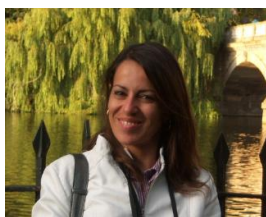


## CURRICULUM VITAE Rossella De Marco



**First name:** Rossella **Last name:** De Marco

**Email:** [rossella.demarco@uniud.it](mailto:rossella.demarco@uniud.it);

**28.11.2019-today** Assistant Professor at University of Udine, Dep. of Agricultural, Food, Environmental and Animal Sciences (DI4A)

### Education

**01.01.2009-31.12.2011** Ph.D. in Chemical Sciences; title of the thesis: "Synthesis of modified amino acids and insertion of peptides and mimetics. Structural aspects and impact on biological activity", supervisor Prof. L. Gentilucci, Dept. of Chemistry "G. Ciamician", University di Bologna

**01.07.2010-01.12.2010** Visiting PhD student at laboratories of Prof. Floris P.J.T. Rutjes, University of Nijmegen (Netherland), "Synthesis of peptidomimetic inhibitors of MCH1 receptor"

**07.03.2007** Degree in Chemistry and Pharmaceutical Technologies, University of Bologna. Discussing the Thesis "Bioisosters and models of xantonic derivatives as aromatase inhibitors", under the supervision of Prof.ssa A. Bisi.

### Experiences

**01.04.2019-01.10.2019** Separation, quantification and purification of gliadins from flour. Felsineo s.p.a.

**11.02.2018-11.09.2018** Marco Polo fellowship at the laboratory of Prof. N.S. Kehr University of Münster (Germany). Project: "Preparation of new devices for application in tumor and inflammatory disease"

**01.01.2014-31.01.2018** Post-doc fellowship of University of Bologna for "Synthesis of active ingredient precursors"

**01.01.2013-31.12.2013** Post-Doc fellowship "Young Investigator Programme-year 2013" by Umberto Veronesi Foundation Milan-Rome, project: "Tryptophan: Investigation and synthesis of new molecules for pain treatment in patients with stages advance of cancer"

**31.01.2012-31.12.2012** Post-Doc fellowship of the University of Bologna, for "Study of peptidomimetics based on 2D-NMR analysis"

**2008-2009** project "Development of new syntheses of peptides with green chemistry methods by means of automated SPPS in combination with polymers of the latest generation", financed by Spinner/ASTER

### Other Experiences

**2018** Member of the organizing committee of the International Congress: "RiminiPeptides2018" treasurer with P.IVA

**2017** Studies for the development of functionalized polymeric materials for biomedical applications, commissioned by Democenter-TPM Tecnopolo Mirandola

**2016** Member of the organizing committee of the International Congress: "BolognaPeptides2016" treasurer with P.IVA

**2009** Collaboration with Stepbio Srl for the "Development of automated procedures for the synthesis of peptides"

### Project management

**2008-2009** project “Development of new syntheses of peptides with green chemistry methods by means of automated SPPS in combination with polymers of the latest generation”, financed by Spinner/ASTER, host Institution the University of Bologna.

### **Participation to collaborative projects**

**2008** PRIN 2006 “Synthesis and biological evaluation, and diagnostic applications of integrins ligands”

**2009** Progetto PIU', Chamber of Commerce, Bologna "Synthesis of peptide-hormones in multigram-scale"

**2011-2013** “Project high significance Italia-Mexico (MAE) "Inhibitors of chronic inflammatory processes associated with the development of tumors". In collaboration with Prof. E. Juaristi, CINVESTAV, Mexico City.

**2010-2014** Project Prin2010, entitled: “Synthesis and biomedical applications of tumor-targeting peptidomimetics”, financed by MIUR

**2012-2013** "TRYPTOIDS: development of new therapeutic agents of natural origins for pain management and sedation in patients with advanced stages of cancer", financed by by Umberto Veronesi Foundation, Milan-Rome.

**2015-2017** " *AsthmaZoè*: Nanostructured materials for detention of markers of asthma and other correlated inflammatory diseases", financed by CHIESI Foundation, Parma.

