Severo Salvadori

Professor of Medicinal Chemistry

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Education

1972 Doctor in Pharmacy, University of Ferrara
1973 Assistant Research Scientist, Institute of Pharmaceutical Chemistry, University of Ferrara
1975 Assistant Professor, Department of Pharmaceutical Sciences, University of Ferrara
1983 Associate Professor, Department of Pharmaceutical Sciences, University of Ferrara
1994 Professor, Department of Pharmaceutical Sciences, University of Ferrara

Position Title

Professor of Medicinal Chemistry
From 1994 to 2003 Head of the courses degree in Pharmacy and Pharmaceutical Chemistry
From 2003 to 2008 Head of a Department of Pharmaceutical Sciences, University of Ferrara
From 2008 to 2012 Dean, Faculty of Phramacy, University of Ferrara
From 2012 Head of a Department of Chemical and Pharmaceutical Sciences, University of Ferrara

Collaborations

P.A. Temussi, Professor of Chemistry, University of Naples Federico II. Conformation of peptides and proteins.
D. Regoli, Professor of Pharmacology, University of Ferarra. Pharmacological characterization of GPCRs ligands.
L.H. Lazarus, Ph.D., Peptide Neurochemistry, LCBRA, NC-USA. Receptor ligands interactions.
Yoshio Okada, Professor of Medicinal Chemistry, High Tecnology Research Center, Kobe Gakuin University, Japan. Design of peptidomimetics.

Research activity, grants and meetings

Current research interests:

- Solution and solid phase peptide synthesis
- Design and synthesis of peptidomimetics
- Design and synthesis of GPCR's ligands

Severo Salvadori published many original papers in peer review jornals focused on the design and synthesis of peptide/peptidomimetic ligands of GPCRs in particular in the fields of opioids, nociceptin/orphanin FQ, urotensin II and, more recently, neuropeptide S (NPS).
Several of these papers, particularly in the field of nociceptin/orphanin FQ, have been highly quoted placing them in the top 1% within their field: according to essential science indicators this demonstrated that the work summarized in those papers was highly influential and made a significant

impact among scientists working in the field.
Severo Salvadori is also author of 10 patents on ligands for GPCRs and novel therapeutic indications for such ligands.

Since 1999 Salvadori received research grants from different institutions at local (University of Ferrara, 60% grant from 1999 to 2008) and National (Cofin 1999, 2002, 2004).

Severo Salvadori has been invited to give oral presentations at the following scientific meetings:
1984 XV Congresso Nazionale della SCI, 17-21 Settembre 1984, Grado, Italy
1985 VII Konferencja Chemii Aminokwasow I Peptydow, 7-10 Ottobre 1985, Gdansk, Poland
1986 VI Congresso Nazionale di Chimica Farmaceutica, 14-18 Ottobre 1986, Alghero, Italy
1987 French-Italian Joint Meeting on Medicinal Chemistry, 22-26 Settembre 1987, Pisa, Italy
1992 Third Naples Workshop on Bioactive peptides, 24-27 Maggio 1992, Capri, Italy
2002 Annual Conference on Opioid Mimetic Analgesics 2001, Kobe Gakuin University, Kobe, Japan, 18-19 March 2002
2004 XVII Convegno Nazionale della Divisione di Chimica Farmaceutica della Società Chimica Italiana, Pisa, 6-10 Settembre 2004
2006 XXII Congresso Nazionale della Società Chimica Italiana, Firenze, 10-15 Settembre 2006
2008 The XIII Meeting on "Heterocyclic Structures in Medicinal Chemistry" University of Palermo, Mondello, Italy, May 18-21, 2008
2008 European Network of Doctoral Studies in Pharmaceutical Sciences, 5th Annual Meeting, Milan, November 17-19th 2008

Publications

PC1, a non-peptide PKR1-preferring antagonist, reduces pain behaviorand spinal neuronal sensitization in neuropathic mice
F. Guida, R. Lattanzi, S. Boccella, S. Maftei, R. Romano, R. Marconi, R. Balboni, S. Salvadori, M.A. Scafuro, V. de Novellis, L. Negri, S. Maione, L. Luongo
P_h_a_r_m_a_c_o_l_o_g_i_c_a_l_ _R_e_s_e_a_r_c_h_ _x_x_x_ _(_2_0_1_4_)_ _x_x_x_–x_x_x_ _

Prokineticin 2 upregulation in the peripheral nervous system has a major role in triggering and maintaining neuropathic pain in the chronic constriction injury model.
Roberta Lattanzi, Daniela Maftei, Veronica Marconi, Fulvio Florenzano, Silvia Franchi, Elisa Borsani, Luigi Fabrizio Rodella, Gianfranco Balboni, Severo Salvadori, Paola Sacerdote and L. Negri.
BioMed Research International, 2014

N-Carbamidoyl-4-((3-ethyl-2,4,4-trimethylcyclohexyl)methyl)benzamide Enhances Staurosporine Cytotoxic Effects Likely Inhibiting the Protective Action of Magmas toward Cell Apoptosis.
Zatelli MC, Gagliano T, Pelà M, Bianco S, Bertolasi V, Tagliati F, Guerrini R, Degli Uberti E, Salvadori S, Trapella C.

