LUCA PISANO
Curriculum Vitae

Place Rome
Date 10/08/2024

Part I – General Information

Full Name	LUCA PISANO
Date of Birth	
Place of Birth	
CitizenshipN	
Permanent Address	
Mobile Phone Numbe	
E-mail	
Spoken Languages	ITALIAN, ENGLISH

Part II – Education

IIA – Academic Education

Type	Year	Institution	Notes (Degree, Experience, …)
PhD	2024	Sapienza - University of Rome, Italian Institute of Technology.	Molecular design and characterization for the promotion of health and well-being: from drug to food (XXXVII cycle)
Master's degree	2020	Sapienza - University of Rome.	Chemistry and technologies of the drug

IIB – Other training course

13/08/2024	WIPO Academy	Introduction to the Patent Cooperation Treaty

Part III – Appointments

Research Experiences

Start	End	Institution	Position
01/10/2023	26/03/2024	McGill University	Synthesis and studies of 4' modified oligonucleotides

01/04/2020	31/10/2020	Sapienza Università di Roma	Study of advanced green extractive methodologies from waste matrixes
01/01/2019	31/07/2019	King's College London	Design of novel antitubercular agents targeting the MmpL3 mycolic acid transporter

Part IV - Society memberships

Year	Title
2020-2022	Member of the Italian Chemical Society (SCI), Division of Organic Chemistry.

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
2023	**PI** in the project: "Sviluppo di bioconiugati ferritina-poliammina per la veicolazione di oligonucleotidi".	Sapienza – University Research Project 2023	1.000,00 €
2022	**PI** in the project: "Progettazione e sintesi di molecole a struttura chinolinica fotoresponsive e selettive per residui cisteinici".	Sapienza – University Research Project 2022	1.000,00 €

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

Year	Title	Program	Grant value
2023	**I** in the project "Exploring Natural Products through cutting-edge approaches for identifying potential inhibitors of Ara4N-dependent colistin resistance".	Sapienza - University Research Project 2023	12.000,00 €

Part VI – Research Activities

Keywords	Brief Description
Antitubercolar drugs	*Structural Rigidification of N-Aryl-pyrroles into Indoles Active against Intracellular and Drug-Resistant Mycobacteria.* During the 6 months spent in King's College London, Dr. Luca Pisano focused his research interest on developing a synthetic strategy for the synthesis of a library of N-alkylaminoindoles as the result of the rigidification of N-aryl-pyrroles. The latter has been investigated by Dr. Castagnolo's research group extensively in the previous years and computer docking analysis revealed that a more compact structure, such as the indole one, could fit better with the supposed target *MmpL3*, a mycolic acid transporter essential in the building of the cell wall in *Mycobacterium Turberculosis*. The isolation and the structural elucidation of every synthetic intermediate were carried out by using 1D and 2D Nuclear Magnetic Resonance Spectroscopy (NMR) and High-Resolution Mass Spectrometry (HR-MS) techniques. **Main skills: NMR, HR-MS.**

Advanced green extraction methods	*Study of advanced green extractive methodologies from waste matrixes*. In the last years the development of sustainable techniques that can replace the traditional use of organic solvents is more and more studied by the scientific community every year. With the aim of identifying new methods for the extraction of natural compounds from waste matrixes using just green and sustainable processes, the project consisted in the application of a variety of extractive techniques to waste industrial products coming from the fruit and vegetable industry. Accordingly, Dr Pisano designed and performed different extraction methodologies (MAE, UAE) and evaluated a variety of not-organic solvents (DES) to generate a comparison in the extraction efficiency between the traditional organic solvents and the investigated ones. **Main skills: NMR, MAE, UAE.**
Oligonucleotides delivery	*Design and Synthesis of Piperazine-Based Compounds Conjugated to Humanized Ferritin as Delivery System of siRNA in Cancer Cells.* Following previous studies conducted in Professor Botta's laboratory to develop an efficient delivery system for oligonucleotides, the internal cavity of an "humanized" archaeobacterial ferritin (HumAfFt) was efficiently functionalized with piperazine-based compounds (PAs), designed and synthesized by Dr. Luca Pisano, that are positively charged at physiological pH, through chemo-selective reactions towards the thiol residues of cysteines present in the cavity. The aim of this project is to develop a new library of polyamine compounds that are positively charged at physiological pH, in order to obtain a cluster of data on the structure-interaction relationships of these compounds with the oligonucleotide cargo, thus improving their loading and delivery. **Main skills: NMR, UHPLC-UV, UHPLC-MS**
Caged oligonucleotides	*Design and synthesis of quinoline-based photo-responsive system for the delivery of caged oligonucleotides.* Caged molecules are inert molecules that possess latent biological activity and can restore it upon irradiation with light of a specific wavelength. This occurs because these systems consist of a biologically active molecule or biomolecule (e.g., any effector) and a photosensitive protecting group (PPG). In an attempt to design a delivery system composed of caged molecules with quinoline structures selective for cysteine sites, The polyamine moiety placed in position 8 of the quinoline scaffold was intended to promote the encapsulation and release of negatively charged siRNA (polynucleotides of 21-23 units) through electrostatic interactions as demonstrated by previous studies conducted in the laboratory of Prof. Botta. The project, therefore, aims to develop a synthetic strategy for the preparation of a quinoline-based caged system, functionalized with a linker capable of selectively binding the thiol residues of a protein-based delivery agent (e.g., HumAfFt). The system will be characterized by a quinoline core doubly functionalized: at position 2 with a phosphoramidite function needed to couple the system with the 5' end of the antisense strand of a siRNA (the bound biological effector), and at position 8 with a piperazine linker attached to a pentafluorobenzenesulfonamide group to ensure selectivity in binding to cysteines. **Main skills: NMR, UHPLC-UV, UHPLC-MS**

