

Andrea Spinaci

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PERSONAL

Date of Birth: 22/10/1988

Place of Birth: Ancona

Nationality: Italian

EDUCATION

31/03/2017

PhD in Chemical and Pharmaceutical Sciences and Biotechnology
University of Camerino, Camerino

07/03/2013

Master degree, Pharmaceutical Chemistry and Technology
University of Camerino, Camerino

Vote: 105/110

06/2007

High School Diploma – Liceo Scientifico
Liceo Scientifico “Galileo Galilei” Macerata

EMPLOYMENT

1/02/2017–31/07/2017

Post-Doc Fellowship in Medicinal Chemistry
University of Camerino, Camerino (Italy)

08/03/2013–07/07/2013

Post-graduate fellowship in Medicinal Chemistry
University of Camerino, Camerino (Italy)

05/03/2012–05/03/2013

Experimental Thesis in Medicinal Chemistry
Title of the thesis: *Multitarget-ligands as advantageous tools in reducing the opiate withdrawal syndrome and related comorbidities.*
Università di Camerino, Camerino (Italy)

1/02/2017-31/07/2017

Internship in Laboratory of Forensic Toxicology and Forensic Medicine
University of Macerata

01/06/2011–30/01/2012

Apprenticeship in Pharmacy
Farmacia Cairoli, Fabrizio Buglioni, Macerata (Italy)

Andrea Spinaci

**DIDACTICAL
EXPERIENCE****Supervisor of Experimental Thesis**

Master Degree in Pharmacy (LM-13); Experimental Thesis in Medicinal Chemistry "*Derivati disostituiti della 9-etileadenina come nuovi antagonisti del recettore adenosinico A_{2A}*"

Graduate Student: Valeria Marcantoni,

Supervisor: Prof. Catia Lambertucci, **Dr Andrea Spinaci** (a.a. 2016-2017)

13/04/2015–29/04/2015

Tutor in Drug Quantitative Analysis Course

University of Camerino, Camerino (Italy)

Support to students in the use of quantitative analytical tools: polarimeter, spectrophotometer, pH-meter, conductivity-meter, potentiometer

**INTERNATIONAL
EXPERIENCE**

01/05/2016–11/09/2016

Mobility periods abroad

Institute of Medical Science (IMS)

University of Aberdeen, Aberdeen (United Kingdom)

SKILLS

Language – Good: English, mother tongue: Italian

Computer Skills - Microsoft Office, TopSpin and CMC-A Software for NMR spectra analysis, ChemBioDraw, Acrobat Reader, Xcalibur LC/GC-MS Software, pKcsm Software

Synthetic Skills - Nucleophilic aromatic substitution, cross-coupling reaction (Sonogashira coupling, Suzuki reaction), Sandmeyer reaction, nucleoside and nucleotide synthesis, oxychlorination, allylic oxidation, protecting group reaction, glycosylation, reduction and oxidation.

Purification Skills – Gravimetric and flash chromatography, reversed phase chromatography, ion exchange chromatography, HPLC, crystallization, liq-liq extraction, distillation, preparation of dry solvents.

Characterization Skills – ¹H-NMR and ¹³C-NMR spectra analysis, IR-spectra analysis; UV-spectra analysis; polarimetric analysis; GC-mass analysis and HPLC-MS analysis.

Instrumentation Use Ability - Bruker AVANCE III 400/500 NMR spectrometer, ESI-MS, LC/GC-MS Agilent, Thermo Orbitrap LC-MS, BUCHI melting point, DSX™ Automated Four-Plate ELISA System

Biological data analysis – Interpretation of binding affinity data and functional activity at cells culture or ex vivo assay, Elisa data analysis, preliminary multi drug test analysis for drug abuse compounds (THC, amphetamine, morphine, cocaine, etc), alcoholemia misuration.

Sample Preparation – Preparation and extraction from biological material (blood, hair, urine, bile) of substances of abuse by liq-liq extraction, SPE column; silyl derivatization, acid or enzymatic glucuronide hydrolysis.

**ATTENDED
CONFERENCE AND
SEMINAR**

16/5/2017

LC-MS/MS: applicazioni per l'analisi di molecole endogene ed esogene.

