

CURRICULUM VITAE



PERSONAL INFORMATION

| | |
|-------------------------|---|
| Name | LORENZO TAGLIAZUCCHI |
| Address | VIA DEL POZZO 76, 41124 MODENA (MO), IT |
| Mobile phone | +39 338.7816272 |
| e-mail | Lorenzo.tagliazucchi@unimore.it |
| PEC | Lorenzo.tagliazucchi@pec.virgilio.it |
| Skype | Lorenzo_tagliazucchi |
| Place and date of birth | Sassuolo (Mo), 23.06.1995 |

EMPLOYMENT

01.12.2020 – present

Junior Research Grant – *Assegno di ricerca junior*

Dept. of Life Sciences

Tutor: Prof. M.P. Costi, Drug discovery and Biotechnology Laboratory

Title of the project: "Drug resistance studies in Leishmania cells induced by innovative antiparasitic agents". Tutor: Prof. MP Costi. 01.12.2020 – 30.11.2021.

Research fields:

- Bottom-up Proteomics (UHPLC-HRMS Orbitrap Q-Exactive hybrid based) for on *in vitro* samples for the detection of *L. infantum* proteins associated to antiparasitic agents' resistance, in collaboration with Prof. F. Gamarro (Inst. López-Neyra, Granada).
- LFQ Proteomics (nLC-HRMS, Bruker Qq-ToF) on *in vivo* samples for the detection of putative biomarkers predictive of good response to Bevacizumab when associated with standard chemotherapies in patients diagnosed with Ovarian Carcinoma, phase III/IV clinical study (Mito 16 Project, Istituto Nazionale dei Tumori di Napoli).
- Characterization of human TEAD transcriptional factor, surface reactivity and YAP:TEAD interaction through HPLC-UV/Vis, spectrofluorimetry, MS assays and chemical probes.
- Kinetic inhibition screening of cycloguanil and pyrimethamine analogues targeting parasitic TbPTR1 and TbDHFR-TS.
- Development of HPLC-ELSD / HPLC-APCI-MS methods for the characterization of beeswax products for long-chain fatty acids quali-quantitative profiling.

22.06.2020 – 15.10.2020

Research Contract – *Contratto di ricerca occasionale*

Dept. of Life Sciences - Dept. of Biomedical and Metabolic Sciences, Modena

Tutor: Prof. M.P. Costi, Drug discovery and Biotechnology Laboratory

Title of the project: "Studio proteomico, mediante spettrometria di massa, della modulazione delle proteine circolanti in siero di pazienti affette da tumore ovarico: studio MITO-16"

08.01.2020 – 08.03.2020

Research Contract – *Contratto di ricerca occasionale*

Dept. of Life Sciences

Tutor: Prof. M.P. Costi, Drug discovery and Biotechnology Laboratory

Title of the project: "Metodiche analitiche applicate allo studio di nuovi composti ad azione dissociativa verso l'enzima timidilato sintasi"

Sept 2019 - Dec 2019

Post-graduate visitor

Dept. of Life Sciences - Dept. of Biomedical and Metabolic Sciences, Modena

Tutor: Prof. M.P. Costi, Drug discovery and Biotechnology Laboratory

Research fields:

- Protein expression (hTS, Tb/LmDHFR-TS, TbPTR1, hDHFR enzymes and hTEAD transcription factor), extraction, purification through preparative chromatography (Akta FPLC system) and spectrophotometric kinetics/ inhibition assays.
- Mass spectrometry studies (Agilent Triple Quadrupole, Ion Trap and Orbitrap Q-Exactive Hybrid) to test in-vitro pharmacokinetics and cell catabolism of synthetic novel antiproliferative compounds targeting human thymidylate synthase enzyme.

07.01.2019 – 14.07.2020

Internship in analytical chemistry & toxicology

UNIRELAB SRL (Ministero delle Politiche agricole, alimentari, forestali e del Turismo)

Settimo Milanese, MI. Health director: Dr. M. Fidani

Six-month internship aimed to work on master's degree thesis.

Instrumentation employed: LC-MS (LTQ Ion Trap, triple quadrupole analyser and Orbitrap Exactive Plus), GC-EI-MS (triple quadrupole), ICP-MS and SPE / LLE automatized extractors.

Quality control traineeship in quali-quantitative main parameters for the validation of analytical procedures, acc. to the main EU accreditation bodies.

