europass Curriculum vitae

PERSONAL INFORMATION

Alexia Mattellone

Via Ungaresca 29/2, 33070 Brugnera (PN) (Italy)

(+39) 3497219757

alexia.mattellone@studio.unibo.it

Sex Female | Date of birth 10/08/1995 | Nationality Italian

JOB APPLIED FOR

PhD student

WORK EXPERIENCE

16/03/2020–Present

Industrial fellow

Alessandra Tolomelli
Via Francesco Selmi 2, 40126 Bologna (Italy)

I work on the synthesis of peptides for pharmaceutical use by environmentally friendly techniques. Also, I take part of the writting articles.

Annexe 1 for the declaration.

Business or sector Organic, medicinal and green chemistry

04/03/2019–31/05/2019

Trainee

Michael Decker
Am Hubland, Wurzburg (Germany)

I won the scholarship "Erasmus+".

- Evaluation of neurotoxicity, chelating and antioxidant properties of 19 compounds synthetized by Diego Munoz-Torrero's group.
- During this period, I learnt to work alone and independently.

Annexe 2 for the declaration.

Business or sector Organic and mecinal chemistry, biology

06/2014–06/2014

Trainee

Eriberta Ros
Borgo Lacchin 1/A, Sacile (Italy)

- Veterinarian's assistant.
- Veterinarian's assistant during surgical operation.

In that period, I used to collaborate with other people as client as co-workers for helping pets.

Business or sector Veterinary clinic

07/2013–07/2013

Worker

Province of Pordenone, Sacile (Italy)

- renovation of public buildings, such as school.

EDUCATION AND TRAINING

01/10/2017–12/12/2019

Doctor in Chemistry

EQF level 7

Department of Chemistry "Giacomo Ciamician", Bologna (Italy)

Thesis's title: Development of MTDLs "Multi-target direct ligands" for the treatment of Alzheimer's disease | **Rapporteur:** Professor Alessandra Tolomelli. **Co-supervisor:** Professor Maria Laura Bolognesi
The thesis period last for **9 months:** 3 months in Germany and 6 months at the Bolognesi's laboratory. Professor Tolomelli used to follow my work. I learnt how to establish a collaborative working, to share experiences and support with my collegues.

Final vote: 110/110 *cum laude*
Date: 12/12/2019

Summary

Alzheimer's disease is multifactorial pathology and therefore polypharmacology represents the only valid approach for a potential cure. The multi-target-directed ligands (MTDLs) strategy is the most promising way; for this reason my thesis focuses on the development of MTDLs. The first project is based on the synthesis of a Donepezil-like compound in which the N-benzyl piperidine fragment is maintained. While indanone is replaced with menadione to give it antioxidant and anti-aggregating properties towards β-amyloid fibrils, maintaining inhibitory activity towards acetylcholinesterase (AChE). The synthesis of the compound has been optimized to improve the yield and purity, despite this we have obtained a small quantity. In the future, the molecule will be tested to evaluate its activity on the targets outlined above, hoping to observe the designed multi-target effect.
The second thesis project allowed the analysis of neurotoxicity *in vitro*, the study of the chelating and antioxidant properties of 19 compounds synthesized by the research group of Professor Munoz-Torrero. These compounds derive from two generations of uprine-rein heterodimeric hybrids: the uprine fragment is maintained as it has a good inhibitory activity against AChE and β-secretase (BACE-1); while the reine is replaced with different molecules from dimer to dimer to study the interaction with the secondary pocket of BACE-1. KPM155 has shown good activity in all experiments as it has: an excellent ability to chelate copper, is not neurotoxic and has a micromolar activity towards scavenging radicals. In the future, the 19 compounds will be tested to study their chelating properties towards zinc and iron, but above all their inhibitory activity against BACE-1.

01/10/2014–22/09/2017

Doctor in Chemistry

EQF level 6

Department of chemical and pharmaceutical sciences, Trieste (Italy)

Thesis's title: Synthesis of heterochiral tripeptides for self-assembly in hydrogel | **Rapporteur:** Professor Marchesan Silvia. I worked for 3 months and I learnt new synthetic strategy of peptide synthesis: Solid phase synthesis. It was the first time that I took an active part in a project.

