



ALLA MAGNIFICA RETTRICE

DELL'UNIVERSITA' DEGLI STUDI DI MILANO

COD. ID: A019

Il sottoscritto chiede di essere ammesso a partecipare alla selezione pubblica, per titoli ed esami, per il conferimento di un assegno di ricerca presso il Dipartimento di Scienze Farmaceutiche

Responsabile scientifico: Sara Pellegrino

Kaliroi Pegini

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	PEQINI
Name	KALIROI
Date of Birth	23/06/1994

PRESENT OCCUPATION

Appointment	Structure
Postdoctoral Researcher	Università degli Studenti di Milano Dipartimento di Scienze Farmaceutiche
Principal subjects	Peptide Synthesis Secondary Structure characterization Solid Phase synthesis Biophysical techniques for protein - ligand interaction Nanoparticle synthesis
Supervisor	Prof. Sara Pellegrino

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
PhD	Double Doctorate - Marie Curie Fellowship	University of Milan & University of Paris Sud	2023
Master (300 ECTS)	Materials Science and Engineering	University of Ioannina	2019



PAST EXPERIENCE

<p>01/05/2024 - NOW</p> <p>Supervisor 01/04/2023 - 30/04/2024</p> <p>Research Project</p> <p>Supervisor</p>	<p>Postdoctoral Researcher (Assegno di tipo B)</p> <p>Università degli Studi di Milano, Pharmaceutical Sciences</p> <p>'BIOMHEME - A biomimetic approach to remove free hemoglobin from plasma inspired by bacterial iron capturing systems'</p> <p>Peptide Synthesis</p> <p>Secondary Structure characterization</p> <p>Solid Phase synthesis</p> <p>Biophysical techniques for protein - ligand interaction</p> <p>Nanoparticle synthesis</p> <p>Prof. Sara Pellegrino</p> <p>Postdoctoral Researcher (Assegno di tipo B)</p> <p>Università degli Studi di Milano, Pharmaceutical Sciences</p> <p>'IRON homeostasis in Neuroferritinopathy: unravelling the molecular details of abnormal ferritin functionality (IRONYc)'.</p> <p>Peptide Synthesis</p> <p>Secondary Structure characterization</p> <p>Solid Phase synthesis</p> <p>Multi-gram scale synthesis</p> <p>Prof. Maria Luisa Gelmi</p>
<p>01/03/2020 - 11/07/2023</p> <p>Thesis Title</p> <p>Principal subjects</p> <p>Supervisor</p>	<p>PhD in Pharmaceutical Sciences (XXXV Cycle)</p> <p>PhD Defense: 11/07/2023</p> <p>Università degli Studi di Milano, Pharmaceutical Sciences Department</p> <p>Part of the European Project TubInTrain</p> <p>https://www.tubintrain.eu/</p> <p>Development of molecular probes acting on Tau/Tubulin and alpha-Synuclein/Tubulin interface</p> <p>Peptide Synthesis</p> <p>Solid Phase synthesis</p> <p>Multi-gram scale synthesis</p> <p>Secondary structure determination of peptides</p> <p>Protein protein interaction</p> <p><i>In vitro</i> assays</p> <p>Protein purification</p> <p>Prof. Sara Pellegrino</p>



01/09/2021 - 11/04/2022	PhD Secondment Université-Paris-Saclay, Faculty of Pharmacy Synthesis of peptidomimetics Unnatural amino acid synthesis Prof. Sandrine Onger
01/12/2018 - 30/06/2019	Internship in the terms of Erasmus+ Programme Peptide Synthesis Solid Phase synthesis Secondary structure determination of peptides Basic use of a molecular modeling technique Prof. Alessandro Contini

FOREIGN LANGUAGES

Languages	level of knowledge
Greek	Mother tongue
Albanian	Mother tongue
English	C1
Italian	C1

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
09/2023	Best oral presentation during the DisFarm Insights entitled as 'A peptidomimetic approach towards AGel amyloidosis inhibition'
2020-2023	PhD Joint Doctorate : 1)Università degli Studenti di Milano Dipartimento di Scienze Farmaceutiche 2) Université-Paris-Saclay, Faculty of Pharmacy Supervisor: Prof. Sara Pellegrino Co-supervisor: Prof. Sandrine Onger
2018-2019	Internship in the terms of Erasmus+ Programme, under the supervision of Prof. A. Contini.

