Valeria Vergine
Curriculum Vitae

Place Rome
Date 02/02/2023

Part I – General Information

Full Name	Valeria Vergine
Citizenship	Italian
Spoken Languages	Italian, English.

Part II – Education

IIA – Academic Education

Type	Year	Institution	Notes (Degree, Experience,…)
PhD	2022	Sapienza University of Rome	Pharmaceutical Sciences (XXXV cycle)
University graduation	2019	Sapienza University of Rome	Medicinal Chemistry (Laurea Magistrale a ciclo unico – classe LM13 in Chimica e Tecnologia Farmaceutiche (CTF))

II B – Other training course

06-08/06/2021	Federico II University, Napoli.	4th International Summer School on Natural Products, ISSNP. Virtual.
10-12/5/2021	University of Milan.	4th International School of Process Chemistry (ISPROCHEM). Virtual.

Part III – Appointments

IIIA – Research experiences

12/2021	08/2022	McMaster University	Visiting PhD student

Part IV - Society memberberships, Awards and Honors

IVA - Society memberberships

Year	Title
2019-2023	Member of Società Chimica Italiana (SCI)

IVB – Awards

Year	Title
2020	3rd prize for the best poster presentation by the scientific committee of the COST Action 17104 Stratagem WG2 International Online Symposium on “Synthesis and nanodelivery strategies for new therapeutic tools against Multidrug Resistant Tumours”.

Part V - Funding Information [grants as PI-principal investigator or I-investigator]

VA – Funding Information [grants as PI-principal investigator]

Year	Title	Program	Grant value
2021	Design and synthesis of stylbenic derivatives as potential antibiotic-resistance inhibitors mediated by Arnt.	Avvio alla Ricerca	1.000,00€
2021	Natural product chemistry as a promising tool to develop new Smo inhibitors for the treatment of hedgehog-dependent tumors.	Progetti di mobilità congiunta di studenti di dottorato di ricerca	4.200,00 €

VB – Funding Information [grants as I- investigator, participant]

Year	Title	Program	Grant value
	Pharmacological inhibition of	FFC Project (FFC#12/2021).	

2021	colistin resistance in Gram-negative cystic fibrosis pathogens.	Extension of previous FFC project (FFC#15/2019).	84.040,00 €
2020	Identification and synthesis of natural diterpenes with ent-beyeranic structure as adjuvants to colistin in the treatment of bacterial infections MDR.	Avvio alla Ricerca	1.000,00 €

Part VI – Research Activities

Keywords	Brief Description
	Natural Products
Analytical characterization of raw material	The research activity of Dr Valeria Vergine is focused on the study of plant-based matrices, carried out using a multimethodological approach. The development and improvement of appropriate analytical protocols includes the study of pre-analytical treatment (e.g. extraction procedures) according to the matrix examinated. The combined application of advanced analytical untargeted methodologies as Nuclear Magnetic Resonance (NMR) spectroscopy and High Resolution Mass Spectrometry (HRMS), together with targeted techniques like High Performance Liquid Chromathography (HPLC), allowed the identification and characterization of chemical compounds which may have an implication towards human health and well-being. In this scenario, her research interest aims at developing chemical libraries of novel natural products, mostly identified from extracts of medicinal plants. She collaborated in the construction and optimization of a unique *in-house* library of about one thousand of bioactive natural compounds. In particular, she identified, isolated, and elucidated the structure of several natural products by HPLC-MS, NMR, and HRMS, providing at the construction of virtual library based on the chemical structure of the isolated compounds, for *in silico* screening purposes. This *in-house* library offers a unique chance to identify new scaffolds for the development of therapeutically-relevant molecules. Infact, it was successfully screened *in silico* and *in vitro* for the identification of hit and lead compounds in previous early-stage drug discovery projects. In the field of antibiotic resistance fight, Dr. Vergine worked on the isolation, identification and structural elucidation of novel diterpenoids from a chilean higher plant as adjuvants to colistin to treat MDR Gram-negative infections. Moreover, she helped to identify some anthranoids as novel antimicrobial compounds able to inhibit and kill a panel of Gram-positive and Gram-negative bacteria. In a latest work, in the field of targeted therapy against cancer, she contributed through the combination of molecular docking-based virtual screening and the (G4-CPG G-quadruplex on Controlled Pore) Glass experimental screening assay, to identify natural compounds as hit binders of telomeric and oncogenic G4s.
Synthesis and structural elucidation of organic compounds	Dr. Vergine worked on total synthesis of bioactive natural products, such as prenylated carbazoles, anthraquinones and natural diterpenes. In a latest work, she helped to the rational design and syntheses of small natural diterpenes as potential inhibitors of the enzyme responsible for colistin resistance, to treat MDR Gram-negative infections. In this regard, a large variety of diterpene analogues was produced for further SAR studies with the aim of identifying lead compounds against colistin-resistant *Pseudomonas aeruginosa* infections, thus exploiting the versatility of the diterpene scaffold. She elucidated the structure of all the isolated natural products by means of HPLC, LC-MS, NMR and ESI-HRMS. In the field of organometallic reaction, Dr. Vergine focused her research activities on the development of new synthetic methodologies for the construction of bioactive spirolactones taking advantage of gold catalysis.