Final vote: 101/110
Date: 22/09/2017

Summary

The supramolecular hydrogels, composed by small peptides, have become more and more of scientific interest in recent years, especially for applications such as biocompatible and biodegradable biomaterials. These hydrogels are made up of non-covalent matrices in which the peptides self-assembly into ordered structures thanks to weak bonds. Among the various supramolecular systems of this class, heterochiral tripeptides, i.e. composed of three amino acids both D- and L-, have shown different self-organization capacity compared to homochiral analogues, although the exact role of amino acid chirality is still unclear in the various positions of the sequence. In particular, most of the examples described in the literature have D-L-L stereoconfiguration while only two have been reported for L-D-L stereoconfiguration.
In this thesis the solid phase synthesis of three hydrophobic heterochiral tripeptides with L-D-L stereoconfiguration was carried out: Ala-^{D}Phe-Phe, Leu-^{D}Phe-Phe, and Ile-^{D}Phe-Phe. The tripeptides were purified with reverse phase HPLC and characterized with mass spectroscopy and nuclear magnetic resonance. Their gelling ability was then tested in physiological pH phosphate buffer for potential use as biomaterials and revealed that only the last two, of greater hydrophobic character and steric bulk, are capable of forming hydrogels. Finally, crystallization studies have been carried out that have allowed to solve the structure of the Ala-^{D}Phe-Phe tripeptide by X-ray diffraction. To date, there are no resolved crystal structures in the literature of heterochiral tripeptides of this type, therefore

these data are very useful towards understanding these supramolecular systems.

PERSONAL SKILLS

Mother tongue(s): Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
	University language center of the University of Bologna				

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages - Self-assessment grid

Communication skills

I like helping my co-workers and for this reason, I have good capability in listening others, observing their behaviour to understand their emotional status and talk with them to give personal support. Working with superiors and collegues let me develop also the capability of writing formal e-mails and reports.

Job-related skills

Strong Work Ethic, Positive and really motivate attitude, Good communication skills, Time management abilities, Problem-solving skills, Acting as a team player, Ability to accept and learn from criticism. I used to collaborate with foreign people and in my way, I have learnt to have an international view about life and job. Also, I like to experiment new way and to overcome every problem.

During the university period I acquired the following knowledge in the area of belonging:

- general knowledge of organic synthesis, multi-step synthesis, retrosynthetic analysis, metal catalysis and organocatalysis. Also, I have learnt how to approch medicinal chemistry and green chemistry.
- Instruments: HPLC-RP, preparative HPLC and GC-MS; Circular Dichroism; IR and FT-IR Spectrophotometers, Mono and Bi-Dimensional NMR, UV; Mass Spectrometry; Gas chromatography with chiral column; Polarimeter. XRD Analysis.
- Tests for the formation of hydrogel and training of tripeptidyl crystals.

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving
Independent user	Independent user	Independent user	Independent user	Independent user

Digital skills - Self-assessment grid

Thanks to my studies I have managed to acquire good computer skills in:

- Office;
- Spreadsheet;
- ChemDraw;
- Spinworks
- MestReNova.
- GraphPad

Driving licence: B

ADDITIONAL INFORMATION

Seminars	LC-QTOF for the organization of Unknown in the Food and Environmental Annexe 3 for the declaration.
Seminars	Identification of unknowns and structural confirmation by LC-MS in pharmaceutical analysis Annexe 4 for the declaration.
Seminars	Low energy ionization for structural confirmation in GC-QTOF. Annexe 5 for the declaration.

ATTACHMENTS

- Annexe 1.pdf
- Annexe 2.pdf
- Annexe 3.pdf
- Annexe 4.pdf
- Annexe 5.pdf

Annexe 1.pdf

Prot. n. 0000624 del 13/03/2020

DIPARTIMENTO DI CHIMICA «GIACOMO CIAMICIAN»

la sottoscritta ALEXIA MATTELLONE

Nata a PORDENONE (prov. PN) il 10/08/1995

Residente a BRUGNERA prov. PN

Via UNGARESCA n. 29/2 cap. 33070

Tel. 3497219767 e-mail alexia.mattellone@studio.unibo.it

DICHIARA

di accettare senza riserve e alle condizioni del bando di concorso Rep. n. 27 prot. n. 177 del 31/01/2020

