

PERSONAL INFORMATION

Marika Salvalaio



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WORK EXPERIENCE

01/04/2014–31/12/2016

Collaborator of the project

Pediatric Research Institute "Città della Speranza" - Laboratory of Diagnosis and Therapy of Lysosomal Disorders, Padova (Italy)

"Paediatric neurodegenerative disorders: preclinical evaluation of a nanoparticles-mediated brain therapy and identification of biomarkers of pathogenesis and treatment efficacy".

01/01/2014–31/03/2014

Scholarship holder

Molecular Medicine Department - University of Padova. Head: Dr. Enrico Moro, Padova (Italy)

"In vivo molecular characterization of cellular defects due to IDS dysfunction".

01/05/2012–31/10/2013

Research grant

Biomedical science - University of Padova. Head: Dr. Enrico Moro, Padova (Italy)

Identification of the pathogenic mechanisms responsible for bone changes in the mouse model and zebrafish for mucopolysaccharidosis II.

01/02/2011–30/04/2012

Staff Scientist

Laboratory of Diagnosis and Therapy of Lysosomal Disorders, University of Padova - Head: Dr. Maurizio Scarpa, Padova (Italy)

In vitro and in vivo assessment of nanoparticles for the delivery of macromolecules for the treatment of neurodegenerative metabolic diseases.

01/05/2011–31/05/2011

Occasional provision

Brains for Brain Foundation - Onlus, Pediatric Department - University of Padova. Head: Dr. Maurizio Scarpa, Padova (Italy)

Gene expression in the brain of the mouse model for the Mucopolysaccharidosis type II

04/11/2009–14/11/2009

PhD - Visitor scientist

Laboratory of Molecular Neurobiology, Institute of Biophysics, Biological research center. Responsabile: Dott.ssa Maria Deli, Szeged (Hungary)

Endothelial/pericyte cells and astrocytes isolation, blood brain barrier *in vitro* constitution, permeability and resistance analysis.

01/01/2009–31/10/2009

Co-tutor of Master degree

Laboratory of Diagnosis and Therapy of Lysosomal Disorders - University of Padova, Padova (Italy)

RNA-seq analysis of primary cells of Hunter Syndrome patients.

- 01/05/2007–31/12/2007 **Staff Scientist**
Gene Transfer Lab, Department of Biology, University of Padova. Head: Dr. Libero Vitiello, Padova (Italy)
The effects of macrophage factors in muscular sense development in a sub population of satellite cells for the therapy of Duchenne Muscular Distrophy (DMD).
- 01/10/2007–31/10/2007 **Occasional provision**
Padua Hospital to Gene Transfer Lab, Department of Biology, University of Padova, Padova (Italy)
Evaluation of new therapeutic approaches for DMD.
- 01/03/2007–31/12/2007 **Staff scientist**
Gene Therapy, Rare Disease Centre, Pediatric Department - University of Padova. Head: Dr. Maurizio Scarpa, Padova (Italy)
Therapeutic effects of genistein in Mucopolysaccharidosis type II mouse model.
- 01/11/2005–31/03/2007 **Master's degree internship**
Gene Therapy, Rare Disease Centre, Pediatric Department - University of Padova. Head: Dr. Maurizio Scarpa, Padova (Italy)
Evaluation *in vitro* and *in vivo* of the therapeutic effects of genistein for mucopolysaccharidosis treatment

EDUCATION AND TRAINING

- 01/01/2008–31/01/2011 **PhD Program in Molecular Genetics and Biochemistry**
Dept. of Pediatrics, University of Padua, Italy, Padova (Italy)
Breeding murine model, genotyping, explant tissue, tissue RNA extraction, analysis of sequencing data, isolation endothelial and astroglial cells from mouse brain.
- 01/02/2010–31/12/2010 **Master in Biotechnology of Business (MABIT/BIOTEMA)**
Fondazione CUOA, Business School in collaboration with National Council of Research (CNR) and funded by Regione Veneto (Veneto Regional Government), Vicenza (Italy)
www.cuoa.it
This master provides expertise in management problem solving and biotech knowledge transfer to firms' productive purposes and conduct sales strategy, marketing, positioning analysis and negotiation . It aims to train experts in application of biotechnology in agroindustrial, chemical - pharmaceutical, diagnostic and environmental sectors.
- 10/05/2010–12/05/2010 **Health technology assessment training course**
GIMBE, Bologna (Italy)
During the course in addition to lectures followed the performance by the participants of a project relating to the study of a particular case of inclusion of new equipment in a hypothetical Hospital.
- 04/10/1998–09/03/2007 **Master's Degree in Biological Science**
University of Padova, Padova (Italy)

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B1	B2	B1	B1	B1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills

Working in different laboratories, even at the same time, has motivated me to further improve my skills of organization and cooperation/dialogue between people of different working groups.