**2016-2018** Project Prin 2015 “Tumor targeting peptidomimetics: synthesis and biomedical applications”, MIUR.

**2017** Studies for the development of functionalized polymeric materials for biomedical applications, commissioned by Democenter-TPM Tecnopolo Mirandola

**2017** Studies on Gliadin  $\alpha$  for celiac disease in collaboration with Felsineo

**2017-2018** "Innovative orexinergic agonists for narcolepsy therapy" funded by AIN Italian Narcolepsy Association

**2018** “Agonisti orexinergici sintetici fusi con la proteina virale TAT come terapia proteica innovativa della narcolessia di tipo I”, financed by Almaidea

**2018** Clinical validation of nanostructured devices for the analysis of immune cells in pediatric patients (IntegrAL), funded by Del Monte Foundation.

### **Other qualifying activities**

**2009** Collaboration with Stepbio Srl for the “Development of automated procedures for the synthesis of peptides”

**2016** Member of the organizing committee of the International Congress: "BolognaPeptides2016 - Synthesis and biomedical applications of tumor-targeting peptidomimetics", 14-16 February 2016, Bologna.

**2017** Member of Editorial Board of the Journal of Biochemistry and Chemical Sciences

**2017** Member of Editorial Board of the Journal of Medicinal Chemistry and Drug Discovery

**2018** Member of the organizing committee of the International Congress: "RiminiPeptides2018 - Peptides and conjugates for tumor targeting, therapy and diagnosis". 16-19 June 2018, Rimini

**Member** of the Italian Chemistry Society (SCI)

**Member** of the European Peptide Society (EPS)

**Member** of the Italian Peptide Society (ItPS)

### **Research activity**

RDM is the author of 44 printed papers on journals with IF, reviews included. Initially, her research was dedicated to the asymmetric synthesis of amino acids, and their introduction into biologically active peptide and mimetics, in particular opioid peptides and integrin inhibitors. In the last years, she started studying small-size heterocycles, such as oxazolidinones, imidazolidinones, lactams, macrolactams, etc. for the preparation of conformationally defined scaffolds in medicinal chemistry. More recently, she started studying of new nanomaterials for diagnostic and drug delivery.

### **Technical expertise**

She is extremely skilled in a wide range of organic reactions and procedures, preparation of nanoparticles/nanomaterials. She is competent with instruments for the identification and analysis of organic compounds and nanomaterials: mono and 2D-dimensional NMR, MW-Synthesis, Solid Phase Peptide Synthesis (SPPS), LC-MS, chiral HPLC, preparative HPLC, FT-IR, GC-MS, Zeta Potential, DLS, fluorescence microscopy, protein separation gel acrylamide, MTT assay. She is competent with all word-processing software (Word, Openword), presentation tools (Powerpoint), bibliographic databases (Scifinder, Beilstein, Endnote, Reaxys, WOS, Scopus).

### **Teaching activities**

**2009-2012** Member of the group "Knowing Chemistry", that holds demonstrative lessons of Chemistry to both high school students and adults, in the aim of orienting young audience toward scientific studies and improving the knowledge about scientific topics in adult audience.