SCIEX, SeaPort Hotel, Ancona

15/1/2016

Riunione Annuale del Purine Club Italiano

Istituto Superiore della Sanità, Roma

29/06/2014–03/07/2014

Thematic course: European School of Medicinal Chemistry

University of Urbino Carlo Bo

26/06/2015-30/06/2015

Thematic course: European School of Medicinal Chemistry

University of Urbino Carlo Bo

27/10/2015

Sigma-Aldrich Young Chemists Symposium (SAYCS 2015) SCI

Società Chimica Italiana, Rimini

23-25/09/2015

TUMA XXXIV – Convegno delle sezioni Toscana Umbria Marche

Abruzzo della Società Chimica Italiana

Società Chimica Italiana, Perugia

11/06/2015

Statistics and Data Management

Speaker: Mauro Angeletti

University of Camerino

16/10/2015

Innovation management: how to manage and develop innovative projects at industrial level

Speaker: Cristina Cristalli

University of Camerino

14/10/2015

Writing a grant proposal

Speaker: Ciro Franco

University of Camerino

15/10/2015

Job Hunt

Speaker: Micheal Zebrak

University of Camerino

12/10/2015

Proprietà intellettuale e comunicazione scientifica nella società dell'informazione

Speaker: Avv. Simone Alipardi

University of Camerino

10/02/2015

Farmaci per il trattamento delle malattie virali

Speaker: Romano Silvestri


University of Camerino

PUBLICATIONS

- 1) Zanato, C., Pelagalli, A., Marwick, K. F., Piras, M., Dall'Angelo, S., **Spinaci, A.**, Pertwee R, Wyllie G. J. A, Hardingham G. E & Zanda, M. (2017). Synthesis, radio-synthesis and in vitro evaluation of terminally fluorinated derivatives of HU-210 and HU-211 as novel candidate PET tracers. *Organic & Biomolecular Chemistry*, 15(9), 2086-2096.
- 2) Marucci, G., Dal Ben, D., Lambertucci, C., Santinelli, C., **Spinaci, A.**, Thomas, A., Volpini R. & Buccioni, M. (2016). The G Protein-Coupled Receptor GPR17: Overview and Update. *ChemMedChem*, 11(23), 2567-2574.
- 3) Dal Ben, D., Marchenkova, A., Thomas, A., Lambertucci, C., **Spinaci, A.**, Marucci, G., Nistri A., Volpini, R. (2017). 2', 3'-O-Substituted ATP derivatives as potent antagonists of purinergic P2X3 receptors and potential analgesic agents. *Purinergic signalling*, 13(1), 61-74.
- 4) Dal Ben, D., Buccioni, M., Lambertucci, C., Marucci, G., Santinelli, C., **Spinaci, A.**, Thomas, A., & Volpini, R. (2016). Simulation and Comparative Analysis of Different Binding Modes of Non-Nucleoside Agonists at the A_{2A} Adenosine Receptor. *Molecular informatics*, 35(8-9), 403-413.
- 5) Thomas, A., Buccioni, M., Dal Ben, D., Lambertucci, C., Marucci, G., Santinelli, C., **Spinaci, A.**, Kachler, S., Klotz, K.-N. & Volpini, R. (2016). The Length and Flexibility of the 2-Substituent of 9-Ethyladenine Derivatives Modulate Affinity and Selectivity for the Human A_{2A} Adenosine Receptor. *ChemMedChem*, 11(16), 1829-1839.
- 6) Lambertucci, C., Buccioni, M., Dal Ben, D., Kachler, S., Marucci, G., **Spinaci, A.**, Thomas, A., Klotz, K.-N., & Volpini, R. (2015). New substituted 9-propyladenine derivatives as A_{2A} adenosine receptor antagonists. *MedChemComm*, 6(5), 963-970.

CONFERENCE PRESENTATIONS

Spinaci, A., Lambertucci, C., Buccioni, M., Dal Ben, D., Kachler, S., Marucci, G., Thomas, A., Klotz, K.-N., & Volpini, R
"Nucleotide derivatives as new ligands of the purinergic P2 Receptors"
38° Congresso nazionale Società Italiana Farmacologia, Palacongressi di Rimini, Rimini (Italy) October 28, 2017
(PERSONAL ORAL PRESENTATION)



C. Lambertucci, D. Dal Ben, M. Buccioni, G. Marucci, **A. Spinaci**, K.-N. Klotz, R. Volpini "*A_{2A}R agonists/A₃R antagonists: design, synthesis, and biological evaluation of new ligands with dual activity*" 7th Joint Italian-German Purine Club Meeting – "Advances in basic and translational purinergic research", Rome. July 20-22, 2017

G. Marucci, M. Buccioni, D. Dal Ben, C. Lambertucci, **A. Spinaci**, M. P. Abbracchio, R. Volpini "*Pharmacological characterization of the GPR17 receptor dual profile*" XXIV National Meeting in Medicinal Chemistry -10th Young Medicinal Chemists' Symposium, Perugia. September 11-14, 2016

