



Università  
Ca'Foscari  
Venezia

**Dipartimento  
di Scienze Molecolari  
e Nanosistemi**

IL DIPARTIMENTO DI SCIENZE MOLECOLARI E NANOSISTEMI  
ORGANIZZA UNA CONFERENZA DAL TITOLO:

## **Development of an albumin-binding ligand for prolonging the plasma half-life of peptide therapeutics**

**Relatore:**

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### **Abstract**

Peptide therapeutics applied intravenously are rapidly cleared from the blood circulation by renal filtration. The short half-life prevents their application to diseases that require drug exposure of several hours or days. An attractive strategy to hamper filtration of peptides in the kidneys is to tether them non-covalently to a long-lived serum protein such as human albumin. Several albumin-binding ligands based on peptides or small molecules were developed but they suffer from relatively low affinities for human albumin as well as a poor solubility in physiological buffers, reducing their potential application to peptide therapeutics. To overcome these limitations, a chimeric peptide-small molecule albumin ligand with low nanomolar affinity for human, rat and rabbit albumin, a high solubility and a small size suitable for automated synthesis of complex conjugates was successfully developed. Peptides conjugated to the tag retained their bioactivity and displayed around a 30-fold increase in half-life in rats.

**Il Docente organizzatore  
Dr. Alessandro Angelini**