Organisational / managerial skills

- In the laboratory, I have always managed the inventory, the material orders, the nitrogen supply control, negotiations with representatives and coordination of the use of some funds/grant.
- In many projects, I have been the coordinator of the experimental plans and of the people involved in the work.
- The Master's Degree in Biotechnology of Business (MABIT/BIOTEMA) has provided me with the necessary knowledge to carry out a proper market analysis, sales strategy, marketing, positioning and negotiation, and the ability to develop an accurate business plan.

Job-related skills

- Management of mouse models (breeding, typing, and caudal intraperitoneal injections, sub-mandibular blood draw).
- Cell cultures.
- Isolation of endothelial cells, astrocytes, and neurons from hippocampus and cortex of mouse/rat, construction of blood-brain barrier in vitro.
- Histological techniques, immunohistochemistry and immunofluorescence
- RNA/DNA/Proteins isolation
- PCR and gel electrophoresis
- Western blot
- Preparation of samples and analysis of transcriptome data obtained from RNA-seq.
- Fluorimetric and enzymatic assays.

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Independent user	Independent user	Independent user

Digital competences - Self-assessment grid

- Windows - MAC
- Word, Excel, Power Point, Outlook
- GraphPad Prism
- Adobe Photoshop, Corel Graphic Suite, ChemBioDraw, ImageJ

Driving licence A, B

ADDITIONAL INFORMATION

Publications

M.Salvalaio, L.Rigon, F.D'Avanzo, E.Legnini, V.Balmaceda Valdez, A.Zanetti, R.Tomanin. Nanomedicine and Neuroscience: Targeting Brain Disease in Mucopolysaccharidoses. Ebook series: Frontiers in Nanomedicine 2016, chapter 6 (*in press*).

M.Salvalaio, L.Rigon, D.Belletti, F.D'Avanzo, F.Pederzoli, B.Ruozzi, O.Marin, MA. Vandelli, F.Forni, M.Scarpa, R.Tomanin, G.Tosi. Targeted Polymeric Nanoparticles for Brain Delivery of High Molecular Weight Molecules in Lysosomal Storage Disorders. PLoS One. 2016 May 26;11(5):e0156452. doi: 10.1371/journal.pone.0156452.

I.Zancan, S.Bellesso, R.Costa, **M.Salvalaio**, M.Stroppiano, C.Hammond, F.Argenton, M.Filocamo, E.Moro. Glucocerebrosidase deficiency in zebrafish affects primary bone ossification through increased oxidative stress and reduced Wnt/ β -catenin signaling. *Hum Mol Genet.* 2015 Mar 1;24(5):1280-94. doi: 10.1093/hmg/ddu538. Epub 2014 Oct 17.

S.Bellesso, **M.Salvalaio**, R.Costa, I.Zancan, R.Tomanin, E.Moro. Iduronate-2-Sulfatase Deficiency Leads to Early Dysregulation of Bone Development in a Zebrafish Model of Mucopolysaccharidosis Type II. *Abstract / Journal of Inborn Error of Metabolism & Screening* 2014; August 13: 2, doi:10.1177/2326409814538909

L.Rigon, **M.Salvalaio**, G.Tosi, D.Belletti, F.D'Avanzo, B.Ruozzi, MA.Vandelli, F.Forni, M.Scarpa, R.Tomanin. BBB Crossing in Lysosomal Storage Disorders: a Nanoparticle-based approach. *Abstract / Journal of Inborn Error of Metabolism & Screening* 2014; August 13: 89, doi:10.1177/2326409814538909

G.Mazzoccoli, R.Tomanin, T.Mazza, F.D'Avanzo, **M.Salvalaio**, L.Rigon, A.Zanetti, V.Pazienza, M.Francavilla, F.Giuliani, M.Vinciguerra, M.Scarpa. Circadian transcriptome analysis in human fibroblasts from Hunter syndrome and impact of iduronate-2-sulfatase treatment. *BMC Medical Genomics* 2013, 6:37.

