

CURRICULUM VITAE



Name: **Elisa PERONI**

Address: Laboratoire de Chimie Biologique – EA 4505, Université de Cergy-Pontoise, 5 mail Gay-Lussac, Neuville sur Oise, 95031 Cergy-Pontoise cedex associated with Interdepartmental Laboratory of Peptide & Protein Chemistry & Biology (PeptLab)

Nationality Italian

Place and date of birth: La Spezia (Italy) 02/06/1973

PROFESSIONAL CAREER

- Since 2009** Maître de Conférences *Laboratoire de Chimie Biologique – EA 4505 Université de Cergy-Pontoise.*
- 2006-2009** Post-doc fellowship in the context of a Collaborative Research Project with Harvard Medical School (Boston USA) entitled “Study of the role of sugars in the aetiology of multiple sclerosis” Dept. of Physics, University of Florence, Italy.
- 2005-2006** Post-doc fellowship on a research project based on synthesis of modified peptides as synthetic antigen in autoimmune diseases. University of Florence, Italy.
- 2001-2002** Scientific researcher. Development of biosensors for molecular recognition in environmental problem solving. Tec.Ele.Biomed, Cagliari, Italy

EDUCATION AND TRAINING

- 2002-2004** PhD in Chemistry. PhD thesis title: Combinatorial approach to develop the optimal glycosylated peptide as molecular probe to characterize autoantibodies in multiple sclerosis. Tutor: Prof. Anna Maria Papini. University of Florence, Italy.
- 2001** Fellowship. Drug delivery for lung cancer therapy under the supervision of Prof P.L. Luisi in collaboration with the Pharmaceutical Company Sigma–Tau. Institut für Polymere, Eidgenössische Technische Hochschule, ETH, Zurich, Switzerland
- 2000** Fellowship. Dispositivi Elettrocromici e Fotocromici in Superreticoli di Langmuir-Blodgett. Supervisor: Prof. P.Baglioni. Consorzio interuniversitario per lo sviluppo dei sistemi a grande interfase C.S.G.I (Center for colloid and surface science), University of Florence, Italy.
- 1999-2000** Fellowship. Synthesis of peptide dendrimers of pharmaceutical interest. Dept of Organic Chemistry, University of Florence, Italy.
- 1998-1999** Laurea Degree thesis title: Synthesis of lipopeptides of Myelin Basic Protein modified with fluorescent molecules for interaction studies with membrane models. Tutors Prof. A.M. Papini, (Dept of Organic Chemistry, University of Florence, Italy) and Prof. P. Baglioni (Dept. of Chemistry, University of Florence, Italy).

Organisation of courses and congresses

- 2014 member of the Organizing Committee of Peptides in Paris Symposium - PIPS 2014, and PIPS 2014 -Training Course, October 5-10, Paris (France)
- 2011 member of the Organizing Committee of Microwave-Assisted Organic and Peptide Synthesis Symposium-MAOPS, April 27-29, Florence (Italy)
- 2007 member of the Organizing Committee of Eurocombi4, Symposium, the first International Symposium on Combinatorial Sciences in Biology, Chemistry, Catalysts and Materials, Chioistro del Maglio, Firenze (Italy), 15-18 July, 2007.

Technology Transfer

- 2006 Responsible of the technology transfer of an immunodiagnostic test for Multiple Sclerosis (MSPepKit) from the University of Florence to IMMCO Diagnostics (USA)
- 2008 Responsible of the technology transfer of an immunodiagnostic test for Multiple Sclerosis (MSPepKit) from the University of Florence to DIESSE Diagnostica Senese S.p.A. (Italy).