la borsa di studio, per l'importo di € 5000,00 (al lordo delle ritenute di legge e comprensivo degli oneri a carico dell'ente),

il periodo di 5 mesi a partire dal 16/03/2020 al 15/08/2020

finanziata da: Residui commerciali (FRESENIUS) TOLOMELLI-

presso il Dipartimento di Chimica "G. Ciamician" in via Selmi n. 2, 40126 Bologna

con decorrenza dal 16/03/2020

Bologna, 10/3/2020

ALMA MATER STUDIORUM UNIVERSITA' DI BOLOGNA
DIPARTIMENTO DI CHIMICA GIACOMO CIAMICIAN
Anno 2020 Titolo III Classe 12 Fascicolo
N. 624 DATA: 13/03/2020
UOR CC RPA

Alexia Mattellone
(Firma per esteso e leggibile)

ALMA MATER STUDIORUM • UNIVERSITÀ DI BOLOGNA
VIA SELMI,2 - 40126 – BOLOGNA – ITALIA - Tel. 051/2099453 - Fax 051/2099454 - www.chimica.unibo.it

Annexe 2.pdf

Erasmus+

Higher Education Learning Agreement for Traineeship

Alexia Mattellone
Academic Year 2018 - 2019

VER. 1.0 (18110798491)

	Last name(s)	First name(s)	Date of birth	Nationality	Sex [M/F]	Study cycle	Field of education
Trainee 0000852442	MATTELLONE	ALEXIA	10/08/1995	ITALY	F	Master or equivalent second cycle	0531 Chemistry

	Name	School	Erasmus code	Address	Country	Contact person name; email; phone
Sending Institution	Alma Mater Studiorum - Università di Bologna	Science	I BOLOGNA01	VIA ZAMBONI 33 40126 BOLOGNA	ITALY, IT	TRAINEESHIP MOBILITY OFFICE erasmus.placement@unibo.it +39 051 2088102

	Name	Department	Address; website	Country	Size	Contact person name; position; email; phone	Mentor name; position; email; phone
Receiving Organisation /Enterprise	Julius-Maximilians-Universität Würzburg		Sanderring 2	GERMANY	> 250 employees	Holzgrabe Ulrike ulrike.holzgrabe@uni-wuerzburg.de 0049-931-31-89560	Decker Michael michael.decker@uni-wuerzburg.de 0049-931-31-89676

Before the mobility

Table A - Traineeship Programme at the Receiving Organisation/Enterprise

Planned period of the mobility: from [day/month/year] 01/03/2019 to [day/month/year] 31/05/2019

Traineeship title: Development of multifunctional chelating agents to modulate amyloid plaque formation	Number of working hours per week: 40

Detailed programme of the traineeship: The student will work with several compound that are multifunctional in nature and have been developed at the University of Barcelona. The student will synthesize the final compounds from precursors provided by Barcelona. the B-amyloid-disaggregating abilities might be attributed to metal chelating properties, for this reason, the respective assay to evaluate and quantify these properties shall be investigated and established and in return applied to correlate this property to the extent of anti-amyloid-activities

Knowledge, skills and competences to be acquired by the end of the traineeship (expected Learning Outcomes): compound design, organic synthesis, spectral characterization, measurement of physicochemical properties (metal chelation), influence on B-amyloid aggregation

Monitoring plan: weekly group meeting

Evaluation plan: monthly written reports

The level of language competence in English that the trainee already has or agrees to acquire by the start of the mobility period is B1

Table B - Sending Institution

The traineeship is embedded in the curriculum and upon satisfactory completion of the traineeship, the institution undertakes to:

Award 12 ECTS credits (or equivalent) as - elective activity/attività a libera scelta: 81355 - PREPARAZIONE PROVA FINALE ALL'ESTERO - 12 CFU	Give a grade/evalutation based on: Traineeship certificate [X] Final report [ ] Interview [ ]
Record the traineeship in the trainee's Transcript of Records and Diploma Supplement (or equivalent).	
Record the traineeship in the trainee's Europass Mobility Document: No	

Accident insurance for the trainee

The Sending Institution will provide an accident insurance to the trainee (if not provided by the Receiving Organisation/Enterprise): Yes	The accident insurance covers: - accidents during travels made for work purposes: Yes provided that a regular authorization from the receiving organization to travel for work purposes is supplied - accidents on the way to work and back from work: No

