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DELLE MARCHE

Project title: Nicotinamide N-methyltransferase enzyme as molecular target for effective anticancer therapies

Supervisor: Prof. Davide Sartini

Department of Odontostomatologic and Specialized Clinical Sciences (DiSCO)
(https://www.disco.univpm.it/)

UNIVERSITÀ POLITECNICA DELLE MARCHE

Supervisor: Prof. Davide Sartini
Research Group Description

Prof. Davide Sartini (Associate Professor of Biochemistry)

Description of the professor expertise

Past job positions
November 2003 - October 2006: PhD Student, UNIVPM.
September 2007 - December 2018: Post-Doc Fellow, UNIVPM and New York University.
December 2018 - December 2021: Assistant Professor in Biochemistry, UNIVPM.

Research interests
2006 - today: Nicotinamide N-methyltransferase (NNMT) as tumor biomarker: potential for diagnosis, prognosis and therapy.
2011 - today: Structural and kinetic characterization of NNMT: cloning expression and purification of human recombinant enzyme.
2017 - today: Role of paraoxonase-2 in solid tumors.

Teaching activity
Biochemistry – Medicine & Surgery Study Course
Molecular Biology – Dentistry Study Course
Clinical Biochemistry and Molecular Biology – Study Course of Technical Assistance and Diagnostic Healthcare Professions
Biochemistry – Nurse, Physiotherapist and Radiology Technician Study Courses

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Prof. Davide Sartini (Associate Professor of Biochemistry)

Description of the professor expertise

Research grants
Local Unit PI of the project entitled “Role of endogenous retroviruses and nicotinamide N-methyltransferase in radioresistance of head and neck cancers: potential as biomarkers for targeted therapy”, funded by the Italian Ministry of University and Research (code 2022S9K3A8) - Bando Prin 2022.

Academic duties
Board Member of PhD School of the Faculty of Medicine
Member of the Committee for Research Evaluation within DiSCO
Member of the Joint Committee Professor-Student within the Study Course of Technical Assistance Healthcare Professions

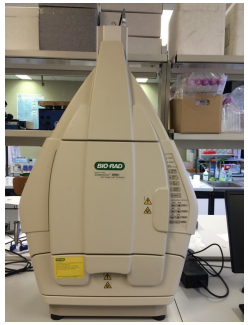
ORCID
orcid.org/0000-0003-3879-8647

Most recent publications
1. Peng Y, et al. Biochemistry. 2011 Sep 13;50(36):7800-8.
2. Donato V, et al. Nat Cell Biol. 2017 Apr;19(4):341-351.
3. Gao Y, et al. J Med Chem. 2019 Jul 25;62(14):6597-6614.
4. Campagna R, et al. Pigment Cell Melanoma Res. 2021 Nov;34(6):1039-1048.
5. Campagna R, et al. Int J Mol Sci. 2022 Dec 25;24(1):338.

UNIVERSITÀ POLITECNICA DELLE MARCHE

Supervisor: Prof. Davide Sartini
Research Group Description

Laboratory of Enzymology and Clinical Molecular Biology
(https://www.disco.univpm.it/content/bio10-emanuelli-monica)


Group Members
Prof. Monica Emanuelli (Head), Full Professor
Prof. Eleonora Salvolini, Associate Professor
Prof. Davide Sartini, Associate Professor
Dr. Valentina Pozzi, Assistant Professor
Dr. Roberto Campagna, Assistant Professor
Dr. Veronica Pompei, Postdoc Fellow
Dr. Emma Nicol Serritelli, PhD Student
Dr. Valentina Schiavoni, PhD Student
Dr. Eleonora Gerini, PhD Student

https://www.universiteitleiden.nl/en/staffmembers/nathaniel-martin#tab-1
https://www.universiteitleiden.nl/en/staffmembers/matthijs-van-haren#tab-1
https://www.kcl.ac.uk/people/richard-parsons
https://produccioncientifica.usal.es/investigadores/57552/detalle

Research topics
• Identification of tumor biomarkers for diagnosis, prognosis and therapy.
• Evaluation of the role played by NNMT and PON2 enzymes in neoplasms, aimed to unveil the contribution of these molecules in cancer cell metabolism and phenotype.
• Cloning, expression and purification of human recombinant proteins.

Universiteit Leiden The Netherlands

KING'S College LONDON

Active International Collaborations
• Prof. Martin and Dr. Van Haren, Leiden University, The Netherlands
• Prof. Richard Parsons, King's College London, UK
• Prof. Rubén Martínez Buey, University of Salamanca, Spain

VNiVERSiDAD D SALAMANCA

UNIVERSITÀ POLITECNICA DELLE MARCHE

The Department of Odontostomatologic and Specialized Clinical Sciences

Director: Prof. Andrea Giovagnoni

The **Department of Odontostomatologic and Specialized Clinical Sciences** is the scientific and educational organizational structure of the UNIVPM University established in 2008, devoted to the promotion of scientific research, education and the dissemination of scientific research results in the community.

Its main objectives are to plan, organize and regularly evaluate the quality of research activity carried out in the scientific fields and disciplines under its competence; to plan, organize and manage the first-level and master's courses of the Faculty of Medicine; and, finally, to provide cultural and educational activities and contribute to training and orientation activities based on the needs of students in cooperation with the Medical Association.

