PERSONAL INFORMATION

Valentina Sepe

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Sex Female | *Date of birth* 06/03/1978 | *Nationality* Italian

Enterprise	University	EPR
☐ Management Level	☐ Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
☐ Mid-Management Level	☒ Associate Professor	☐ Level III Researcher and Technologist
☐ Employee / worker level	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

Since April 2021

Associate Professor (SSD CHIM06)
Dept. of Pharmacy – University of Naples "Federico II" – Via D. Montesano, 49 – Naples 80131 – Italy

- **Titular of the following courses:**
  - Organic Chemistry (00015) – Module A for Bachelor's Degree in Quality Control (6 CFU)
  - Laboratory of Organic Chemistry (U3057) for Bachelor's Degree in Biotechnologies for Health (7 CFU)
- **R&D Activities:**
  - Development of new drugs able to act as GPBAR1/CysLT1R dual or selective modulators
  - Identification of new steroidal compounds acting as ACE2 activators
  - Identification of natural and synthetic steroidal compounds able to block Spike/ACE2 interaction
  - Development of new potential SARS-CoV-2 internalisation blockers
- **Responsibilities:**
  - Member of the Didactic Commission within the Board of Professors of PhD course in Pharmaceutical Sciences (XXXVI and XXXVII cycles)
  - IRIS referent with super-user functions (http://www.farmacia.unina.it/il-dipartimento/organigramma)
  - Member of the ISSNP (International Summer School on Natural Products) Organizing Committee, from the first edition in July 2015
  - Member of Società Chimica Italiana – Organic Chemistry division since 2002

From December 2010 to March 2021

Researcher (SSD CHIM06)
Dept. of Pharmacy – University of Naples "Federico II" – Via D. Montesano, 49 – Naples 80131 – Italy

- **R&D Activities:**
  - Development and synthesis of small molecules pharmacologically relevant in metabolic and hepatic diseases such as fibrosis, NASH e cyrrhosis
  - Identification of 3,4,5-trisubstituted isoxazoles as FXR agonists patented in July 2017 with the name "ISOSSAZOLI COME AGONISTI DEL RECETTORE FXR" (nr. IT201800007265A1, 17/07/2018), extended on September 18th, 2019 - nr. PCT/IB2019/056114
  - identification of small molecules deriving from bile acids capable of modulating FXR and GPBAR1 receptors in a dual or selective way, patented on May 29th, 2014, with the name "CHOLANE DERIVATIVES FOR USE IN THE TREATMENT AND/OR PREVENTION OF FXR AND TGR5/GPBAR1 MEDIATED DISEASES", nr. FI2014A000130, further extended on May 28th, 2015 - nr. PCT/EP2015/061802
  - HTS of marine organisms and target-oriented discovery aimed to the identification of natural marine products as ligands of nuclear receptors
  - Isolation, biochemical characterization, design of derivatives accompanied by total synthesis of marine origin compounds
  - Isolation of pharmacologically active secondary metabolites from porifers – stereochemical and synthetic studies

EDUCATION AND TRAINING

From November 2001 To December 2004

PhD in Pharmaceutical Sciences – XVII cycle
Dept. of Pharmacy – University of Naples "Federico II" – Via D. Montesano, 49 – Naples 80131 – Italy

- Thesis dissertation with the title "Structural and synthetic studies on sfinxolids, potent cytotoxins of marine origin with antimicrofilament activity" – tutor: Prof. Maria Valeria D'Auria

From October 1996 To October 2001

Master's degree in Pharmaceutical Chemistry and Technology (5 years programme) – 110/110 cum laude
Dept. of Pharmacy – University of Naples "Federico II" – Via D. Montesano, 49 – Naples 80131 – Italy

- Thesis title "Isolation and structural determination of a new opanoid from the Caribbean sponge *Plakortis simplex*" – Supervisor: Prof. Ernesto Fattorusso

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) English (advanced)

Job-related skills Research Project management; Coordination of National Research Groups; Organization of National and International Seminars; National Projects management; Management of experimental research activities for PhD and Degree Thesis/Dissertations.

Digital skills Advanced level skills in Microsoft Office software pack. Programs for data processing (Graph Pad), graphic and image analysis (Adobe Photoshop, Image J), molecular drawing (Chem Draw).