11.06.2018 – 19.09.2018

Internship in Aus/Aou Policlinico di Modena

Supervisors: Dr M. Lukovic, Dr. L. Cancian

- Laboratory of hospital galenic preparations (sterile- clean room- and non-sterile conditions), for continuity of home healthcare and paediatrics regimen.

- Management of *Magazzino degli Antidoti*, under the supervision of Centro Antiveneni di Ferrara.

- Medical devices (MD's) health vigilance and ADR management.

EDUCATION AND QUALIFICATIONS

10.12.2019

State Exam for Pharmacists

II session

Sept 2014 – 18.07.2019

Master's Degree in Medicinal Chemistry and Pharmaceutical Technology

(CTF), DM 270/2004, LM-13

UniMoRe, Dept. of Life Sciences (DSV)

Thesis title: "Analysis of main stress markers in racehorse urine through LC-MS and GC-MS techniques", former Ministero delle Politiche agricole, alimentari, forestali e del Turismo in Settimo Milanese, MI.

First Relator: Professor M.C. Gamberini. Co-relator: Dr. M. Fidani.

26.06.2014

Maturità Classica

Liceo Classico L.A Muratori

12.04.2012

ESOL Cambridge examination

C1 knowledge level of English

(Modena- Cambridge)

LANGUAGES

ITALIAN: Mother tongue

ENGLISH: Scientific knowledge. C1 Cambridge Certificate

FRENCH: School level

MSA (Modern Standard Arabic): School level

DIGITAL SKILLS

Good knowledge of **Office Suite**, **Origin** statistical package, graph editor **Prism-GraphPad**, **R** / **RStudio** environments, **Chimera**, **BIOVIA**, **AutoDock** and **PyMol** for molecule visualization and simple simulations. Good knowledge of the main software's for the elaboration of LC-MS and GC-MS results: **XCalibur**, **Freestyle**, **MassHunter**, **ChemStation**. Good knowledge of the main software's for MS based bottom-up Proteomics: **MaxQuant**, **Mascot Matrix**, **Peaks Studio**, **Progenesis Q1**, **mMass**, **MassSpec** and **SkyLine**. Good ability to use **Novor** for de-novo peptide sequencing and **UniDec** for intact MS spectra deconvolution.

PROFESSIONAL SKILLS

Autonomy in the utilization of **(U)HPLC-MS** Thermo Fisher Scientific (LTQ Finnigan, TSQ Endura, TSQ Quantum Ultra, Orbitrap Exactive Plus and Q-Exactive Hybrid) and Agilent LC-MS instrumentation (6410 Triple Quadrupole) with **ESI** and **APCI** sources for analytical purpose, proteomics studies and basic equipment maintenance. Autonomy in the utilization and basic maintenance of **Agilent GC-MS 6000 series**. Autonomy in the utilization of Biotage **Extrahera** for SPE and SLE. Discrete ability in using **ICP-MS** for metal quantification in biological matrices. Autonomy in the management of pre-treatment and **SPE/LE** extraction procedures to deal with biological samples (urine, serum, hair), food sophistication, environmental contaminants and antidoping purposes. Autonomy in running preparative chromatography (silica gel traditional columns, RP and automatized Biotage **Isolera**).

Autonomy in the utilization of **II HPLC - UV/Vis and ELSD** (evaporative light scattering detector).

Autonomy in NMR sample preparation (Bruker 400 and 600) and sample analysis of **H-NMR**, **13C-NMR** and correlation NMR.

Good ability to use **Fast Protein Liquid Chromatography (FPLC)** AKTA systems for protein purification with preparative columns for affinity chromatography and size-exclusion chromatography. Autonomy in using **UV-Vis spectrophotometers** (Jasco V730, Cary100, Multiskan Go, Tecan GENios multiplate reader) and **Fluoromax** (Horiba) spectrofluorometers to analyse enzyme kinetics, perform inhibition assay, characterizes raw moieties and measure fluorescence parameters. Autonomy in manipulation of plasmid material for amplification/isolation processes, nucleic acid purity evaluation assays, bacteria chemical **transformation**, **recombinant protein expression** and **SDS pages** development. Good ability in label free quantitative Proteomics sample preparation (plasma/serum highest abundant proteins immunodepletion, **EASP** digestion, **in-gel** digestion, **in-solution** digestion, **SPE** and **ZipTip** desalting), in **HPLC-ESI-MS** of **intact protein** ('native' ESI) and in **protein labelling** with fluorescent probes.