Part VII – Participation to conferences, workshops, and scientific meetings

Dates	Institution/place	Description
24-28/06/2024	Sapienza – University of Rome, Rome, Italy.	Second Symposium for Young Chemists (SYNC 2024)

27-28/02/2023	University of Naples Federico II, Naples, Italy	Chimici per le Biotecnologie
21-22/06/2022	Sapienza - University of Rome, Rome, Italy.	European Workshop in Drug Synthesis
14-16/06/2022	Universitat Ramon Llull, Barcellona, Spain	Paul Enrich Med Chem 2022

Part VIII – Oral communications

24-28/06/2024	Sapienza – University of Rome, Rome, Italy.	Second Symposium for Young Chemists (SYNC 2024)
27-28/02/2023	University of Naples Federico II, Naples, Italy	Chimici per le Biotecnologie
14-16/06/2022	Universitat Ramon Llull, Barcellona, Spain	Paul Enrich Med Chem 2022

Part IX – Poster Presentation

21-22/06/2022	Sapienza - University of Rome, Rome, Italy.	European Workshop in Drug Synthesis

Part X – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	4	SCOPUS	2020	2024
Posters	1		2020	2024
Conference oral communications	3		2020	2024

Total Impact factor	3.6
Total Citations	13
Average Citations per Product	3.25
Hirsch (H) index	2
Normalized H index*	0.5

*H index divided by the academic seniority.

Part XI–Publications

For each publication, authors, title, reference data, journal IF (InCites JCR) and number of citations (Scopus) are reported. IF is relative to the year of publication or, if not available, to the year closest to the year of publication.

1	**2024**	Articolo in rivista F Liberati, S Di Russo, L Barolo, L Pisano et al **Combined Delivery of miR-15/16 through Humanized Ferritin Nanocages for the Treatment of Chronic Lymphocytic Leukemia.** **Pharmaceutics, 2024.** doi: 10.3390/pharmaceutics16030402 IF (2023) = 4.3, Citation (Scopus): 0
2	**2023**	Articolo in rivista D Quaglio; P Infante; S Cammarone; L Lamelza; M Conenna; F Ghirga; L. Pisano et al. **Exploring the Potential of Anthraquinone-Based Hybrids for Identifying a Novel Generation of Antagonists for the Smoothened Receptor in HH-Dependent Tumour,** **Chemistry–A European Journal, 2023**. doi: 10.1002/chem.202302237 IF (2023) = 3.9; Citation (Scopus): 0
3	**2022**	C Tortora, V Vergine, F Ghirga, A Iazzetti, A Calcaterra, L Pisano et al. **Synthesis, Biosynthesis, and Biological Activity of Diels-Alder Adducts from Morus Genus: An Update.** **Molecules, 2022.** doi: 10.3390/molecules27217580 IF (2022) = 1.6; Citation (Scopus): 5
4	**2021**	Articolo in rivista D Semenya, M Touitou, CM Ribeiro, FR Pavan, L Pisano et al. **Structural Rigidification of N-Aryl-pyrroles into Indoles Active against Intracellular and Drug-Resistant Mycobacteria.** **ACS Medicinal Chemistry Letters, 2021.** doi: 10.1021/acsmedchemlett.1c00431 IF (2021) = 4.6; Citation (Scopus): 3

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