"Fuzziness imparts context dependence on protein interactions"

Binding of intrinsically disordered (ID) proteins to their specific targets is generally assumed to be coupled to folding. Increasing experimental evidence demonstrates however that structural multiplicity or dynamic disorder can be retained in protein complexes and moreover, could be critical to function. Heterogeneous segments in fuzzy complexes can perturb conformational equilibrium and/or modulate the flexibility of the binding interface via transient interactions. Bound disordered regions can affect spacing of the globular domains, interaction motif(s), or they could even serve as a competitive partner. In general, fuzzy regions are utilized as on/off switches or rheostats to fine-tune binding affinity/specificity by further protein interactions, post-translational modifications or alternative splicing.

Owing to combinatorial motif usage, fuzzy regions often underlie the context-dependence of protein interactions. Molecular mechanisms of i) tissue-specificity via rewiring protein-protein interaction networks, and ii) evolution of conditional cooperativity of transcription factors will be discussed.


Date & time: Tuesday, May 19, 2015 at 12:00 noon
Location: Lecture Hall Y44-H-11, UZH Irchel

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