A. Thomas, D. Dal Ben, C. Lambertucci, A. Marchenkova, **A. Spinaci**, G. Marucci, A. Nistri, R. Volpini "*2',3'-Substituted ATP derivatives as nanomolar antagonists of the purinergic P2X3 receptors and potential analgesic agents*" XXIV National Meeting in Medicinal Chemistry -10th Young Medicinal Chemists' Symposium, Perugia. September 11-14, 2016

M. A. Ngouadjeu, M. Buccioni, D. Dal Ben, C. Lambertucci, G. Marucci, C. Santinelli, **A. Spinaci**, A. Thomas, R. Volpini "*Versatile synthesis of 2,5-disubstituted triazolotriazine derivatives as A_{2A} adenosine receptor antagonists*" 33rd Camerino-Cyprus Symposium - Receptor Chemistry: Reality and Vision, Camerino. May 15-19, 2016

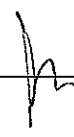
A. Thomas, M. Buccioni, D. Dal Ben, C. Lambertucci, G. Marucci, M. A. Ngouadjeu, A. Nistri, C. Santinelli, **A. Spinaci**, R. Volpini "*Constrained ribose ATP derivatives as new potent antagonists for the purinergic P2X3 receptors*" 33rd Camerino-Cyprus Symposium - Receptor Chemistry: Reality and Vision, Camerino. May 15-19, 2016

A. Thomas, M. Buccioni, D. Dal Ben, C. Lambertucci, G. Marucci, M. A. Ngouadjeu, C. Santinelli, **A. Spinaci**, S. Kachler, K.-N. Klotz, Rosaria Volpini "*Probing the 2-position of 9-ethyladenine for potent and selective A_{2A} adenosine receptor antagonists*" 33rd Camerino-Cyprus Symposium - Receptor Chemistry: Reality and Vision, Camerino. May 15-19, 2016

Spinaci, A., Lambertucci, C., Buccioni, M., Dal Ben, D., Kachler, S., Marucci, G., Thomas, A., Klotz, K.-N., & Volpini, R. *New Adenine Nucleoside as ligands with dual activity at the adenosine receptors*. Italian Purine Club 2015, Istituto Superiore della Sanità, Roma (Italy) January 16, 2016

(PERSONAL ORAL PRESENTATION)

A. Spinaci, M. Buccioni, D. Dal Ben, C. Lambertucci, C. Santinelli, A. Thomas, G. Marucci, R. Volpini "*Design, synthesis, and pharmacological characterization of 2,N⁶-disubstituted adenosine analogues of adenosine receptor ligands*" Purinergic Signaling, Vancouver (Canada). January 24–28, 2016



A. Thomas, M. P. Abbracchio, M. Buccioni, D. Dal Ben, C. Lambertucci, C. Martini, G. Marucci, C. Santinelli, **A. Spinaci**, R. Volpini "*Design, synthesis, and biological evaluation of new GPR17 ligands*" SAYCS 2015, Rimini. *October 27-29, 2015*

Spinaci, A., Lambertucci, C., Buccioni, M., Dal Ben, D., Kachler, S., Marucci, G., Thomas, A., Klotz, K.-N., & Volpini, R. *New substituted 9-propyladenine derivatives as A_{2A} adenosine receptor antagonists.* XXXIV Convegno delle Sezioni Toscana, Umbria, Marche e Abruzzo 2015 SCI - Società Chimica Italiana, Perugia (Italy) *September 24, 2015*
(PERSONAL ORAL PRESENTATION)

Spinaci, A., Thomas, A., Buccioni, M., Dal Ben, D., Lambertucci, C., Marucci, G., Santinelli, C., Klotz, K.-N. & Volpini, R. "*New N⁶-substituted adenosine derivatives as ligands with dual activity at adenosine receptors.*" Sigma-Aldrich Young Chemists Symposium (SAYCS 2015) SCI - Società Chimica Italiana, Rimini (Italy) *October 28, 2015*

M. Buccioni, D. Dal Ben, C. Lambertucci, G. Marucci, C. Santinelli, **A. Spinaci**, A. Thomas, K.-N. Klotz, R. Volpini "*New N⁶- substituted adenosine derivatives as ligands with dual activity at adenosine receptors*" XXIII Congresso National Meeting in Medicinal Chemistry (NMMC), Salerno. *September 6-9, 2015*

M. Buccioni, D. Dal Ben, C. Lambertucci, G. Marucci, C. Santinelli, **A. Spinaci**, A. Thomas, M. P. Abbracchio, R. Volpini "*Characterization of the GPR17 receptor dual pharmacological profile*" XXIII Congresso National Meeting in Medicinal Chemistry (NMMC), Salerno. *September 6 - 9 2015*

