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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. dr. Paul Young

School of Biochemistry and Cell Biology

University College Cork

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z naslovom / title:

**What can protein: protein interactions tell us
about protein function in vivo: case studies from
the LNX and alpha actinin protein families**

v sredo, 20. 3. 2024 ob 15. uri /

on Wednesday, 20. 3. 2024 at 15.00

**v predavalnici 1 v 1. nadstropju Fakultete za kemijo in
kemijsko tehnologijo, Večna pot 113 / in lecture room 1,
1st floor at the Faculty of Chemistry and Chemical
Technology, Večna pot 113**

Vljudno vabljeni! | Kindly invited!

Abstract:

Protein: protein interactions are central to cellular function and inappropriate or misregulated interactions between proteins underlie many disease states. Increasingly, we know which genes and proteins are expressed in a particular cell type and a variety of methodological improvements are rapidly expanding the catalogue of known protein: protein interactions. Many proteins have hundreds if not thousands of documented interaction partners, but understanding which of these are physiologically relevant in a given context can be extremely challenging. Two examples of the relationship between protein interactions at the molecular level and phenotypes at the organismal level will be discussed.

(1) Mutations in actin crosslinking alpha-actinin proteins cause cardiac, renal and platelet disorders as well as influencing athletic performance. The molecular consequences of alpha-actinin-1 mutations that cause a human blood clotting disorder macrothrombocytopenia will be described.

(2) Deletion of Lnx genes cause abnormalities including defects in social memory and decreased anxiety-related behaviour in mice. LNX proteins potentially interact with hundreds of other proteins, but are expressed at very low levels in vivo. The relationship between protein: protein interactions and the behavioural phenotypes observed in Lnx knockout mice will be discussed.

Through these examples, some techniques commonly used to identify and characterize protein interactions will be outlined and future challenges in these fields will be highlighted.