





Massimiliano Runfola



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Education

PhD student at Doctoral School of “Science of drug and bioactive substances”

Department of Pharmacy, University of Pisa.

Research project: “*Design, synthesis and biological evaluation of new compounds for treatment of neurodegenerative disorders*”.

November 2017 - November 2020 (expected)

Advisor: Professor Simona Rapposelli

Master’s Degree at University of Pisa (Italy)

Major subject in *Medicinal Chemistry*, June 2016.

Final dissertation title: “*Design and development of new thyronamine analogues as new TAAR1 agonists: evaluation of their role as gene expression modulators in cellular models of neurodegenerative diseases*”

Awards and Fellowships

- **IPAM-Farindustria Award 2017** : Master’s degree thesis was awarded as “*the most innovative work in illustrating the use of cellular models for the screening of new molecules to be used in pharmacology*”.
- **Erasmus+ placement fellowship** at Escola Superior de Tecnologia da Saúde de Coimbra, Portugal (15th September 2016 - 1st March 2017)
- **DSU scholarship (2010-2015)** founded by the regional authority

Research Experience

Department of Pharmacy

Escola Superior de Tecnologia da Saúde de Coimbra, Portugal

September 2016 - March 2017

Advisor: *Professor Zelia Barbosa*

Development and optimization of a Dispersive Liquid-liquid Micro-Extraction (DLLME) procedure followed by chromatographic analysis with Ultra Performance Liquid Chromatography with Fluorescence Detection (UPLC-FLD) to identify and quantify antidepressant drugs in environmental matrixes. The work led to an optimized and selective procedure to determinate fluoxetine in environmental waters at nano-molar concentrations.

Laboratory experience included basic techniques of extractive and analytical chemistry, UPLC-FLD analyses.

School of Medicine

University of Pisa

March 2016 - June 2016

Advisor: *Professor Grazia Chiellini*

Gene expression analysis by Real-Time quantitative PCR (RT-qPCR) technique in human glioblastoma cell lines (U87MG). This study provided evidence of T1AM and selected SG compounds, namely SG-1 and SG-2, ability to modulate the expression of genes involved in neuroprotection pathways.

Techniques used include cell culture manipulation, primers design, RT-qPCR, gel electrophoresis and RNA sequencing.

Department of Pharmacy

University of Pisa

September 2015 - March 2016

Advisor: *Professor Simona Rapposelli*

Synthesis of thyronamine-like analogues, namely SG-1 and SG-2, known to be potent mouse trace amine receptor 1 (mTAAR1) agonists. Design and development of new synthetic strategies to provide mono- and bis-N-acetyl derivatives of SG-1 and SG-2 compounds in order to improve their affinity to hTAAR1. This work allowed to expand the class of synthetic analogues of thyronamines providing more efficient synthetic pathways.

Laboratory experience included basic organic chemistry techniques, chromatographic purification, and NMR analysis.

Teaching Experiences

Department of Pharmacy

University of Pisa, Italy

May 2015 - July 2015

Advisor: Professor Daniela Monti

Teaching assistant at laboratories of Pharmaceutical Technology class. Supervised and assisted students in learning basics of pharmaceutical technology's techniques.

Scientific Publications

2) *Sestito S, Runfola M, Tonelli M, Chiellini G, Rapposelli S. "New multitarget approaches in the war against Glioblastoma: a mini-perspective"*

New Frontiers in Anticancer Drugs -Submitted

1) *Chiellini G, Nesi G, Sestito S, Chiarugi S, Runfola M, Espinoza S, Sabatini M, Bellusci L, Laurino A, Cichero E, Gainetdinov R, Fossa P, Raimondi L, Zucchi R, Rapposelli S. "Hit-to-lead optimization of mTAAR1 agonists with a diphenylmethane-scaffold: Design, Synthesis, and biological study"*

J. Med. Chem., 2016, 59 (21), pp 9825-9836 - Oct 12, 2016

Oral presentations and Abstracts

3) *Runfola M. Optimization of 3-iodothyronamine synthetic analogues as novel therapeutic option for neurological disorders. Oral presentation at "VII European Workshop in Drug Synthesis", Certosa di Pontignano (SI), Italy*

2) *Runfola M, Sestito S, Bellusci L, Chiellini G, Rapposelli S. 2018. Optimization of 3-iodothyronamine synthetic analogues as novel therapeutic option for neurological disorders. Poster presentation at "VII European Workshop in Drug Synthesis", Certosa di Pontignano (SI), Italy*

1) *Runfola, M. 2018. Design, synthesis and biological evaluation of new compounds for treatment of neurodegenerative diseases. Oral presentation at "Research and innovation within alternative methods Workshop", Torino (TO), Italy*

Meetings

3) *"VII European Workshop in Drug Synthesis", 20th-24th May 2018, Certosa di Pontignano (SI), Italy*

2) *"AAT-AD/DPD Focus Meeting 2018", 15th-18th March 2018, Turin, (TO), Italy*

1) *"Research and innovation within Alternative Methods Workshop", 18th January 2018, Turin, (TO), Italy*

Languages

- **Italian:** native language
- **English:** C1 level (academic certificate)

- Portuguese: A1 level

Other Activities

- Delegate of students of the Department of Pharmacy (2013-2016)
- Interests include art, listening, playing and writing music, reading, traveling, and Taekwondo.

References

Professor Simona Rapposelli

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