**2009, 2012, and 2013-2016**, Tutorship for the "Laboratory of Chemistry" practices of the Biotechnology students.

**2011-2013** Tutorship for the "Laboratory of Organic Chemistry" practices of the Chemistry students.

**2015-2017** Seminars on the synthesis of peptides for chemistry students

**2015-2017** Seminars on the synthesis of peptides for biotechnology students

Supervisor of 28 degree thesis from 2011 at today

## Publications

1. Gentilucci, L.; Squassabia, F.; De Marco, R.; Artali, R.; Cardillo, G.; Tolomelli, A.; Spampinato, S.; Bedini, A. Investigation of the interaction between the atypical agonist c[YpwFG] and MOR. *FEBS Journal*, **2008**, *275*, 2315. doi: 10.1111/j.1742-4658.2008.06386.x. I.F. 4.739
2. Gentilucci, L.; Cardillo, G.; Tolomelli, A.; De Marco, R.; Garelli, A.; Spampinato, S.; Spartà, A.; Juaristi, E. Synthesis and Conformational Analysis of Cyclotrapeptide Mimetic beta-Turn Templates and Validation as 3D Scaffolds. *Chem. Med. Chem.*, **2009**, *4*, 517-23. doi: 10.1002/cmdc.200800407. I.F. 3.016
3. Gentilucci, L.; Cardillo, G.; Tolomelli, A.; Squassabia, F.; De Marco, R.; Chiriano, G. Cyclopeptide analogs for generating new molecular and 3D diversity. *Comb Chem High Throughput Screen* **2009**, *12*, 929-39. DOI: 10.2174/138620709789824754. I.F. 1.503
4. Gentilucci, L.; Cardillo, G.; Spampinato, S.; Tolomelli, A.; Squassabia, F.; De Marco, R.; Bedini, A.; Baiula, M.; Belvisi, L.; Civera, M. Antiangiogenic effect of dual/selective alpha(5)beta(1)/alpha(v)beta(3) integrin antagonists designed on partially modified retro-inverso cyclotrapeptide mimetics. *J Med Chem* **2010**, *1*, 106-18. DOI:10.1021/jm9013532. I.F. 6.054
5. Gentilucci, L.; Cerisoli, L.; De Marco, R.; Tolomelli, A. A simple route towards peptide analogues containing substituted (S)- or (R)-tryptophans. *Tetrahedron Letters* **2010**, *51*, 2576-79. DOI: <https://doi.org/10.1016/j.tetlet.2010.03.017>. I.F. 2.379
6. Bedini, A.; Baiula, M.; Gentilucci, L.; Tolomelli, A.; De Marco, R.; Spampinato, S. Peripheral antinociceptive effects of the cyclic endomorphin-1 analogue c[YpwFG] in a mouse visceral pain model. *Peptides* **2010**, *31*, 2135-2140. DOI: 10.1016/j.peptides.2010.08.005. I.F. 2.618
7. Gentilucci, L.; De Marco, R.; Cerisoli, L. Chemical Modifications Designed to Improve Peptide Stability: incorporation of Non-Natural Amino Acids, Pseudo-Peptide Bonds, and Cyclization. *Curr Pharm Des* **2010**, *16*, 3185-3203. DOI : 10.2174/138161210793292555. I.F. 2.412
8. L. Gentilucci, A. Tolomelli, R. De Marco, S. Spampinato, A. Bedini, and R. Artali. The Inverse Type II b-Turn on D-Trp-Phe, a Pharmacophoric Motif for MOR Agonists. *Chem. Med. Chem.* **2011**, *9*, 1640-53 doi: 10.1002/cmdc.201100169. I.F. 3.016
9. L. Gentilucci, A. Tolomelli, R. De Marco, C. Tomasini, and S. Feddersen, Synthesis of Constrained Peptidomimetics Containing 2-Oxo-1,3-oxazolidine-4-Carboxylic Acid. *Eur. JOC* **2011**, *25(11)*, 4925-30 doi: <https://doi.org/10.1002/ejoc.201100346>. I.F. 3.029
10. L. Gentilucci, R. De Marco, A. Tolomelli, S. Feddersen, S. Spampinato, A. Bedini, R. Artali. A novel family of minimalist opioid peptides deprived of the classic pharmacophores. *Pharmacological Reports*, **2011**, *63*, 212.
11. R. De Marco, L. Gentilucci, A. Tolomelli, S. Feddersen, S. Spampinato, A. Bedini, R. Artali. Design and synthesis of opioid peptide analogues and mimetics. *Pharmacological Reports*, **2011**, *63*, 223.