J Med Chem. ***2014***, 57, 4606-14.

Pharmacological characterization of tachykinin tetrabranched derivatives.
Ruzza C, Rizzi A, Malfacini D, Cerlesi MC, Ferrari F, Marzola E, Ambrosio C, Gro C, Severo S, Costa T, Calo G, Guerrini R.
Br J Pharmacol. ***2014*** Apr 24. doi: 10.1111/bph.12727.

A new convenient synthetic method and preliminary pharmacological characterization of triazinediones as prokineticin receptor antagonists.
Congiu C, Onnis V, Deplano A, Salvadori S, Marconi V, Maftei D, Negri L, Lattanzi R, Balboni G.
Eur J Med Chem. **2014**, 334-340.

A novel and facile synthesis of tetra branched derivatives of nociceptin/orphanin FQ.
Guerrini R, Marzola E, Trapella C, Pela' M, Molinari S, Cerlesi MC, Malfacini D, Rizzi A, Salvadori S, Calo' G.
Bioorg Med Chem. **2014**, 345-9.

Optimization of peptides that target human thymidylate synthase to inhibit ovarian cancer cell growth.
Pela' M, Saxena P, Luciani R, Santucci M, Ferrari S, Marerti G, Marraccini C, Martello A, Pirondi S, Genovese F, Salvadori S, D'Arca D, Ponterini G, Costi MP, Guerrini R.
J Med Chem. **2014** 57, 1355-67.

Structural and biological exploration of phe(3)-phe(4)-modified endomorphin-2 peptidomimetics.
Lesma G, Salvadori S, Airaghi F, Murray TF, Recca T, Sacchetti A, Balboni G, Silvani A.
Med Chem Lett. ***2013***, 11, 795-9.

δ-Opioid receptor activation modified microRNA expression in the rat kidney under prolonged hypoxia.
He X, Yang Y, Zhi F, Moore ML, Kang X, Chao D, Wang R, Balboni G, Salvadori S, Kim DH, Xia Y.
PLoS One. ***2013***, 8, 61080.

Effect of δ-opioid receptor activation on BDNF-TrkB vs. TNF-α in the mouse cortex exposed to prolonged hypoxia.
Tian X, Hua F, Sandhu HK, Chao D, Balboni G, Salvadori S, He X, Xia Y.
Int J Mol Sci. ***2013***, 14, 15959-76.

Synthesis, pharmacological evaluation and conformational investigation of endomorphin-2 hybrid analogues.
Lesma G, Salvadori S, Airaghi F, Bojnik E, Borsodi A, Recca T, Sacchetti A, Balboni G, Silvani A.
Mol Divers. ***2013***, 17, 19-31.

[Dmt(1)]N/OFQ(1-13)-NH(2) , a potent nociceptin/orphanin FQ and opioid receptor universal agonist.
Br J Pharmacol. ***2013,*** 168, 151-62.
Molinari S, Camarda V, Rizzi A, Marzola G, Salvadori S, Marzola E, Molinari P, McDonald J, Ko

MC, Lambert DG, Calo' G, Guerrini R.

Hydrogen sulfide induced disruption of Na+ homeostasis in the cortex.
Toxicol Sci. ***2012***, 128, 198-208.
Chao D, He X, Yang Y, Balboni G, Salvadori S, Kim DH, Xia Y.

[tBu-D-Gly5]NPS, a pure and potent antagonist of the neuropeptide S receptor: in vitro and in vivo studies.
Peptides. ***2012***, 34, 404-11.
Ruzza C, Rizzi A, Camarda V, Pulga A, Marzola G, Filaferro M, Novi C, Ruggieri V, Marzola E, Vitale G, Salvadori S, Guerrini R, Calo' G

Opioid bifunctional ligands from morphine and the opioid pharmacophore Dmt-Tic.
*Eur J Med Chem. **2011**, 46, 799-803.*
Balboni G, Salvadori S, Marczak ED, Knapp BI, Bidlack JM, Lazarus LH, Peng X, Si YG, Neumeyer JL.

