dept. of Biochemistry, University of Utah

12PM EDT / 9AM PDT Thursday, October 28, 2021

The ability to fight a viral infection is essential for all organisms. *Drosophila melanogaster* utilizes RNA interference for the antiviral response. Here, the protein, Dicer-2, is used for small interfering RNA (siRNA) biogenesis and passing one strand of the siRNA into Argonaute-2 to form the active RNA-induced silencing complex (RISC) that targets downstream RNA. It has been suggested that the helicase domain of many Dicer proteins is the domain where accessory proteins can bind and modulate function. Still, in *Drosophila*, we have little structural information on how accessory proteins, such as the small double-stranded RNA binding protein, R2D2, interact with Dicer-2. In this talk, I will present my work studying the complex of Dicer-2•R2D2 and the tricks I used for sample preparation and data processing. These tricks allowed us to achieve our current structure that shows an extra density on the helicase domain of Dicer-2 that we attribute to R2D2.

All are welcome to attend. Registration is at no-cost, but sign-up is required:
https://us02web.zoom.us/webinar/register/WN_KPlUCqNLSyKn7t3eN5ZzYQ

This webinar series is jointly hosted by the NIH Transformative High Resolution CryoEM Program Service Centers: the National Center for CryoEM Access and Training (NCCAT), the Pacific Northwest Center for CryoEM (PNCC), and the Stanford-SLAC CryoEM Center (S2C2) who provide no-cost access to cryoEM instrumentation and training. In this monthly series, we will highlight cryoEM methods and use the Q&A session after the seminar to stimulate discussion of best practices and interesting challenges that will be helpful to researchers new to the field. Representatives from all three service centers will also be on hand to answer questions about the cryoEM resources available to biomedical researchers and how to access them.