12. R. De Marco, A. Tolomelli, M. Campitiello, P. Rubini, L. Gentilucci. Expedient Synthesis of Pseudo-Pro-Containing Peptides: Towards Constrained Peptidomimetics and Foldamers. *Org. Biom. Chem.* **2012**, *10*, 2307-2317 DOI: 10.1039/C2OB07172J. I.F. 3.564
13. L. Gentilucci, A. Tolomelli, R. Artali, R. De Marco. Molecular docking of opioid peptides and analogues, a powerful tool for the design of selective agonists and antagonists, and for the investigation of atypical ligand-receptor interactions. *Curr. Med. Chem.* **2012**, *19*, 1587-1601 DOI : 10.2174/092986712799945030. I.F. 3.469
14. D. Fabbri, A. Adamiano, G. Falini, R. De Marco, I. Mancini. Analytical pyrolysis of dipeptides containing proline and amino acids with polar side chains. Novel 2,5-diketopiperazine markers in the pyrolysates of proteins. *J. Anal. Appl. Pyrolysis.* **2012**, *95*, 145-155 DOI: 10.1016/j.jaap.2012.02.001. I.F. 4.248
15. R. De Marco, A. Tolomelli, A. Bedini, S. Spampinato, L. Gentilucci. Opioid activity profiles of di- and tripeptides lacking of a protonable N-terminus. *J. Med. Chem.* **2012**, *55(22)*, 10292-10296 OI: 10.1021/jm301213s. I.F. 6.054
16. R. De Marco, A. Greco, S. Rupiani, A. Tolomelli, C. Tomasini, S. Pieraccini, L. Gentilucci. In-peptide synthesis of di-oxazolidinone and dehydroamino acid -oxazolidinone motifs as  $\beta$ -turn inducers. *Org. Biom. Chem* **2013**, *11*, 4316-4326. DOI: 10.1039/C3OB40357B. I.F. 3.564
17. R. De Marco, A. Tolomelli, A. Greco, L. Gentilucci. Controlled solid phase peptide synthesis using N-Carboxyanhydrides and PEG resins in water. *Sustainable Chemistry & Engineering* **2013**, *11*, 4273-4420 DOI: DOI: 10.1021/sc400058r **Corresponding author.** I.F. 6.97
18. R. De Marco, A. Greco, L. Gentilucci. Preparazione di peptidi biologicamente attivi in condizioni ecocompatibili ed elevata atom-economy. *LAB* **2013**, *7*, 32-33. **Corresponding author**
19. S. D. Dattoli, R. De Marco, M. Baiula, S. Spampinato, A. Greco, A. Tolomelli, L. Gentilucci. Synthesis and assay of retro- $\alpha$ 4 $\beta$ 1 integrin-targeting motifs *Eur. J. Med. Chem.* **2014**, *73*, 225-232 doi: <https://doi.org/10.1016/j.ejmech.2013.12.009> **Corresponding author.** I.F. 4.816
20. R. De Marco, S. Spampinato, A. Bedini, L. Gentilucci. Synthesis of Tripeptides Containing D-Trp Substituted at the Indole Ring, Assessment of Opioid Receptor Binding and in Vivo Central Antinociception. *J. Med. Chem.* **2014**, *57*, 6861-6866 DOI: 10.1021/jm5002925. I.F. 6.054
21. A. Greco, S. Tani, R. De Marco, L. Gentilucci. Synthesis and Analysis of the Folding Properties of 5-Aminomethyloxazolidine-2,4-dione Scaffolds as  $\beta^2$ -Homo-Friedinger Lactam Analogs. *Chem. Eur. J.* **2014**, *20*, 13390-13404 doi: <https://doi.org/10.1002/chem.201402519> **Corresponding author.** I.F. 5.16
22. R. De Marco, L. Cavina, A. Greco, L. Gentilucci. One-step preparation of dehydroalanine equipped with a chiral auxiliary, and application to the stereoselective synthesis of substituted D-Tryptophans. *Amino Acids* **2014**, *46*, 2823-2839 DOI: 10.1007/s00726-014-1839-3 **Corresponding author.** I.F. 2.520
23. A. Greco, R. De Marco, S. Tani, D. Giacomini, P. Galletti, A. Tolomelli, E. Juaristi, L. Gentilucci. Convenient synthesis of the antibiotic linezolid *via* a unprecedented oxazolidine-2,4-dione intermediate derived from the chiral building block *isoserine*. *Eur. JOC* . **2014**, 7614-7620 DOI: 10.1002/ejoc.201402888 **Corresponding author.** I.F. 3.029