PROJECT INVOLVEMENT

Year	Position	Project Description
2023	Team Member	NanoRemedi - Funding of European Union's research and innovation programme under the Marie Skłodowska-Curie grant agreement No 101072645
2022	Team Member	"IRON homeostasis in Neuroferritinopathy: unravelling the molecular details of abnormal ferritin functionality (IRONYc)" - Cariplo Foundation Funding
2022	Team Member	BIOMHEME - A biomimetic approach to remove free hemoglobin from plasma inspired by bacterial iron capturing systems" - MUR PRIN 2022



PUBLICATIONS

Year	Article
2024	Accepted Article: "Gold nanoparticles decorated with HPLC6 derived peptides as a platform for ice recrystallization inhibition" , Elisa Impresari, Kaliroi Peqini, Tim P. Hogervorst, Andrea Faustini, Francesca Bodega, Cristina Porta, Matteo Maria Pecchiari, Giuliano Zanchetta, Ilja K. Voets, Stefano Pieraccini, Sara Pellegrino, <i>Biomacromolecules</i>
2024	"Mucosa-penetrating liposomes for esophageal local drug delivery" Silvia Franzé, Francesco Rama, Edoardo Scarpa, Martina Bruna Violatto, Kaliroi Peqini, Chiara Grazia Milena Gennari, Giulia Anderluzzi, Rebecca Camastra, Anita Salmaso, Giulia Moscatiello, Sara Pellegrino, Loris Rizzello, Paolo Bigini, Francesco Cilurzo, <i>Int. J. Pharm</i> , 2024, 661,124413, https://doi.org/10.1016/j.ijpharm.2024.124413 .
2023	"Breaking down and building up alpha-synuclein: An insight on its N-terminal domain." Kaliroi Peqini, Simone Attanasio, Lucia Feni, Graziella Cappelletti, Sara Pellegrino, <i>J Pept Sci.</i> ,2023, 30(4), doi: 10.1002/psc.3556.
2022	" Multi-eGO: an in-silico lens to look into protein aggregation kinetics at atomic resolution" ,Emanuele Scalone, Luca Broggin, Cristina Visentin, Davide Erba, Fran Bačić Toplek, Kaliroi Peqini, Sara Pellegrino, Stefano Ricagno, Paissoni, Carlo Camilloni, <i>PNAS</i> , 2022, 119 (26), https://doi.org/10.1073/pnas.2203181119
2022	" L- to D-Amino Acid Substitution in the Immunodominant LCMV-Derived Epitope gp33 Highlights the Sensitivity of the TCR Recognition Mechanism for the MHC/Peptide Structure and Dynamics" , Federico Ballabio, Luca Broggin, Cristina Paissoni, Xiao Han, Kaliroi Peqini, Benedetta Maria Sala, Renhua Sun, Tatyana Sandalova, Alberto Barbiroli, Adnane Achour, Sara Pellegrino, Stefano Ricagno ,Carlo Camilloni, <i>ACS Omega</i> 2022, 7, 11, 9622-9635, https://doi.org/10.1021/acsomega.1c06964
2022	" Rational Design of a Peptidomimetic Inhibitor of Gelsolin Amyloid Aggregation" , Michela Bollati, Kaliroi Peqini, Luigi Barone, Carmina Natale, Marten Beeg, Marco Gobbi, Luisa Diomede ,Michelangelo Trucchi, Matteo de Rosa and Sara Pellegrino, <i>Int. J. Mol. Sci.</i> , 2022, 23, 13973. https://doi.org/10.3390/ijms232213973
2021	"α-Synuclein: An All-Inclusive Trip Around its Structure, Influencing Factors and Applied Techniques" , Nicolò Bisi, Lucia Feni, Kaliroi Peqini, Helena Pérez-Peña, Sandrine Onger, Stefano Pieraccini and Sara Pellegrino, <i>Frontiers in Chemistry</i> ,2021, 9, 666585 doi: 10.3389/fchem.2021.666585
2020	Tuning antiviral CD8 T-cell response via proline-altered peptide ligand vaccination" , Adil Doganay Duru ,Renhua Sun ,Eva B. Allerbring ,Jesseka Chadderton, Nadir Kadri, Xiao Han, Kaliroi Peqini, Hannes Uchtenhagen, Chaithanya Madhurantakam, Sara Pellegrino, Tatyana Sandalova, Per-Åke Nygren, Stephen J. Turner, Adnane Achour, <i>PLOS Pathogens</i> ,2020, 16(5) https://doi.org/10.1371/journal.ppat.1008244