LABORATORY TUTORING ACTIVITY:

-**Co-relator** for MSc degree in Pharmaceutical Biotechnology, candidate: Dr. G. Malpezzi. First relators: Prof. S. Schinelli, Prof MP Costi. Co-relator: Dr. L. Tagliacruzchi. Title: "Solvent exposure and reactivity of the cysteines of Transcriptional Enhancer Associate Domain (TEAD), a potential anticancer target". UniPv, 28.04.2021

- **Co-relator** for MSc degree in Biological Sciences, candidate: Dr. MG. Moschella. First relator: Prof MP Costi. Co-relators: Prof. L. Losi, Dr L Tagliacruzchi. Title: "Discovery Proteomics studies for the identification of serum proteins associated with treatment response in ovarian cancer patients". Unimore, 18.02.2021

-**Co-relator** for BSc degree in Biotechnology (DSV), candidate: Dr. S. di Persio. First relator: Prof MP Costi. Co-relators: Prof. G Ponterini, Dr. L Tagliacruzchi. Title: "Study of TEAD-inhibitors interactions" Unimore, 14.12.2020

-**Co-relator** for MSc degree in Biological Sciences, candidate: Dr. P. Cavalcante, first relator: Prof MP Costi. Title "Quantificazione mediante spettrometria di massa dell'uptake cellulare di inibitori innovativi dell'enzima Timidilato Sintasi umana in cellule tumorali ovariche", UniMore, 17-07-2020

PUBLICATIONS, POSTERS and ABSTRACTS:

-**Article** "Evidence of Pyrimethamine and Cycloguanil Analogues as Dual Inhibitors of Trypanosoma Brucei Pteridine Reductase and Dihydrofolate Reductase". Giusy Tassone, Giacomo Landi, Pasquale Linciano, Valeria Francesconi, Michele Tonelli, Lorenzo Tagliacruzchi, Maria Paola Costi, Stefano Mangani, Cecilia Pozzi. Submitted to Pharmaceuticals J (MDPI) on 01.05.2021

-**Abstract** "UHPLC-MS/MS screening of the hTEAD surface for the identification of novel allosteric inhibitors with anticancer activity". L. Tagliacruzchi, G Malpezzi, C Pozzi, L Lopresti, S Mangani, AA Latif, G Ponterini, A Venturelli, MP Costi. Submitted to XXVII Congresso Nazionale della Società Chimica Italiana on 31.05.2021

-**Abstract** "Development of guanidino-containing benzimidazoles as novel folate enzymes inhibitors for the treatment of Human African Trypanosomiasis" M Rizzo, V Francesconi, E Cichero, S Schenone, L. Tagliacruzchi, A Cordeiro-da-Silva, MP Costi, M Tonelli.

Submitted to XXVII Congresso Nazionale della Società Chimica Italiana on 31.05.2021

-Abstract "A dual proteomic and transcriptomic approach to identify novel drug resistance mechanisms in *Leishmania infantum* strains". L. Tagliazucchi, G Fiorini, A Perea-Martinez, R García-Hernández, JI Manzano, F Gamarro, MP Costi. Submitted to MedChem 2021 Paul Erlich Virtual Meeting on 31.05.2021. (Project supported by the Spanish Grant RTI2018-097210-B-100 and Grant n° 603240 NMTrypI - New Medicine for Trypanosomatid Infections).

-Abstract "Structural insight into YAP-TEAD4 protein-protein interactions as target for cancer treatment. L Lopresti, C Pozzi, L. Tagliazucchi, D D'Arca, G Marverti, MP Costi, Stefano Mangani. Submitted to XXVII Congresso Nazionale della Società Chimica Italiana on 31.05.2021

- Article "Structural bases for the synergistic inhibition of human thymidylate synthase and ovarian cancer cell growth by drug combinations". Cecilia Pozzi, Matteo Santucci, Gaetano Marverti, Domenico D'Arca, Lorenzo Tagliazucchi, Stefania Ferrari, Gaia Gozzi, Lorena Losi, Giusy Tassone, Stefano Mangani, Glauco Ponterini, Maria Paola Costi. *Cancers* 13, no. 9: 2061. DOI: 10.3390/cancers13092061. Published: 23.04.2021