24. J. Piekialna, L. Gentilucci, R. De Marco, R. Perlikowska, A. Adamska, J. Olczak, M. Mazur, R. Artali, J. Modranka, T. Janecki, C. Tömböly, A. Janecka. Cyclic side-chain-linked opioid analogs utilizing cis- and trans-4-aminocyclohexyl-D-alanine. *Bioorg. Med. Chem.* **2014**, *22*, 6545-6551, DOI: 10.1016/j.bmc.2014.10.022. I.F. 2.802
25. R. De Marco, G. Ricci, S. Schinelli, L. De Cola, L. Prodi, L. Gentilucci. *AsthmaZoè*: Nanostructured materials for detention of markers of asthma and other correlated inflammatory diseases. *European Respiratory News* **2014**, *3*, 141-142.
26. R. De Marco, G. Mazzotti, A. Greco, S. D. Dattoli, M. Baiula, S. Spampinato, L. Gentilucci. 5-Aminomethylloxazolidin-2,4-dione Hybrid  $\alpha/\beta$ -dipeptide scaffolds as inductor of constrained conformations: applications to the synthesis of integrin antagonists. *Biopolymers: Peptide Science* **2015**, *104*(5), 636-649, doi: <https://doi.org/10.1002/bip.22704>. I.F. 2.248
27. A. Greco, R. De Marco, L. Maggini, L. De Cola, L. Gentilucci. Diagnostic Implementation of Fast and Selective Integrin-Mediated Adhesion of Cancer Cells on Functionalized Zeolite L Monolayers. *Bioconjugate Chem.*, **2015**, *26*, 1873-1878, DOI: 10.1021/acs.bioconjchem.5b00350. I.F. 4.349
28. R. De Marco, A. Janecka. Strategies to improve bioavailability and in vivo efficacy of the endogenous opioid peptides Endomorphin-1 and Endomorphin-2. *Curr. Top. Med. Chem.* **2016**, *16*(2), 141-155, doi: 10.2174/1568026615666150817103635 invited, **Corresponding author**. I.F. 3.442
29. R. De Marco; E. Juaristi, A. Tolomelli, L. Gentilucci. Integrin Ligands with Hybrid  $\alpha/\beta$ -Peptide Structure: Bioactivity, Stability, and Conformational Aspects. *Medicinal Research Reviews* **2016**, *36*(3), 389-424 doi: <https://doi.org/10.1002/med.21383>. I.F. 9.791
30. R. De Marco, A. Greco, G. Mazzotti, L. Gentilucci. Heterocyclic Scaffolds in the Design of Peptidomimetic Integrin Ligands: Synthetic Strategies, Structural Aspects, and Biological Activity. *Curr. Top. Med. Chem.* **2016**, *16*(3), 346-359, DOI: 10.2174/1568026615666150812121614 **Invited**. I.F. 3.442
31. R. Perlikowska, J. Piekialna, L. Gentilucci, R. De Marco, M. C. Cerlesi, G. Calo, R. Artali, C. Tomboly, A. Kluczyk, A. Janecka. Synthesis of mixed MOR/KOR efficacy cyclic opioid peptide analogs with antinociceptive activity after systemic administration *Eur. J. Med. Chem.* **2016**, *109*, 276-286, DOI: 10.1016/j.ejmech.2015.12.012. I.F. 4.833
32. R. De Marco, A. Bedini, S. Spampinato, L. Gentilucci. Versatile Picklocks To Access All Opioid Receptors: Tuning the Selectivity and Functional Profile of the Cyclotetrapeptide c[Phe-d-Pro-Phe-Trp] (CJ-15,208) *J. Med. Chem.* **2016**, *59*, 9255-9261, DOI: 10.1021/acs.jmedchem.6b00420. I.F. 6.054
33. L. Gentilucci, F. Gallo, F. Meloni, M. Mastandrea, B. Del Secco, and R. De Marco. Controlling Cyclopeptide Backbone Conformation with  $\beta/\alpha$ -Hybrid Peptide-Heterocycle Scaffolds. *Eur. JOC.* **2016**, *19*, 3243-3251, doi: <https://doi.org/10.1002/ejoc.201600448> **Corresponding author**. I.F. 3.029
34. J. Piekialna, R. De Marco, L. Gentilucci, M. C. Cerlesi, G. Calo', C. Tomboly, R. Artali, A. Janecka. Redoubling the ring size of an Endomorphin-2 analog transforms a centrally acting mu-opioid receptor agonist into a pure peripheral analgesic. *Peptide Science* **2016**, *106*(3), 309-317, doi: <https://doi.org/10.1002/bip.22846>. I.F. 2.081

