

Announcement of a lecture in Lugano by Prof. Ario de Marco,

As part of the “Lectures Seminars” for the Doctoral school in Cardiovascular and Human Cardiovascular Sciences, you are cordially invited to attend a seminar by **Ario de Marco, Assistant Professor at University of Nova Gorica, Nova Gorica, Slovenia.**

The lecture will be held on **Tuesday, February 18th, 2020** titled “**Nanobodies isolated from pre-immune libraries as tunable biotechnological tools**” at 12.00 at Zwick Conference Room, Cardiocentro Ticino.

We would strongly recommend clinical assistants, medical doctors, PhD students, postdocs and other researchers to participate to this interesting event.

Ario de Marco

He got a PhD in Biochemistry at the University of Udine (1994) and then moved as a post-doc to the Michigan Tech University, to the CNRS-IBMP in Strasbourg and to Novartis (Basel) before obtaining a position as the Head of the Protein Facility at EMBL-Heidelberg (2000). In these years he developed his interest for recombinant antibodies and he designed the first pre-immune library of nanobodies. In 2006 accepted a position at IFOM-IEO (Milan) as the Head of the Protein and Antibody Facility until he moved to Institut Curie, Paris (2011) where he worked for three years as the Head of the Therapeutic Antibody Group. He is Associate Professor at the University of Nova Gorica since 2010. In the last 15 years he participated to the evolution in the field of nanobody technology by optimizing the panning strategies to obtain binders towards the native form of membrane proteins.

“Nanobodies isolated from pre-immune libraries as tunable biotechnological tools”

Antibodies possess unmet capacity to bind selectively and at high affinity their cognates. For this reason they have been largely used in applications which rely on specific molecular recognition. Biosensors, nanoparticles, and even cells can be functionalized with antibodies for improving sensitivity and target specificity. However, conventional antibodies (IgGs) are large molecules (150 kDa) that are difficult to engineer. In the last years, antibody fragments have become more and more popular as an effective alternative and specifically nanobodies raised enthusiasm because of their minimal mass (14 kDa), high stability and relative similarity to human sequences. The seminar will describe the general features of nanobodies, the suitable selection, production, and engineering methodologies and will illustrate some specific examples of biotechnological applications.

References:

[A compact nanobody-DNAzyme conjugate enables antigen detection and signal amplification.](#)

Bernardinelli G, Oloketuyi S, Werner SF, Mazzega E, Högberg B, **de Marco A.**

N Biotechnol. 2019 Nov 1;56:1-8. doi: 10.1016/j.nbt.2019.10.009

[Comparative analysis of fusion tags used to functionalize recombinant antibodies.](#)

Veggiani G, Giabbai B, Semrau MS, Medagli B, Riccio V, Bajc G, Storici P, **de Marco A.**

Protein Expr Purif. 2020 Feb;166:105505. doi: 10.1016/j.pep.2019.105505. Epub 2019 Sep 26