E.Piller Puicher, R.Tomanin, **M.Salvalaio**, A.Friso, G.Hortelano, O.Marin, M.Scarpa. Encapsulated engineered myoblasts cure Hurler Syndrome: preclinical experiments in the mouse model. *Gene Ther.* 2012; 19(4):355-64.

M.Scarpa, A.Zanetti, F.D'Avanzo, **M.Salvalaio**, L.Rigon, A.Albiero, S.Campanaro, G.Valle, R.Tomanin. RNA-seq transcriptome profiling of primary Hunter cells following treatment with recombinant IDS as a first step for identification of ERT efficacy markers. *Abstract / Molecular Genetics and Metabolism.* 2011; 102(2): S40.

A.Friso, R.Tomanin, **M.Salvalaio**, M.Scarpa. Genistein reduces glycosaminoglycan levels in a mouse model of mucopolysaccharidosis. *Br J Pharmacol.* 2010; 159(5): 1082-91.

R.Tomanin, E.Zaccariotto, I.Marigo, A.Friso, D.Grisafi, M.Bordin, **M.Salvalaio**, M.Scarpa. Efficacy of Adenovirus-Mediated Gene Therapy in the Mouse Model for Mucopolysaccharidosis Type II. *Abstract / Acta Paediatrica* 2008; 97: 97-122.

A.Friso, R.Tomanin, **M.Salvalaio**, M.Bordin, F.Zacchello, M.Scarpa. In vivo evaluation of genistein for GAG storage reduction. *Abstract / Molecular Genetics and Metabolism* 2008; 93: S14-S46.

Posters

L.Rigon, **M.Salvalaio**, F.Pederzoli, E.Legnini, D.Belletti, A.Zanetti, B.Ruozzi, O.Marin, MA.Vandelli, F.Forni, M.Scarpa, G.Tosi, R.Tomanin. Enzyme-loaded nanoparticles: a potential therapy for the neurological compartment in Mucopolysaccharidosis type II. 20th ESGLD workshop, Pozzuoli (Napoli) October 1st-4th, 2015.

S.Bellesso, **M.Salvalaio**, R.Costa, I.Zancan, R.Tomanin, E.Moro. Iduronate-2-Sulfatase Deficiency Leads to Early Dysregulation of Bone Development in a Zebrafish Model of Mucopolysaccharidosis Type II. 13th International Symposium on MPS and Related Diseases, Costa Sauipe, Bahia, Brasil August 13th- 17th, 2014.

L.Rigon, **M.Salvalaio**, G.Tosi, D.Belletti, F.D'Avanzo, B.Ruozzi, MA.Vandelli, F.Forni, M.Scarpa, R.Tomanin. BBB Crossing in Lysosomal Storage Disorders: a Nanoparticle-based approach. 13th International Symposium on MPS and Related Diseases, Costa Sauipe, Bahia, Brasil August 13th- 17th, 2014.

G.Tosi, L.Rigon, **M.Salvalaio**, D.Belletti, F.D'Avanzo, B.Ruozzi, M.A.Vandelli, F.Forni, M.Scarpa, R.Tomanin. Blood-BrainBarrier crossing of high molecular weight molecules mediated by nanoparticles:a potential approach to treat neurological Lysosomal Storage Disorders. NanotechItaly 2013, Venice, Italy, November 27th-29th, 2013.