ORAL COMMUNICATIONS

Date	Title	Place
11/2024	Peptidomimetics Inhibiting Amyloid Aggregation: The Agel Case	18 th Naples Workshop on Bioactive peptides, Napoli, Italy
02/2024	A chemical approach towards the inhibition of	Rare Disease Day, IBF-CNR, Milan, Italy



	the aggregation of amyloid proteins: the AGel case	
09/2023	A peptidomimetic approach towards AGel amyloidosis inhibition	Disfarm Insights, Milan, Italy
06/2023	The cycloaddition of sulfonilazides with enamines: an evergreen click reaction on the route of flexible β amyloid mimic	XIX CIRP 2023, Reggio Calabria, Italy
11/2021	Development of molecular probes acting on α -Synuclein/Tubulin interface	Journèe BioCis, Université Paris Saclay, Paris, France

POSTER COMMUNICATIONS

Date	Title	Place
11/2024	Designing self-assembling bioactive lipopeptides	18 th Naples Workshop on Bioactive peptides, Napoli, Italy
08/2024	Designing self-assembling lipopeptide for tissue regeneration	EPS, Florence, Italy
02/2023	Breaking down and building up α -Synuclein: an insight on its binding to tubulin	EPSC, Leeds, England
04/2022	α -Synuclein and Tubulin: An obscure interplay	Synuclein Meeting, Leuven, Belgium

TRAINING SCHOOLS AND WORKSHOPS

Date	Title	Place
11/2024	From the production on nanoparticles to their characterization utilizing separation techniques	Alfatest Company, Cernusco, Milan, Italy
10/2024	Proteome Discoverer Workshop DIA vs DDA in proteomics: the researchers' point of view	Milan, Italy
06/2024	'2nd Advanced school on biophysical methods for protein-protein and protein-ligand interaction analysis'	Milan- Novara, Italy
02/2022	TubInTrain Workshop 5 - Computational Chemistry	Strasbourg, France
10/2021	TubInTrain - Workshop 3- Protein aggregation in neuronal diseases	ONLINE
03/2021	TubInTrain - Training School on Live Cell Imaging	ONLINE
12/2020	Storytelling and Stagecraft for Researchers	ONLINE
09/2020	TubInTrain - Write About Science (WAS) workshop	ONLINE
07/2020	Online Summer School: "International	ONLINE



	Summer School on Natural Products 2020 Marine Drugs	
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CONGRESSES AND SEMINARS

Date	Title	Place
11/2024	18 th Naples Workshop on Bioactive peptides	Napoli, Italy
06/2024	IOPC 2024	Milan, Italy
04/2024	EPSC 204	Prague, Czech Republic
06/2023	IOPC 2023	Milan, Italy
10/2023	"Tuning Tubulin Dynamics and Interactions to Face Neurotoxicity: a Multidisciplinary Approach for Training and Research"	San Sèrvo, Venice, Italy
06/2023	XIX CIRP 2023	Reggio Calabria, Italy
02/2023	EPSC 2023	Leeds, England
06/2022	IOPC 2022	Milan, Italy
04/2022	Synuclein Meeting	Leuven, Belgium
04/2021	MID-TERM Meeting with project officer	ONLINE
03-06/2020	Virtual EMBO - EMBL Symposium - Microtubules: From atoms to complex systems	ONLINE

TEACHING ACTIVITY IN THE UNIVERSITY

December 2024	Lecture in the course of 'Organic Ingredients' for the master course 'Cosmetic Industrial Sciences' entitled as "Peptides in Cosmetics" - teaching prof. Laura Castoldi
November 2022	Teaching assistant of Organic Chemistry I, under the supervision of Prof. Pirovano
November 2020	Teaching assistant of Organic Chemistry I, under the supervision of Dr. Erba