PERSONAL SKILLS AND COMPETENCES

Fields of interest

Diagnostics. Biomarkers. Autoimmune diseases. Bioorganic chemistry of peptides Synthetic strategies of co- or post-translationally modified peptides. Glycoconjugates as diagnostic and prognostic tools for human diseases. Solid-phase peptide synthesis following the Fmoc/tBu strategy in batch and by continuous flow methods. Synthesis of modified peptides, in particular fluorescent lipopeptides and glycopetides, following the convergent and the building-block approach. Peptides purification by HPLC. Peptides characterization by MS-HPLC. Synthesis of immunodominant peptides for the identification of biomarkers relevant in Multiple Sclerosis follow up. Immuno-enzymatic test on solid phase and in solution (ELISA), development of new diagnostic tools for autoimmune diseases follow up. Biomolecular interaction (BIAcore T100, Surface acoustic Waves SamX Nanotemper) Cyclic voltammetry. Protein extraction and purification (AKTA), monodimensional electrophoresis, Western Blot, immunoenzymatic assays. Development of an immunoaffinity chromatography based on glycopeptide to purify autoantibodies from sera.

Preparation of liposomes (extrusion, Extruder, Lipex Biomembranes, an injection techniques) and their characterization. Absorption and emission spectroscopy. Fluorescence resonance energy transfer (FRET). Methodologies for the binding of molecules to liposomes (drug delivery). Preparation of films by Langmuir-Blodgett technique and determination of monolayer surface potential (KSV 5000).

Calorimetry (DSC TAC7 Perkin-Elmer; ITC 200, GE), Light-Scattering (Zeta Sizer-HS3000, Malvern).

Scientific contributions

29 peer reviewed publications (16 in journals of which 1 review, and 19 articles in books 36 communications at International Symposia (1 oral communications and 35 posters). Moreover she presented 2 invited lectures in International Symposia and Universities.

SCIENTIFIC PUBLICATIONS LIST (2002-2015)

2002

[1] E. Peroni, G. Caminati, P. Baglioni, F. Nuti, M. Chelli, and A.M. Papini. A New lipophilic fluorescent probe for interaction studies of bioactive lipopeptides with membrane models. *Bioorg. Med. Chem. Lett.* (2002) 12, 1731-1734.

2003

[2] D.Russo, P. Baglioni, **E. Peroni** and J. Teixeira. Hydration water dynamics of a completely hydrophobic oligopeptide. *Chem. Phys.* (2003) 292/2-3, 235-245.

2004

[3] G. Caminati, **E. Peroni**, A.M. Papini, and P. Baglioni. Photophysical investigation of lipopeptides of myelin basic protein in phospholipid vesicles. *Progress in Colloid & Polymer Science* (2004) 126, 163-168.

2005

[4] F. Lolli, B. Mulinacci, A. Carotenuto, B. Bonetti, G. Sabatino, B. Mazzanti, A.M. D'Ursi, E. Novellino, M. Pazzagli, L. Lovato, M.C. Alcaro, **E. Peroni**, M.C. Pozo-Carrero, F. Nuti, L. Battistini, G. Borsellino, M. Chelli, P. Rovero, and A.M. Papini. An N-glycosylated peptide detecting disease-specific autoantibodies, biomarkers of Multiple Sclerosis. *Proc. Natl. Acad. Sci., U.S.A.* (2005) 102(29), 10273-10278.

[5] F. Lolli, B. Mazzanti, M. Pazzagli, **E. Peroni**, M.C. Alcaro, R. Lanzillo, V. Brescia Morra, L. Santoro, C. Gasperini, S. Galgani, M.M. D'Elia, V. Zipoli, S. Sotgiu, M. Pugliatti, P. Rovero, M. Chelli, and A.M. Papini. The glycopeptide CSF114(Glc) detects serum antibodies in Multiple Sclerosis. *J. Neuroimmunol.* (2005) 167(1-2), 131-137.

2006

[6] F. Minutolo, S. Bertini, L. Betti, R. Danesi, G. Gervasi, G. Giannaccini, A. Martinelli, A.M. Papini, **E. Peroni**, G. Placanica, S. Rapposelli, T. Tuccinardi, and M. Macchia. Synthesis of stable analogues of geranylgeranyl Diphosphate possessing a (Z,E,E)-geranylgeranyl side chain, docking analysis, and biological assays for prenyl protein transferase inhibition. *Chem. Med. Chem.* (2006) 1, 218-224.