35. L. Gentilucci, P. Tosi, A. Bauer, R. De Marco. Modern tools for the chemical ligation and synthesis of modified peptides and proteins. *Future Medicinal Chemistry*. **2016**, 8, (18), 2287-2304, DOI: 10.4155/fmc-2016-0175 **Corresponding author**. I.F. 3.617
36. A. Adamska-Bartłomieczyk, R. De Marco, L. Gentilucci, A. Kluczyk, A. Janecka. Design and characterization of opioid ligands based on cycle-in-macrocyclic scaffold. *Bioorg. Med. Chem.* **2017**, 25(8), 2399-2405, doi: 10.1016/j.bmc.2017.02.057. I.F. 2.793
37. R. De Marco, L. Gentilucci. Tryptophan-Containing Non-Cationizable Opioid Peptides—A new Chemotype with Unusual Structure and In vivo Activity. *Future Medicinal Chemistry* **2017**, 9, (17), 2099-2115, doi: <https://doi.org/10.4155/fmc-2017-0104> **Invited, Corresponding author**. I.F. 3.617
38. R. De Marco. A brief survey on recent endomorphin-1 and endomorphin-2 analogues. *J. Biochem. Chem. Sci.* **2017**, 1, 14-23, doi: <https://doi.org/10.29199/BCCS.101012>. **Invited, Corresponding author**
39. R. De Marco, A. Greco, N. Calonghi, F. Cipriani, M. Anselmi, S.D. Deianira, M. Baiula, S. Spampinato, L. De Cola, L. Gentilucci. Selective detection of  $\alpha 4\beta 1$  integrin (VLA-4)-expressing cells using peptide-functionalized nanostructured materials mimicking endothelial surfaces adjacent to inflammatory sites. *Peptide Science* **2017**, e23081-e23091, doi: 10.1002/bip.23081. I.F. 2.081
40. S. D. Dattoli, M. Baiula, R. De Marco, A. Bedini, M. Anselmi, L. Gentilucci, and S. Spampinato. DS-70, a novel and potent  $\alpha 4$  integrin antagonist, is an effective treatment for experimental allergic conjunctivitis in guinea pigs. *British Journal of Pharmacology* **2018**, 175(20), 3891-3910, doi: 10.1111/bph.14458. I.F. 6.583
41. R. De Marco, A. Bedini, S. Spampinato, L. Comellini, J. Zhao, R. Artali, and L. Gentilucci. Constraining endomorphin-1 structure by  $\beta, \alpha$ -hybrid dipeptide/heterocycle scaffolds: identification of a novel  $\kappa$ -opioid receptor selective agonist. *J. Med. Chem.* **2018**, 61, 5751-5757, doi: 10.1021/acs.jmedchem.8b00296. I.F. 6.054
42. R. De Marco, A. Greco, S. Ioannone, J. Zhao, L. Gentilucci. In-peptide synthesis of imidazolidin-2-one scaffolds, equippable with proteinogenic or taggable/linkable side chains, general promoters of unusual secondary structures. *Journal of Organic Chemistry* **2019**, 84(9), 4992-5004, DOI: 10.1021/acs.joc.8b03055. I.F. 4.845
43. A. Montealleh, R. De Marco, N. S. Kehr. Stimuli-responsive Local Drug Molecule Delivery to Adhered Cells in 3D Nanocomposite Scaffold. *Journal of Materials Chemistry B* **2019**, 7, 3716-3723, DOI: 10.1039/C9TB00591A. I.F. 5.047
44. A. Bedini, L. Di Cesare Mannelli, L. Micheli, M. Baiula, G. Vaca, R. De Marco, L. Gentilucci, C. Ghelardini, S. Spampinato. Functional Selectivity and Antinociceptive Effects of a Novel KOPr Agonist. *Frontiers in Pharmacology* **2020**, 11, 188-210, DOI: 10.3389/fphar.2020.00188. I. F. 3.845

45. R. De Marco, E. Rampazzo, J. Zhao, L. Prodi, M. Paolillo, P. Picchetti, F. Gallo, N. Calonghi, L. Gentilucci. Integrin-Targeting Dye-Doped PEG-Shell/Silica-Core Nanoparticles Mimicking the Proapoptotic Smac/DIABLO Protein. *Nanomaterials* **2020**, 10(6), 1211. doi.org/10.3390/nano10061211 I.F. 4.324



**Congress participation: Poster (P) presentation, oral (O) presentation**

**2009 P.** New Perspectives in Medicinal Chemistry, III meeting-workshop. Title: "DEVELOPMENT AND CHARACTERIZATION OF ENDOMORPHIN-1 ANALOGUES AS NOVEL POTENTIAL ANALGESIC DRUGS", Castelvechio Pascoli (LU), Italy.

**2009 P.** "Tenth Tetrahedron Symposium". Title: "Tryptophan- and halotryptophan-based opioid peptidomimetics: a new paradigm in the design of atypical analgesics", June 23<sup>rd</sup>-26<sup>th</sup> 2009, Paris, France. **First author. Fellowship Travel Grant.**

**2009 P.** SIGMA ALDRICH YOUNG CHEMISTS SYMPOSIUM - SAYCS. Title: "Synthesis of Dipeptides Containing modified Trp by 1,4-Addition of Indoles Promoted by Lewis Acids", Pesaro, Italy.

