DIPARTIMENTO DI FARMACIA E BIOTECNOLOGIE

Life & Chemical Sciences Seminars

From encoded combinatorial libraries to targeted therapeutics

Prof. Dario Neri
ETH, Zürich

Venerdì 2 marzo ore **11:00** – Aula 2,Via Belmeloro 6
(ospite Prof. A. Cavalli)

Abstract
Most drugs on the market are molecules (be them small or large), which are able to bind to one or more target proteins. The isolation and improvement of binding molecules to proteins of pharmaceutical interest represents a central problem in Chemistry, Biology and Pharmaceutical Sciences.
Over the last two decades, the isolation of human monoclonal antibodies from combinatorial phage display libraries has established itself as a facile, rapid and reliable methodology. Indeed, a number of products on the market have been isolated using that methodology. In full analogy, it is becoming increasingly easier to discover small organic binding molecules, by performing affinity capture procedures on DNA-encoded chemical libraries. Such libraries are large combinatorial mixtures of compounds, each individually tagged by a distinctive DNA fragment, serving as amplification barcode. DNA-encoded chemical libraries and antibody phage display libraries can be very large (i.e., containing billions of library members). The chemistry of large numbers facilitates ligand discovery.
In this lecture, I will present research activities of our laboratory (in collaboration with Philogen; www.philogen.com) both in the field of DNA-encoded chemical libraries and of antibody phage display libraries. I will also show how ligands, isolated from those libraries, have been used to develop pharmaceutical products, which are currently being tested in advanced clinical trials, for the treatment of cancer or of chronic inflammatory conditions.

Biosketch
Dario Neri was born in Rome on 1 May 1963, but grew up in Siena. He studied Chemistry at the Scuola Normale Superiore of Pisa and earned a PhD in Chemistry at the Swiss Federal Institute of Technology (ETH Zürich), under the supervision of Professor Kurt Wüthrich (Nobel Prize Chemistry 2002). After a post-doctoral research internship (1992-1996) at the Medical Research Council Centre in Cambridge (UK), under the supervision of Sir Gregory Winter, he became professor at ETH Zürich in 1996.
Dario Neri is currently Full Professor of Biomacromolecules at the Department of Chemistry and Applied Biosciences, ETH Zürich. The research of the Neri group focuses on the engineering of therapeutic antibodies for the therapy of cancer and other angiogenesis-related disorders. Other research activities include the chemical proteomic discovery of novel vascular markers of pathology and the development of DNA-encoded chemical libraries. Dario Neri is a co-founder of Philogen (www.philogen.com), a Swiss-Italian biotech company which has brought various antibody products into multicenter clinical trials for the treatment of cancer and of chronic inflammatory conditions,
Dario Neri has published over 300 articles in peer-reviewed scientific journals. He is the recipient of the ISOBM Abbott Prize 2000, of the Amgen-Dompe' Biotec Award 2000, of the Mangia d'Oro 2001, of the Prous Award 2006 of the European Federation of Medicinal Chemistry, of the Robert-Wenner-Prize 2007 of the Swiss Cancer League, of the SWISS BRIDGE Award 2008, of the Prix Mentzer of the French Medicinal Chemistry Society in 2011, of the Phoenix Prize 2014 and of an ERC Advanced Grant in 2015..

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