CO-TUTOR PhDs, MASTER'S AND BACHELOR'S DEGREES

<p>'Preparation and characterization of peptide decorated nanomaterials'</p> <ul style="list-style-type: none"> - PhD course: Pharmaceutical sciences - Supervisor: Prof. Sara Pellegrino - PhD Candidate: Dhriti Shenoy - Academic Cycle: XXXVIII <p>'Development of gold nanoparticles conjugated with peptides derived from HPLC6 as potential tools for cryopreservation of tissues and organs'</p> <ul style="list-style-type: none"> - C.d.L.: Chimica e Tecnologia Farmaceutiche - Tutor: Prof. Sara Pellegrino - Candidate: Andrea Faustini - A.A.:2023/2024 <p>'A biomimetic approach to remove free hemoglobin from plasma'</p> <ul style="list-style-type: none"> - C.d.L.: Biotecnologie del Farmaco - Tutor: Prof. Sara Pellegrino - Candidate: Gambattista Pugliese - A.A.:2023/2024 <p>'Structure-activity relationship of a peptidomimetic inhibitor of gelsolin aggregation in familial amyloidosis finnish type (FAF)'</p>
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- C.d.L.: Biotecnologie del Farmaco
- Tutor: Prof. Sara Pellegrino
- Candidate: Claudia Ricci
- A.A.:2023/2024

‘Synthetic approaches towards super paramagnetic oxide nanoparticles decorated with bioactive peptides’

- C.d.L.: Chimica e Tecnologia Farmaceutiche
- Tutor: Prof. Sara Pellegrino
- Candidate: Giacomo Giovenzana
- A.A.:2023/2024

‘Identification and characterization of new amyloidogenic sequences from gelsolin protein.’

- C.d.L.: Laurea Magistrale in Farmacia
- Tutor: Prof. Sara Pellegrino
- Candidate: Sabà Raza
- A.A.:2023/2024

‘Investigation of the mechanism of action of peptidomimetics as inhibitors of gelsolin aggregation involved in familiar amyloidosis’

- C.d.L.: Laurea Magistrale in Farmacia
- Tutor: Prof. Sara Pellegrino
- Candidate: Martina Costa
- A.A.: 2023/2024

Sintesi peptidica in fase solida di domini dell’ α -sinucleina e caratterizzazione della loro struttura secondaria’

- C.d.L.: Corso di Laurea in Biotecnologie
- Tutor: Prof. Dr. Sara Pellegrino
- Candidate: Laila Baccaro
- A.A.: 2022/2023

‘Sintesi di peptidi derivati dalla proteina antifreeze HPLC6 e loro utilizzo nella funzionalizzazione di nanoparticelle d’oro’

- C.d.L.: Corso di Laurea in Biotecnologie
- Tutor: Prof. Dr. Sara Pellegrino
- Candidate: Matteo Adrigò
- A.A.: 2022/2023

‘Sintesi di una libreria di peptide, quali promotori dell’assorbimento attraverso mucose’

- C.d.L.: Corso di Laurea in Biotecnologie
- Tutor: Prof. Dr. Sara Pellegrino
- Candidate: Nicolò Pizzochero
- A.A.: 2021/2022

‘Sintesi chimica di una libreria di peptide derivati da α -sinucleina per studi di affinità con tubulina’

- C.d.L.: Corso di Laurea in Biotecnologie
- Tutor: Prof. Dr. Sara Pellegrino
- Candidate: Davide Pellicani
- A.A.: 2021/2022

‘Synthesis of KRT18 domains and analysis of their interaction with pneumococcal serine-rich repeat protein (PsrP)’

- C.d.L.: Chimica e Tecnologia Farmaceutiche
- Tutor: Prof. Dr. Sara Pellegrino
- Candidate: Benedetta Zeloni
- A.A.: 2020/2021

‘Development of peptidomimetics inhibiting the amyloidosis mediated by Gelsolin’

- C.d.L.: Biotecnologie del Farmaco
- Tutor: Prof. Dr. Sara Pellegrino
- Candidate: Luigi Barone
- A.A.: 2020/2021

‘Ultra-short non aromatic peptides’

- C.d.L.: Biotecnologie del Farmaco
- Tutor: Prof. Dr. Sara Pellegrino



- Candidate: Gabriella Zanforlin
- A.A.: 2020/2021

‘Solid-Phase peptide synthesis of alpha-Synuclein’s protein domains’

- C.d.L.: Corso di Laurea in Biotecnologie
- Tutor: Prof. Dr. Sara Pellegrino
- Candidate: Araya Montemurro
- A.A.: 2019/2020

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