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v Ljubljani

Fakulteta *za kemijo*
in kemijsko tehnologijo

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VABILO NA PREDAVANJE
V OKVIRU DOKTORSKEGA ŠTUDIJA
KEMIJSKE ZNANOSTI / INVITATION TO THE
LECTURE WITHIN DOCTORAL PROGRAMME IN
CHEMICAL SCIENCES

Prof. Per Jemth

Uppsala University
Department of Medical Biochemistry and Microbiology
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z naslovom / title:

**Understanding protein-protein interactions
using an evolutionary approach**

**v ponedeljek, 24. 4. 2023 ob 15. uri /
on Monday, 24. 4. 2023 at 15.00**

**v predavalnici 4 v 3. nadstropju Fakultete za kemijo in
kemijsko tehnologijo, Večna pot 113 / in lecture room
4, 3rd floor at the Faculty of Chemistry and Chemical
Technology, Večna pot 113**

Vljudno vabljeni! | Kindly invited!

Abstract:

Specificity in protein-protein interactions are central to the living cell. Interactions involved in cell signaling and regulation are usually mediated by a binding motif from an intrinsically disordered region in one protein, and a folded domain in the other protein. The motif forms an ordered binding interface with the folded domain. Intriguingly, different domains may compete for a particular motif, or one motif may bind several domains. How functional recognition can be achieved among such apparently non-specific protein-protein interactions is not clear. We have used phylogenetic methods in combination with biophysical experiments to address the emergence and evolution of affinity and specificity in protein-protein interactions. In particular, we have investigated the evolution of the binding interface, but also flanking intrinsically disordered protein regions and how they modulate binding strength and thereby the specificity of the interaction. I will discuss the questions we pose, give a background on ancestral sequence reconstruction, and exemplify with recent published and unpublished results.