2008

[7] F Real-Fernández, A Colson, J Bayardon, F Nuti, **E Peroni**, R Meunier-Prest, F Lolli, M Chelli, C Darcel, S Jugé, AM Papini. Ferrocenyl glycopeptides as electrochemical probes to detect autoantibodies in multiple sclerosis patients' sera. *Biopolymers.* (2008) 90(4), 488-95.

[8] A Carotenuto, MC Alcaro, MR Saviello, **E Peroni**, F Nuti, AM Papini, E Novellino, P Rovero. Designed Glycopeptides with Different beta-Turn Types as Synthetic Probes for the Detection of Autoantibodies as Biomarkers of Multiple Sclerosis. *J Med Chem.* (2008) 51(17), 5304-9.

2010

[9] F Nuti, **E Peroni**, F Real-Fernández, MA Bonache, A Le Chevalier-Isaad, M Chelli, Lubin- N Germain, J Uziel, P Rovero, F Lolli, AM Papini. Posttranslationally modified peptides efficiently mimicking neoantigens: a challenge for theragnostics of autoimmune diseases. *Biopolymers.* (2010) 94(6),791-9.

2011

[10] F Gori, B Mulinacci, L Massai, C Avolio, M Caragnano, **E Peroni**, S Lori, M Chelli, AM Papini, P Rovero, F Lolli. IgG and IgM antibodies to the refolded MOG(1-125) extracellular domain in humans. *J Neuroimmunol.* (2011) 233(1-2), 216-20.

2012

[11] F Real-Fernández, I Passalacqua, **E Peroni**, M Chelli, F Lolli, A M Papini and P Rovero Glycopeptide-Based Antibody Detection in Multiple Sclerosis by Surface Plasmon Resonance. *Sensors* (2012), 12(5), 5596-5607

[12] Pandey S, Alcaro MC, Scrima M, **Peroni E**, Paolini I, Di Marino S, Barbetti F, Carotenuto A, Novellino E, Papini AM, D'Ursi AM, Rovero P. Designed glycopeptides mimetics of myelin protein epitopes as synthetic probes for the detection of autoantibodies, biomarkers of multiple sclerosis. *J Med Chem.* (2012), 55(23),10437-47

2013

[13] Pandey S., I. Dioni, D. Lambardi, F. Real-Fernandez, **E. Peroni**, G. Pacini, F. Lolli, R. Seraglia, A. Maria Papini, and P. Rovero. Alpha actinin is specifically recognized by multiple sclerosis autoantibodies isolated using an N-glycosylated peptide epitope MCP Papers in Press. *Mol.Cell.Proteomics.* (2013) 12(2), 277-282.

[14] J.-B. Chanson, I. Paolini, N. Collongues, M. C. Alcaro, F. Blanc, F. Barbetti, M. Fleury, **E. Peroni**, P. Rovero, G. Rudolf, F. Lolli, É. Trifilieff, A.-M. Papini, J. de Seze. Evaluation of new immunological targets in neuromyelitis optica *J Pep. Sci* (2013) 19(1), 25–32

2014

[15] N. Auberger, M. Di Pisa, M. Larregola, G. Chassaing, **E. Peroni**, S. Lavielle, A.M. Papini, O. Lequin, and J.M. Mallet. Glaser Oxidative Coupling on Peptides: Stabilization of β -Turn Structure via a 1,3-Butadiyne Constraint. *Bioorg.Med.Chem.* (2014) 22(24), 6924-6932.

2015

[16] C. Rentier, G. Pacini, F. Nuti, **E. Peroni**, P. Rovero, and A.M. Papini. Synthesis of diastereomerically pure lipoyl-lysine building-blocks for Fmoc/tBu solid phase synthesis of modified peptides designed for primary biliary cirrhosis diagnostics. *J.Pept.Sci.* (2015).