



IL COLLEGIO
FONDAZIONE GHISLIERI



UNIVERSITÀ DI PAVIA
Department of
Molecular Medicine



Fondazione IRCCS
Policlinico San Matteo

Sistema Socio Sanitario



Regione
Lombardia

11th-23rd NOVEMBER 2024

Università di Pavia - Via Forlanini 14
Collegio Ghislieri - Piazza Ghislieri 5

Dr. LEYUAN MA Ph.D.

Assistant Professor, Department of Pathology and Laboratory Medicine,
Perelman School of Medicine, University of Pennsylvania, USA

“A synthetic booster vaccine for CAR T cells”

Chairpersons: Prof. **LUCA VANGELISTA** (University of Pavia) and Dr. **FRANCESCO AGUSTONI** (University of Pavia and Fondazione IRCCS Policlinico San Matteo di Pavia)

November 11th, 4:00 PM, Aula Mosca, Via Forlanini 14, Pavia

Summary:

"Adoptive T cell therapy using Chimeric Antigen Receptor T cells (CAR T) have made significant advances in the treatment of hematologic malignancies and solid tumors. However, a key challenge remains that a sufficient pool of functional CAR T cells are needed to achieve long-term therapeutic efficacy. Here, I'll present the development of a synthetic booster vaccine to enhance the long-term CAR T efficacy by vaccine-boosting donor cells through their chimeric receptor directly in vivo. I'll discuss an unexpected phenomenon that vaccine-mediated crosstalk between dendritic cells and CAR T cells elicited potent endogenous anti-tumor T cell responses that was critically dependent on CAR T-derived IFN- γ . Finally, I'll show a directed evolution based synthetic ligand (mimotope) discovery platform that can be leveraged to develop amphimimotope vaccine for any CAR of interest (US FDA-approved CD19 CAR will be used as an example)".

For information:

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“Engineering the immune system to treat and protect against diseases”

Series of Lessons in Immunology (Visiting USA Program)

Overview:

Our immune system plays a central role in maintaining tissue homeostasis. Immune dysregulation results in many disorders such as cancer, autoimmunity and chronic infections. The lecture series covers the fundamentals of immunology examines strategies in clinical and preclinical development for manipulating the immune system to treat and protect against disease. A specific focus will be given to the interaction of tumors with the immune system followed by approaches by which the immune system can be modulated to attack cancer. Strategies based in biotechnology, chemistry, materials science, and molecular biology to induce immune responses to treat infection, transplantation, and autoimmunity will also be covered.

•**The immune system, with a focus on T cells and vaccines**

November 11th, 8:30-10:30 PM, Aula Goldoniana, Collegio Ghislieri

•**Fundamental of cancer immunology November 12th, 8:30-10:30 PM, Aula Goldoniana, Collegio Ghislieri**

•**Engineering the immune system to treat cancer November 22nd, 4:00-7:00 PM, Aula Biblioteca Femminile, Collegio Ghislieri**

•**Engineering the immune system to treat non-cancerous diseases November 23rd, 9:30-12.30 AM, Aula Goldoniana, Collegio Ghislieri**

Those who participate in the "Series of Lessons in Immunology" will receive a certificate signed by Dr. Ma