	<u>Main skills:</u> Design, synthesis, isolation, purification and structural elucidation of natural products by HPLC, LC-MS, ESI-HRMS, NMR.

Part VII – Participation to conferences, workshops and scientific meetings

Dates	**Institution/place**	**Description**
13-17/06/2022	Calgary, Canada	105th Canadian Society for Chemistry (CSC) at Canadian Chemistry Conference and Exhibition.
23/04/2021	Virtual Conference	BIOHYDROGELS _ From basic science to applications of hydrogels in drug delivery and regenerative medicine.
15/12/2020	Virtual Edition	COST Action 17104 Stratagem WG2 International Online Symposium on "Synthesis and nanodelivery strategies for new therapeutic tools against Multidrug Resistant Tumours".
28/02/2020	Webinar	FlashPure e PrepPure: consumabili alla portata di tutti
22/09/2020	Meeting online	"La Canapa Industriale: Sviluppo e Valorizzazione di una Nuova Filiera Agroalimentare Ecosostenibile".
5/02/20	Sapienza University of Rome	"Scienza e Fede".
6/05/2019	Sapienza University of Rome	NEW HORIZONS IN CANNABIS RESEARCH: "MEDICAL AND FOOD APPLICATIONS".
21-22/06/2018	Sapienza University of Rome	VI workshop "Applicazioni della risonanza magnetica nucleare nella scienza degli alimenti".

Part VIII - Oral Communications

15/12/2020	Virtual	COST Action 17104 (STRATAGEM) WG2 Meeting and International Online Symposium on "Synthesis and nanodelivery strategies for new therapeutic tools against Multidrug Resistant Tumours".

Part IX – Scientific Qualification

12/2019	Qualified Pharmacist at Sapienza - University of Rome

Part X – Summary of Scientific Achievements

Product type	**Number**	**Data Base**	**Start**	**End**
Papers [international]	6	SCOPUS	2020	2023

Papers [national]				
Books [scientific]				
Books [teaching]				
Posters	3		2020	2022
Conference oral communications	1		2020	2020

Total Impact factor	30.3
Total Citations	29
Average Citations per Product	4.83
Hirsch (H) index	3
Normalized H index*	1

*H index divided by the academic seniority.

Part XI– Selected Publications

List of the publications selected for the evaluation. For each publication report title, authors, reference data, journal IF (if applicable), citations, press/media release (if any).