Good level skills in: Molecular docking software (Autodock4.2) and Molecular graphics software (VMD, PyMOL)

Other skills
- Attitude for Teamwork and International Cooperation
- International relations
- Ability to share and disseminate scientific and technical experiences
- Very good communication and didactic skills, public speaking ability, ability to think critically and solve problems

WORK ACTIVITIES

Editorial activity Referee for J. Med. Chem, Steroids, Marine Drugs, Org. Lett., Bioorg. Med. Chem., Scientific Reports, Nature Communication, PLos One, Tetrahedron, J. Org. Chem

Grants

-Project manager of the agreement stipulated between the Department of Pharmacy and the Department of Public Health entitled "Ricerca di metaboliti urinari dei principali inquinanti ambientali" (PG/2020/0051797 of 25/06/2020; end 30/06/2021; 40000 €)

-Project manager of a research group focused on "Combattere la resistenza tumorale: piattaforma integrata multidisciplinare per un approccio tecnologico innovativo alle oncoterapie - Campania Oncoterapie" - POR Campania FESR 2014/2020 (project N. B61G18000470007; 01/012018 – 31/12/2020, 50000 €).

International research projects participations:

1. FP7-KBBE-2009-3-245137 MAREX: Exploring Marine Resources for Bioactive Compounds: From Discovery to Sustainable Production and Industrial Applications 2010-2014 (48 mesi).
2. COST Action: CM1207 named "Computational modelling and binding mode prediction of new small molecules, as selective 5-HT2A receptor". Reference: ECOST-STSM-CM1207-010414-043411. STSM dates: from 01-04-2014 to 16-05-2014. Location: Department of Drug Design and Pharmacology, University of Copenhagen, Copenhagen, Denmark. Host: Pr David Gloriam, Department of Drug Design and Pharmacology, University of Copenhagen from 01-04-2014 to 16-05-2014 (2000 €).

National research projects participations:

1. "PROGEMA - Processi Green per l'estrazione di principi attivi e la depurazione di matrici di scarto e non" (ARS01_00432 area di specializzazione Green Chemistry), presented by University of Napoli "Federico II". The candidate's research activity is related to the "ricollocazione degli estratti ed ottimizzazione farmaceutica" (project N. B26G1800700005 24 months).
2. Progetto di Ateneo 2017-2018: Discovery of new ligands, specifically targeting bile acid receptors, for the treatment of liver and metabolic disorders (BARLIG, DR/2017/409 del 07/02/2017) (24 months).
3. PRIN2017 Bile acids activated receptors and liver metabolism: discovery and development of novel therapeutic targets in the treatment of steato-hepatitis (NASH) (36 months).

ADDITIONAL INFORMATION

Publications Author and co-author of 62 scientific products; 55 peer-reviewed articles, 6 reviews, 1 book chapter. From Scopus: H-index: 25; total citations: 1596; Articles from 2012-2023: 43

She is a Leader of a research group, working on the design and the synthesis of new leads as promising therapeutic strategy in metabolic syndrome. A first research line regards the design and synthesis of steroidal bile acid derivatives as selective and/or dual modulators of bile acid receptors, FXR and GPBAR1. The research has also shifted towards the synthesis of aromatic compounds with the aim of obtaining multi-target derivatives, such as for example dual modulators of GPBAR1 and $CysLT_1R$ receptors, useful in the treatment of colitis and other inflammatory processes.

Selected relevant publications:

1. B. Fiorillo, **V. Sepe**, P. Conflitti, R. Roselli, M. Biagioli, S. Marchianò, P. De Luca, G. Baronissi, P. Rapacciuolo, C. Cassiano, B. Catalanotti, A. Zampella, V. Limongelli, and S. Fiorucci. Structural Basis for Developing Multitarget Compounds Acting on Cysteinyl Leukotriene Receptor 1 and G-Protein-Coupled Bile Acid Receptor 1, *J. Med. Chem.* **2021,** 64 (22), 16512-16529
2. **V. Sepe**, B. Renga, C. Festa, C. D'Amore, D. Masullo, S. Cipriani, F. S. Di Leva, M. C. Monti, E. Novellino, V. Limongelli, A. Zampella, S. Fiorucci. Modification on ursodeoxycholic acid (UDCA) scaffold. Discovery of bile acid derivatives as selective agonists of cell-surface G-protein coupled bile acid receptor 1 (GP-BAR1). *J. Med. Chem.* **2014**, 57, 7687-7701.
3. **V. Sepe**, R. Ummarino, M. V. D'Auria, A. Mencarelli, C. D'Amore, B. Renga, A. Zampella, S. Fiorucci. Total synthesis and pharmacological characterization of solomonsterol A, a potent marine pregnane-X-receptor agonist endowed with anti-inflammatory activity. *J. Med. Chem.* **2011**, 54, 4590-4599

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