D. Dal Ben, M. Buccioni, C. Lambertucci, G. Marucci, C. Santinelli, **A. Spinaci**, A. Thomas, S. Kachler, R. Volpini "*9-Propyladenine derivatives as A_{2A} adenosine receptor antagonists*" XXIII Congresso National Meeting in Medicinal Chemistry (NMMC), Salerno. *September 6 - 9 2015*

A. Thomas, M. Buccioni, D. Dal Ben, C. Lambertucci, G. Marucci, C. Santinelli, **A. Spinaci**, M. P. Abbracchio, R. Volpini "*Stable nucleotide analogues as potent ligands for the purinergic P_{2Y} and P_{2Y}-like receptors*" XXIII Congresso National Meeting in Medicinal Chemistry (NMMC), Salerno. *September 6 - 9 2015*

A. Thomas, M. Buccioni, D. Dal Ben, C. Lambertucci, G. Marucci, C. Santinelli, **A. Spinaci**, K.-N. Klotz, R. Volpini. "*Upside-down adenine scaffold for the design of A_{2A} adenosine receptors ligands*" XXIII Congresso National Meeting in Medicinal Chemistry (NMMC), Salerno. *September 6 - 9 2015*



G. Marucci, M. Buccioni, D. Dal Ben, C. Lambertucci, C. Santinelli, **A. Spinaci**, A. Thomas, K.-N. Klotz, R. Volpini "Synthesis and biological characterization of 9-propyladenine derivatives as ligands for adenosine receptors" 6th Joint Italian-German Purine Club Meeting, Hamburg (Germany). July 23-25, 2015

C. Lambertucci, M. Buccioni, G. Marucci, D. Dal Ben, **A. Spinaci**, A. Thomas, K.-N. Klotz, R. Volpini "New ligands for adenosine receptors" 6th Joint Italian-German Purine Club Meeting, Hamburg (Germany). July 23-25, 2015

C. Lambertucci, M. Buccioni, G. Marucci, D. Dal Ben, **A. Spinaci**, A. Thomas, A. Nistri, R. Volpini "New purine derivatives as antagonists of P2X3 receptors" 6th Joint Italian-German Purine Club Meeting, Hamburg (Germany). July 23-25, 2015

R. Volpini, M. Buccioni, D. Dal Ben, C. Lambertucci, G. Marucci, C. Santinelli, **A. Spinaci**, A. Thomas "New ligands for the dual receptor GPR17" XXV National Congress of the Italian Chemical Society SCI 2014, Arcavacata di Rende. September 7-12, 2014

D. Dal Ben, M. Buccioni, C. Lambertucci, G. Marucci, C. Santinelli, **A. Spinaci**, A. Thomas, R. Volpini "Molecular modeling studies on A2B adenosine receptor and its ligands" XXV National Congress of the Italian Chemical Society SCI 2014, Arcavacata di Rende. September 7-12, 2014

C. Lambertucci, M. Buccioni, D. Dal Ben, G. Marucci, C. Santinelli, **A. Spinaci**, A. Thomas, R. Volpini "P1 Receptor Ligands: Design, Synthesis, and Biological Activity of New Adenosine Analogues" XXV National Congress of the Italian Chemical Society SCI 2014, Arcavacata di Rende. September 7-12, 2014

D. Dal Ben, M. Buccioni, C. Lambertucci, G. Marucci, **A. Spinaci**, A. Thomas, R. Volpini "Development of structural models of purinergic P2X receptors and analysis of interaction with agonists and antagonists" Purines 2014 – International Conference on Nucleotides, Nucleosides and Nucleobases, Bonn (Germany). July 23-27, 2014

D. Dal Ben, M. Buccioni, C. Lambertucci, G. Marucci, **A. Spinaci**, A. Thomas, K.-N. Klotz, R. Volpini "Different efficacy of adenosine and NECA derivatives at the human A3 adenosine receptor: molecular modeling analysis and insight into the receptor activation switch" Purines 2014 – International Conference on Nucleotides, Nucleosides and Nucleobases, Bonn (Germany). July 23-27, 2014

A. Thomas, M. Buccioni, C. Lambertucci, D. Dal Ben, G. Marucci, C. Santinelli, **A. Spinaci**, R. Volpini "Design, synthesis, and pharmacological characterization of 2,N⁶-disubstituted adenosine analogues as P1 receptor ligands" Purines 2014 – International Conference on Nucleotides, Nucleosides and Nucleobases, Bonn (Germany). July 23-27, 2014

C. Lambertucci, M. Buccioni, D. Dal Ben, G. Marucci, A. **Spinaci**, A. Thomas, R. Volpini "*Upside-down adenine derivatives as new antagonists for A_{2A} receptors*" Purines 2014 – International Conference on Nucleotides, Nucleosides and Nucleobases, Bonn (Germany). July 23-27, 2014