1	**2023**	Articolo in rivista Iazzetti A., Allevi D., Calcaterra A., Fabrizi G., Goggiamani A., Mazzoccanti G., Sferrazza A., Verdiglione R. and **Vergine V.** Highly Efficient and Mild Gold (I) Catalyzed Synthesis of 3,8-Diarylidene-2,7-dioxaspiro[4.4]nonane-1,6-diones. **MOLECULES** 2023, 28, 300. DOI: 10.3390/molecules28010300 Impact factor (2021) =4.927; Q2 Analytical Chemistry; Citazioni (Scopus): 0 Filename (pdf): Iazzetti et al., Molecules 2023.
2	**2022**	Review Tortora C., Pisano L., **Vergine V.,** Ghirga F., Iazzetti A., Calcaterra A., Marković V., Botta B. and Quaglio D. Biosynthesis, and Biological Activity of Diels–Alder Adducts from Morus Genus: An Update. **MOLECULES** 2022, 27, 7580.

		DOI: 10.3390/molecules27217580 Impact factor (2021) =4.927; Q2 Analytical Chemistry; Citazioni (Scopus): 0 Filename (pdf): Tortora et al., Molecules 2022.
3	**2022**	Articolo in rivista Casciaro B., Ghirga F., Cappiello F., **Vergine V.,** Loffredo M.R., Cammarone S., Puglisi E., Tortora C., Quaglio D., Mori M., Botta, B. and Mangoni M.L. The Triprenylated Anthranoid Ferruginin A, a Promising Scaffold for the Development of Novel Antibiotics against Gram-Positive Bacteria. **ANTIBIOTICS**, 2022, 11, 84. DOI: 10.3390/antibiotics11010084 Impact factor (2021)= 5.222; Q1 Pharmacology, Toxicology and Pharmaceutics (miscellaneous); Citazioni (Scopus): 0 Filename (pdf): Casciaro et al., Antibiotics 2022.
4	**2021**	Articolo in rivista Platella C., Ghirga F., Zizza P., Pompili L., Marzano S., Pagano B., Quaglio D., **Vergine V.,** Cammarone S., Botta B., Biroccio A., Mori M. and Montesarchio D. Identification of Effective Anticancer G-Quadruplex-Targeting Chemotypes through the Exploration of a High Diversity Library of Natural Compounds. **PHARMACEUTICS**, 2021, 13, 1611. DOI: 10.3390/pharmaceutics13101611 Impact factor (2021)= 6.525; Q1 Pharmaceutical Science; Citazioni (Scopus): 7 Filename (pdf): Platella et al., Pharmaceutics 2021.
5	**2020**	Articolo in rivista Quaglio D., Mangoni M. L., Stefanelli R., Corradi S., Casciaro B., **Vergine V.,** Lucantoni F., Cavinato L., Cammarone S., Loffredo M. R., Cappiello F., Calcaterra A., Erazo S., Ghirga F., Mori M., Imperi F., Ascenzioni F. and Botta B. *ent*-Beyerane Diterpenes as a Key Platform for the Development of ArnT-Mediated Colistin Resistance Inhibitors. **JOURNAL OF ORGANIC CHEMISTRY**, 2020, 85 (16), 10891-10901. DOI: 10.1021/acs.joc.0c01459. Impact factor (2020)= 4.354; Q1 Organic Chemistry; Citazioni (Scopus): 12 Filename (pdf): Quaglio et al., The Journal of Organic Chemistry 2020.
6	**2020**	Articolo in rivista Quaglio D., Corradi S., Erazo S., **Vergine V.,** Berardozzi S., Sciubba F., Cappiello F., Crestoni M.E., Ascenzioni F., Imperi F., Delle Monache F., Mori M., Loffredo M.R., Ghirga F., Casciaro B., Botta B. and Mangoni M.L. Structural elucidation and antimicrobial characterization of novel diterpenoids from Fabiana Densa var. ramulosa. **ACS MEDICINAL CHEMISTRY LETTERS,** 11(5), 760-765. DOI: 10.1021/acsmedchemlett.9b00605 Impact factor (2020)= 4.345; Q1 Organic Chemistry; Citazioni (Scopus): 10 Filename (pdf): Quaglio et al., ACS Medicinal Chemistry Letters 2020.

Roma, 02/02/2023
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