Erasmus+

Higher Education Learning Agreement for Traineeship

Alexia Mattellone
Academic Year 2018 - 2019

The Sending Institution will provide a liability insurance to the trainee (if not provided by the Receiving Organisation/Enterprise): Yes
Insurance details: - Accident insurance: AIG nr. IAH0008528 - deadline 28/02/2019. The insurance offered by the University of Bologna covers trainees for accidents while carrying out activities at the host company. - Third party insurance: UNIPOLSAI nr. 65/745444524 - deadline 28/2/2019. The insurance offered by the University of Bologna covers possible third party damages caused by the trainee in the fulfilment of the internship's tasks. A copy can be provided upon request. The University of Bologna guarantees the replacement of the above insurance coverage through new policies to be signed within 28/02/2019. The new details can be provided upon request once available. Accidents in the workplace are also covered by INAIL insurance policy. For Physicians on specialist training: during the period of traineeship abroad, the insurance coverage under art. 41 of D.Lgv. 368/99 is responsibility of the host organization. If the host organization does not provide the insurance coverage, physicians on specialist training must take out a policy in their own right.

Table C - Receiving Organisation/Enterprise

The Receiving Organisation/Enterprise will provide financial support to the trainee for the traineeship: Yes [ ] No [ ]	If yes, amount (EUR/month): .....
The Receiving Organisation/Enterprise will provide a contribution in kind to the trainee for the traineeship: Yes [ ] No [ ] If yes, please specify: ...	
The Receiving Organisation/Enterprise will provide an accident insurance to the trainee (if not provided by the Sending Institution): Yes [ ] No [ ]	The accident insurance covers: - accidents during travels made for work purposes: Yes [ ] No [ ] - accidents on the way to work and back from work: Yes [ ] No [ ]
The Receiving Organisation/Enterprise will provide a liability insurance to the trainee (if not provided by the Sending Institution): Yes [ ] No [ ]	
The Receiving Organisation/Enterprise will provide appropriate support and equipment to the trainee.	
Upon completion of the traineeship, the Organisation/Enterprise undertakes to issue a Traineeship Certificate within 5 weeks after the end of the traineeship.	

By signing this document, the trainee, the Sending Institution and the Receiving Organisation/Enterprise confirm that they approve the Learning Agreement and that they will comply with all the arrangements agreed by all parties. The trainee and Receiving Organisation/Enterprise will communicate to the Sending Institution any problem or changes regarding the traineeship period. The Sending Institution and the trainee should also commit to what is set out in the Erasmus+ grant agreement. The institution undertakes to respect all the principles of the Erasmus Charter for Higher Education relating to traineeships (or the principles agreed in the partnership agreement for institutions located in Partner Countries).

Commitment	Name	Email	Position	Date	Signature and stamp (if available)
Trainee	MATTELLONE ALEXIA	alexia.mattellone@studio.unibo.it	Trainee	05/11/2018	
Responsible person at the Sending Institution	Pier Giorgio Cozzi	piergiorgio.cozzi@unibo.it	Head of MS degree in Chemistry, full professor	7-11-2018	
Supervisor at the Receiving Organisation					

Erasmus+

Annex 1 – additional information for internal use

Alexia Mattellone
Academic Year 2018 - 2019

Note dello studente: Pongo alla vostra attenzione il seguente documento, sperando sia conforme alle normative Erasmus+.

Cordiali saluti.

Annexe 3.pdf

Certificate of Attendance

Alexia Mattellone

ha partecipato al Seminario on Line:
LC-QTOF per l'analisi di Unknown nei settori Alimentare e Ambientale
il 05 Maggio 2020

Annexe 4.pdf

Certificate of Attendance

Alexia Mattellone

ha partecipato al Seminario on Line:
Identificazione degli incogniti e conferma strutturale tramite LC-MS nell'analisi farmaceutica
il 07 Maggio 2020

Annexe 5.pdf

Certificate of Attendance

Alexia Mattellone

ha partecipato al Seminario on Line:
Ionizzazione a bassa energia per la conferma strutturale in GC-QTOF

il 14 Maggio 2020