**2009 P.** Meeting of the Società Chimica Italiana (SCI), Title: "Peptidomimetici oppioidi basati sul Triptofano e alogeno-triptofano: un nuovo modello di analgesici atipici". Bologna, Italy. **First author**

**2010 P.** "International Narcotics Research Conference"(INRC) Title: "Ac-D-Trp-PheNH<sub>2</sub> and Ac-D-Trp-Phe-GlyNH<sub>2</sub> a new class of unusual opioid peptides", July 11<sup>th</sup>-16<sup>th</sup> 2009, Malmo, Sweden. **First author. Fellowship Travel Grant.**

**2011 P.** Italian show 5 per thousand, Title: "NUOVI OPPIOIDI PER IL TRATTAMENTO DEL DOLORE ACUTO E CRONICO", May 9<sup>th</sup>-18<sup>th</sup> 2011, Bologna, Italy. **First author**

**2011 P.** "European Opioid Conference" (EOC) Title: "DESIGN AND SYNTHESIS OF OPIOID PEPTIDE ANALOGUES AND MIMETICS", April 13<sup>th</sup>-15<sup>th</sup> 2011, Krakow, Poland. **First author. Fellowship Travel Grant.**

**2011 P.** Società Farmacologia Italiana (SFI) Title: " NOVEL ANTAGONIST OF  $\alpha_V\beta_3$  AND  $\alpha_5\beta_1$  INTEGRINS: ATTRACTIVE TARGETS FOR CANCER AND ANTI-INFLAMMATORY THERAPEUTICS", Bologna, Italy.

**2012 P.** Nuove Prospettive in Chimica Farmaceutica 6 (NPCF6) "Peptidomimetic probes for modulating  $\alpha_4\beta_1$  integrin activity", April 15<sup>th</sup>-17<sup>th</sup> 2012, Riccione, Italy.

**2012 O.** Nuove Prospettive in Chimica Farmaceutica 6 (NPCF6) "A new generation of opioid peptidomimetics acting as central and/or peripheral analgesics", April 15<sup>th</sup>-17<sup>th</sup> 2012, Riccione, Italy. **first author**

**2012 O.** XXXIV Congresso Nazionale della Divisione di Chimica Organica (SCI). "One-step synthesis of constrained peptidomimetics including oxazolidinones and/or  $\Delta$ -amino acids, and application to the design of bioactive compounds", September 10<sup>th</sup>-14<sup>th</sup> 2012, Pavia, Italy. **First author.**

**2012 P.** SIGMA ALDRICH YOUNG CHEMISTS SYMPOSIUM - SAYCS. " $\beta$ -AMINOACIDSCAFFOLDS FOR THE SYNTHESIS OF  $\alpha_4\beta_1$ -INTEGRIN ANTAGONISTS", October 1<sup>st</sup>-3<sup>rd</sup> 2012, Riccione, Italy. **First author**

**2012 P.** SIGMA ALDRICH YOUNG CHEMISTS SYMPOSIUM - SAYCS. "IN-PEPTIDE SYNTHESIS AND APPLICATION OF Oxd AND  $\Delta$ -AMINOACIDS", October 1<sup>st</sup>-3<sup>rd</sup> 2012, Riccione, Italy.

**2012 P.** Zing Peptide Conference, "CJ-15,208 and c[YpwFG]: same Pharmacophore but Distinct Interactions with the Opioid Receptors?", November 03<sup>rd</sup>-06<sup>th</sup> 2012, Xaret, Mexico, **first author**

**2013 O.** "European Opioid Conference" (EOC), "Opioid Activity Profiles of Peptides Containing Overlapping Portions of CJ-15,208 and CycloEM, and Identification of the Bioactive Conformations". April 10<sup>th</sup>-12<sup>th</sup> 2013, Guilford, U.K. first author. **Fellowship Travel Grant.**

**2013 P.** "5<sup>th</sup> European Conference on Chemistry for Life Sciences" "One-step preparation of dehydroAla equipped with an oxazolidinone chiral auxiliary; application to the stereoselective F.C. alkylation of Indoles, and synthesis of substituted Tryptophans", June 10<sup>th</sup>-12<sup>th</sup> 2013, Barcellona, Spain. **First author.**

**2013 P.** "5<sup>th</sup> European Conference on Chemistry for Life Sciences" "SYNTHESIS OF A NEW FAMILY OF CONFORMATIONALLY RESTRICTED PEPTIDOMIMETICS AS FUNCTIONALIZABLE HOMO FREIDINGER LACTAMS", June 10<sup>th</sup>-12<sup>th</sup> 2013, Barcellona, Spain.

