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Centro Singular de Investigación en Química Biolóxica e Materiais Moleculares

Conferencia:

Phage display selection of chemically cyclized peptides for the development of therapeutics

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06/07/18

Aula de Seminarios do CiQUS

12:15 h

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Talk title:

Phage display selection of chemically cyclized peptides for the development of therapeutics

Abstract:

My laboratory is engaged in the discovery and development of cyclic peptides for therapeutic application. A major focus is the generation of ligands based on bicyclic peptides by phage display. The bicyclic peptides combine key qualities of antibody therapeutics (high affinity and specificity) and advantages of small molecule drugs (access to chemical synthesis, diffusion into tissue, various administration options). In my talk, I will introduce bicyclic peptide phage display, present new chemical reactions that we have applied to generate structurally highly diverse cyclic peptide libraries, and show recent data on the therapeutic activity of bicyclic peptides in vivo.

Graphical abstract

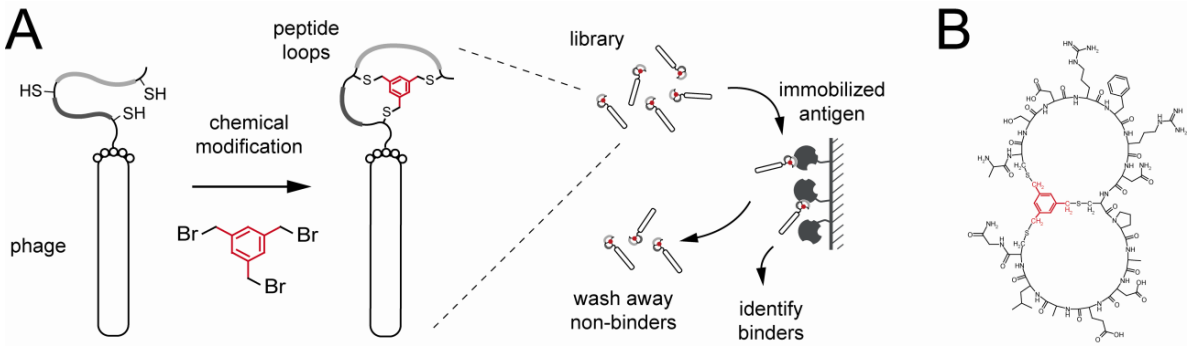

Figure: (A) Large libraries of random peptides (> 4 billion different peptides) are displayed on phage and cyclised in a chemical reaction (left). Binders to targets of interest are subsequently isolated in affinity selections (right). (B) Chemical structure of an isolated bicyclic peptide.

Short biography

Prof. Christian Heinis studied biochemistry at the ETHZ. After a PhD in the research group of Prof. Dr. Dario Neri at the ETHZ, he did two post-docs, the first one with Prof. Dr. Kai Johnsson at the EPFL and the second one with Sir Gregory Winter at the LMB in Cambridge, UK. In 2008 he started as an Assistant Professor at EPFL and was promoted in 2015 to Associate Professor. He is a scientific co-founder of the start-up company Bicycle Therapeutics. Since 2016, he is co-director of the Swiss research network NCCR Chemical Biology.