Prokineticin receptor 1 antagonist PC-10 as a biomarker for imaging inflammatory pain.
J Nucl Med. **2011**, 52, 600-7.
Jacobson O, Weiss ID, Niu G, Balboni G, Congiu C, Onnis V, Kiesewetter DO, Lattanzi R, Salvadori S, Chen X.

Synthesis and separation of the enantiomers of the neuropeptide S receptor antagonist (9R/S)-3-oxo-1,1-diphenyl-tetrahydro-oxazolo[3,4-a]pyrazine-7-carboxylic acid 4-fluoro-benzylamide (SHA 68).
*J Med Chem. **2011** 28, 2738-44.*
Trapella C, Pela M, Del Zoppo L, Calo G, Camarda V, Ruzza C, Cavazzini A, Costa V, Bertolasi V, Reinscheid RK, Salvadori S, Guerrini R.

The Effects of Neuropeptide S on General Anesthesia in Rats.
Anesth Analg. ***2011***, *112, 845-9*.
Kushikata T, Yoshida H, Kudo M, Salvadori S, Calo G, Hirota K.

UFP-112 a Potent and Long-Lasting Agonist Selective for the Nociceptin/Orphanin FQ Receptor.
*CNS Neurosci Ther. **2010**, 1755-5949.*
Calo' G, Rizzi A, Cifani C, Di Bonaventura MV, Regoli D, Massi M, Salvadori S, Lambert DG, Guerrini R.

Role of 2',6'-dimethyl-l-tyrosine (Dmt) in some opioid lead compounds.
*Bioorg Med Chem. **2010**, 18, 6024-30.*
Balboni G, Marzola E, Sasaki Y, Ambo A, Marczak ED, Lazarus LH, Salvadori S.

Neurobiology, pharmacology, and medicinal chemistry of neuropeptide S and its receptor.
*Med Res Rev. **2010**, 30, 751-77.*
Guerrini R, Salvadori S, Rizzi A, Regoli D, Calo' G.

Evolution of the Bifunctional Lead μ Agonist / δ Antagonist Containing the Dmt-Tic Opioid

Pharmacophore.
Chem Neurosci. ***2010****, 1, 155-164.*
Balboni G, Salvadori S, Trapella C, Knapp BI, Bidlack JM, Lazarus LH, Peng X, Neumeyer JL.

Further studies on the pharmacological profile of the neuropeptide S receptor antagonist SHA 68.
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Novel multiple opioid ligands based on 4-aminobenzazepinone (Aba), azepinoindole (Aia) and tetrahydroisoquinoline (Tic) scaffolds.
Bioorg Med Chem Lett. ***2010****, 20, 1610-3.*
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APMIS. ***2010****, 118, 674-80.*
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Mini Rev Med Chem. ***2009****, 9, 1429-38.*
Ferraro L, Tomasini MC, Beggiato S, Guerrini R, Salvadori S, Fuxe K, Calzà L, Tanganelli S, Antonelli T.

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Proc Natl Acad Sci U S A. ***2009****, 106, 14646-51.*
Giannini E, Lattanzi R, Nicotra A, Campese AF, Grazioli P, Screpanti I, Balboni G, Salvadori S, Sacerdote P, Negri L.

The novel delta opioid receptor agonist UFP-512 dually modulates motor activity in hemiparkinsonian rats via control of the nigro-thalamic pathway.
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Mabrouk OS, Marti M, Salvadori S, Morari M.

Orally administered H-Dmt-Tic-Lys-NH-CH2-Ph (MZ-2), a potent mu/delta-opioid receptor antagonist, regulates obese-related factors in mice.
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Structure-activity studies on the nociceptin/orphanin FQ receptor antagonist 1-benzyl-N-{3-[spiroisobenzofuran-1(3H),4'-piperidin-1-yl]propyl} pyrrolidine-2-carboxamide.
Bioorg Med Chem. ***2009****, 17, 5080-95*.
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Peptides. ***2009****, 30, 1130-6.*
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Cell Mol Life Sci. ***2009***, *66, 1105-15.*
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Mini Rev Med Chem. ***2009***, *9, 498-509.*
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Synthesis and Biological Activity of Human Neuropeptide S Analogues Modified in Position 5: Identification of Potent and Pure Neuropeptide S Receptor Antagonists.
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Structure-activity study at positions 3 and 4 of human neuropeptide S.
Bioorg. Med. Chem. ***2008****, 16, 8841-5.*
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