-Poster. "Targeting of the cysteines surface domain of the Transcription Enhancer Associate Domain (TEAD) for anticancer drug discovery". L. Tagliazucchi, G Malpezzi, G Ponterini, S Mangani, L Lopresti, C Pozzi, A Venturelli, MP Costi. 13th Young Medicinal Chemistry Symposium - Nuove prospettive in chimica farmaceutica. Società Chimica Italiana. 20-25th April 2021

-Article "Folic Acid–Peptide Conjugates Combine Selective Cancer Cell Internalization with Thymidylate Synthase Dimer Interface Targeting". Gaetano Marverti, Chiara Marraccini, Andrea Martello, Domenico D'Arca, Salvatore Pacifico, Remo Guerrini, Francesca Spyrikis, Gaia Gozzi, Angela Lauriola, Matteo Santucci, Giuseppe Cannazza, Lorenzo Tagliazucchi, Addolorata Stefania Cazzato, Lorena Losi, Stefania Ferrari, Glauco Ponterini, and Maria P. Costi. *Journal of Medicinal Chemistry* 2021 64 (6), 3204-3221. DOI: 10.1021/acs.jmedchem.0c02107. Published: 13.03.21. Vocal abstract author (Published: 26.03.21)

-Poster and oral presentation "Cellular uptake and metabolic degradation of a conjugate of folic acid with an anticancer peptide targeting the human Thymidylate synthase", L. Tagliazucchi, G. Marverti, D. D'Arca, M.P. Costi. The 18th Hellenic Symposium on Medicinal Chemistry. 23-25th February 2021, online participation.

-Keynote presentation at 20th World Congress of Medicinal chemistry, Title: "Profiling a multiactions folic acid-octapeptide conjugate to gain anticancer selectivity". Professor Maria Paola Costi. Affiliation: Co-authors: Marverti, Gaetano; Marraccini, Chiara; Martello, Andrea; D'Arca, Domenico; Pacifico, Salvatore; Guerrini, Remo; Spyrikis, Francesca; Gozzi, Gaia; Lauriola, Angela; Santucci, Matteo; Tagliazucchi, Lorenzo; Cannazza, Giuseppe; Cazzato, Stefania; Losi, Lorena; Ferrari, Stefania; Ponterini, Glauco.
Rome, Feb 28-29, 2020

-Poster "Advances in the set-up of a fluorescence-anisotropy assay for the search of novel inhibitors of the TEAD-4 complexes" F Romito, L. Tagliazucchi, C Pozzi, S Mangani, L Lopresti, G Ponterini, MP Costi. *Simposio per la XIX Giornata della Chimica, Emilia Romagna*.
Modena, 6-12-2019

CERTIFICATES, SEMINARS and POSTERS

-Seminar Speaker at lesson cycle "La ricerca di nuovi farmaci contro SARS-CoV-2" organized by Prof. MP Costi. UniMoRe (via Teams). Modena, 20.05.2021

-Research Grant- Junior (Chim/08) / Assegno junior di ricerca "Drug resistance studies in *Leishmania* cells induced by innovative antiparasitic agents". Tutor: Prof. MP Costi. 01.12.2020 – 30.11.2021

-Seminar Speaker at lesson cycle "Primi approcci della medicinal chemistry alle infezioni da COVID19" held by Prof. MP Costi. Title of the lesson: "Farmaci e molecole contro RNA pol RNA dipendente/nsp(7-8) virale, Proteina Spike e Host Target". Courses: Pharmaceutical Chemistry II; Biotechnological drugs. UniMoRe (via Teams), Modena, 20.05.2020

-Workshop "Elettroforesi Capillare e spettrometria di massa: potenzialità e possibilità" (Capillary electrophoresis and mass spectrometry: potentialities and opportunities). Milano, 08-05-2019

-Certificate "Programma regionale per la formazione continua degli operatori della Sanità", Regione Emilia-Romagna
AUSL Modena, 13-09-2018

MEMBERSHIPS:

-Member of Società Chimica Italiana (SCI), Pharmaceutical Chemistry division.

In faith,
Lorenzo tagliazucchi

Autorizzo il trattamento dei dati personali contenuti nel mio curriculum vitae in base all'art. 13 del D. Lgs. 196/2003 e all'art. 13 del Regolamento UE 2016/679. Quanto dichiarato nel presente curriculum vitae corrisponde al vero ai sensi degli artt. 46 e 47 del D.P.R. 445/2000

