

第3回 若手研究者企画難研セミナー

第201回 難治疾患共同研究拠点セミナー

下記により難研セミナーを開催しますので、多数御来聴下さい。

記

日時： 2022年11月24日（木） 15:00 ～ 16:30

場所： 特別講堂（1号館西9階）

演者： Dr. Yen, Hsueh-Chi Sherry

(Institute of Molecular Biology, Academia Sinica, Taiwan)

演題： **Illuminating the construction scheme of protein complexes by cooperative stabilization interactions**

要旨：

Protein complex assembly forms the basis of nearly all biological functions yet how it occurs in cellulo remains elusive. A general phenomenon is that subunits of protein complexes are stabilized upon complex formation, whereas unincorporated subunits are degraded. How such cooperative stability influences protein complex formation and how unincorporated subunits are eliminated have not been comprehensively investigated. We performed the first systematic characterization of cooperative stabilization interactions within multimertic protein complexes and applied protein stability-guided modularity to infer the architecture and assembly scheme of protein complexes. Our data suggest that protein complex assembly follows a modular principle via preformed subcomplexes driven by cooperative stabilization interactions. We further identified a tangled ubiquitin ligase networks responsible for eliminating unassembled subunits. Our data suggest that viewing protein organization processes through the lens of protein stability and energy consumption will unveil new insights and pose concealed challenges about in cellulo proteome regulation landscapes.

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