**2013 O.** SIGMA ALDRICH YOUNG CHEMISTS SYMPOSIUM - SAYCS. "SYNTHESIS OF PEPTIDES CONTAINING MODIFIED D-TRYPTOPHANS AND ASSESMENT OF OPIOID RECEPTOR AFFINITY AND ANALGESIC EFFICACY", October 28<sup>th</sup>-30<sup>th</sup> 2013, Riccione, Italy. **First author**

**2013 O.** SIGMA ALDRICH YOUNG CHEMISTS SYMPOSIUM - SAYCS. "Synthesis of heterocyclic scaffolds derived from  $\beta^2$ -aminoacids and applications: conformationally constrained peptidomimetics and Linezolid analogues", October 28<sup>th</sup>-30<sup>th</sup> 2013, Riccione, Italy.

**2013 P.** International conference on green chemistry and biobased economy "Green chemistry, a first step towards bioeconomy", "Solid phase peptide synthesis in water: PEG resins and NCAs under MW conditions", November 27<sup>th</sup> 2013, Bologna, Italy.

**2014 O.** 14<sup>th</sup> Anglo-Italian Meeting on Heterocyclic Chemistry. "Synthesis of  $\beta^2$ - and  $\beta^{2,2}$ -*homo*-Freidinger Lactam analogs, conformational analysis, and applications in Medicinal Chemistry", June 29<sup>th</sup> - July 01<sup>st</sup> 2014, Windsor, London, UK. **First author.**

**2014 P.** Ischia Advanced School of Organic Chemistry-IASOC. "Peptidomimetic functionalized self-assembled monolayers of zeolite nanocrystals as models for biocompatible surfaces", September 21<sup>st</sup>-25<sup>th</sup> 2014, Ischia, Italy

**2014 P.** 1<sup>st</sup> Peptide & Protein Chemistry & Biology, PIPS. "Hybrid  $\alpha/\beta$ -dipeptide scaffolds as inductors of constrained conformations", October 05<sup>th</sup>-08<sup>th</sup> 2014, Paris. France. **First author.**

**2014 P.** SIGMA ALDRICH YOUNG CHEMISTS SYMPOSIUM-SAYCS. RGD-functionalized silica-core/surfactant-shell nanoparticles for cancer imaging and therapy. October 27<sup>th</sup>-29<sup>th</sup> 2014, Riccione, Italy.

**2015 O.** XXXVII Congresso Nazionale della Divisione di Chimica Organica (SCI). "Lipophilicity efficiency is a new paradigm for balancing receptor affinity and in vivo antinociceptive efficacy of opioid peptides", September 13<sup>th</sup>-17<sup>th</sup> 2015, Bologna. **First author.**

**2015 O.** SIGMA ALDRICH YOUNG CHEMISTS SYMPOSIUM-SAYCS. "Tuning the activity profiles of the naturally occurring peptide K-opioid receptor ligand CJ-15,208". October 27<sup>th</sup>-29<sup>th</sup> 2015, Rimini, Italy. **First author.**

**2017. P.** 4<sup>th</sup> Young Medicinal Chemistry Symposium (YMCS). A New  $\kappa$ -Opioid Receptor Agonist: Endomorphin-1 Analogues with Incorporated Hybrid  $\beta,\alpha$ - Heterocycle Scaffold. August 31<sup>th</sup> -September

01<sup>st</sup> 2017, Vienna, Austria. **First author**

**2017. O.** 2<sup>nd</sup> International Caparica Christmas Congress on Translational Chemistry IC3TC. Small Molecule-Peptide Hybrids as Leads for the Discovery of New Drugs. December 4<sup>th</sup>-7<sup>th</sup> 2017 Caparica, Portugal. **First author, invited**

**2018. P.** Forschung der Chemischen Industrie. Small hybrid peptides as potential drugs for inflammatory diseases. May 17<sup>th</sup> 2018 Münster, Germany. **First author**

**2018. O.** XXXVIII Congresso Nazionale della Divisione di Chimica Organica (SCI). "c[RGDfK] and MPUPA-LDV-diamine for the functionalization the 3<sup>th</sup> generation of devices for diagnosis of several disease". September 9<sup>th</sup>-15<sup>th</sup> 2018 Milan, Italy. **First author, participate grant.**

**2019. P.** 50<sup>th</sup> "International Narcotics Research Conference"(INRC). Tryptophan-containing non-cationizable opioid peptides derived from CJ-15,208: from dual KOR/MOR affinity profile to selective interactions for MOR, DOR, or KOR. July 7<sup>th</sup>-11<sup>th</sup> 2019, New York, USA. **First author**