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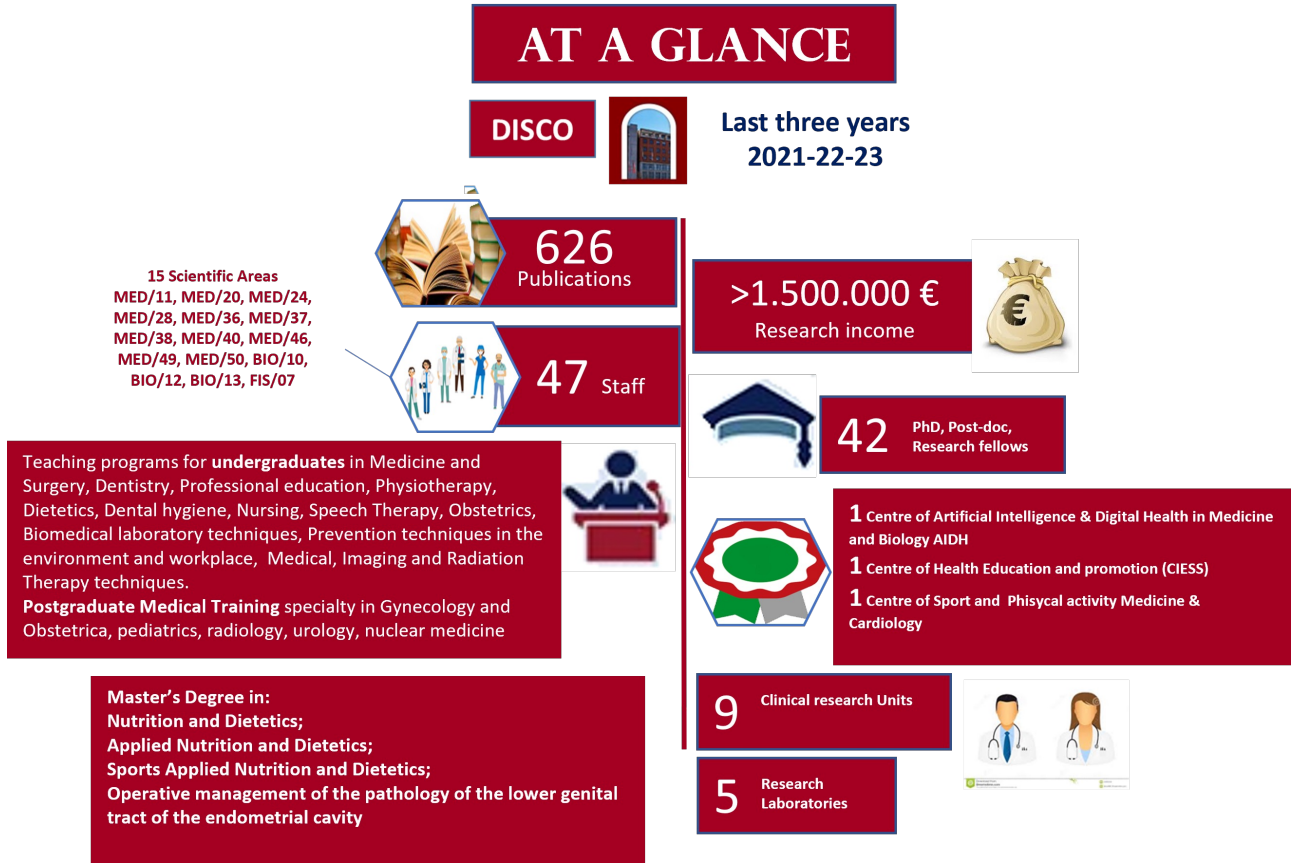

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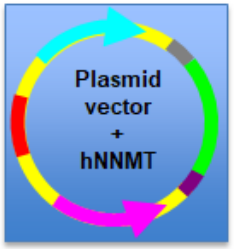
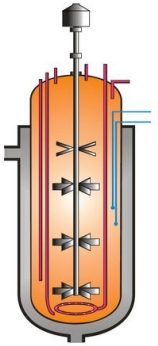
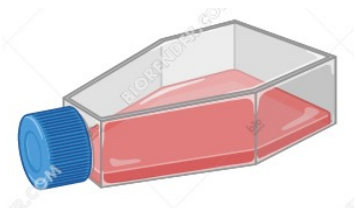
Supervisor: Prof. Davide Sartini

Project Idea: Nicotinamide N-methyltransferase enzyme as molecular target for effective anticancer therapies.

Phase 1. Cloning, expression and purification of human recombinant NNMT enzyme, by using a eukaryotic expression system.







Phase 2. Catalytic assays to identify inhibitors of NNMT enzyme activity + in vitro cell-based assays to explore impact of these molecules on tumor cell phenotype.

Phase 3. X-ray crystallography of crystals related to protein-ligand complexes (purified NNMT in combination with efficient inhibitors), in order to elucidate their high-resolution 3D structures and unveil the inhibitory mechanism-of-action.