- M.Salvalaio**, G.Tosi, L.Rigon, D.Belletti, F.D'Avanzo, B.Ruozzi, M.A.Vandelli, F.Forni, M.Scarpa, R.Tomanin. A Nanoparticle-based approach for drug delivery to the brain in Lysosomal Storage Disorders. ESGLD Workshop 2013, Graz, Austria, September 26th-29th, 2013.
- S.Bellesso, **M.Salvalaio**, R.Costa, I.Zancan, E.Moro Loss of lysosomal iduronate sulfatase function perturbs FGF signaling and the expression of downstream key osteogenic factors. 8th European Zebrafish Meeting Barcelona, Spain, July 9th-13rd, 2013
- M.Salvalaio**, F.D'Avanzo, L.Rigon, E.Zaccariotto, A.Albiero, G.Valle, R.Tomanin, M.Scarpa. Identificazione dei processi implicati nella neurodegenerazione mediante tecnologia RNA-Seq. XXXVII Congresso Nazionale Società Italiana di Neurologia Pediatria – SINP, Padua, Italy, November 17th-19th, 2011.
- F.D'Avanzo, A.Zanetti, **M.Salvalaio**, L.Rigon, A.Albiero, S.Campanaro, G.Valle, M.Scarpa, R.Tomanin. Analisi del trascrittoma di cellule Hunter mediante RNA-seq: studi in vitro sulla patogenesi e sull'efficacia della terapia enzimatica sostitutiva. E-Poster #247. XIV Congresso Nazionale della Società Italiana di Genetica Umana – SIGU, Milan, Italy, November 13rd-16th, 2011.
- A.Zanetti, F.D'Avanzo, **M.Salvalaio**, L.Rigon, A.Albiero, S.Campanaro, G.Valle, M.Scarpa, R.Tomanin. RNA-seq transcriptome profiling of Hunter cells: in vitro studies on pathogenesis and ERT efficacy. 18th ESGLD Workshop, Langvik, Finland, September, 3rd-6th, 2011.
- M. Scarpa, A.Zanetti, A.Rampazzo, **M.Salvalaio**, F.D'Avanzo, L.Rigon, N.Gasparotto, D.Concolino, R.Tomanin. Evaluation of the efficacy of enzyme replacement therapy in paediatric patients affected by mucopolysaccharidosis type II (Hunter Syndrome). Conference "Independent research on drugs" launched by the Italian Drug Agency (AIFA), Rome, Italy, October 27th, 2009.
- F.D'Avanzo, **M.Salvalaio**, M.Fabris, A.Leon, M.Scarpa, R.Tomanin. In vitro evaluation of possible therapeutic approaches for the neurological involvement in mucopolysaccharidosis type II mouse model. ESGLD Workshop 2009, Bad Honnef, Germany, September 10th-13rd, 2009.
- M.Salvalaio**, R.Tomanin, E.Legnini, F.D'Avanzo, A.D'Arrigo, A.Leon, M.Scarpa. Studies on the pathophysiology of neurological involvement in a mucopolysaccharidosis type I mouse model. 4th Meeting on the Molecular Mechanisms of Neurodegeneration. Milan, Italy, May 8th-10th, 2009.
- A.Friso, R.Tomanin, **M.Salvalaio**, F.Zacchello, M.Scarpa. Evaluation of genistein for GAG storage reduction in the MPSII mouse model. 10th International Symposium on mucopolysaccharide and related disease. Vancouver, Canada, June 26th-29th, 2008.
- A.Friso, R.Tomanin, **M.Salvalaio**, M.Bordin, F.Zacchello, M.Scarpa. In vivo evaluation of genistein for GAG storage reduction. 4th Annual World Symposium 2008 - Lysosomal Disease Network - Las Vegas, Nevada, USA, February 13rd-15th, 2008.
- A.Friso, R.Tomanin, **M.Salvalaio**, M.Bordin, G.Wegrzyn, M.Malinowska, O.Marin, F.Zacchello, M.Scarpa. Genistein treatment reduces GAG storage in the MPSII mouse model. 16th ESGLD. Perugia, Italy, September 27th-30th, 2007.
- R.Tomanin, E.Zaccariotto, I.Marrigo, A.Friso, D.Grisafi, M.Bordin, **M.Salvalaio**, M.Scarpa. Efficacy of Adenovirus-Mediated Gene Therapy in the Mouse Model for Mucopolysaccharidosis Type II. 7th International Symposium on Lysosomal Storage Diseases and natural course, CNS pathophysiology and future target, Rome, Italy, April 27th-28th, 2007. **Winner of second prize for basic science.**
- A.Friso, R.Tomanin, E.Zaccariotto, **M.Salvalaio**, M.Fusco, G.Hortelano, J.Muenzer, O.Marin, F.Zacchello, M.Scarpa. Long-term follow-up upon microcapsule intraperitoneal implantation in the MPSII mouse model. 9th International Symposium on Mucopolysaccharidosis and Related Diseases, Venice Lido, Venice, Italy, June 29th-July 02nd, 2006.

Conferences and training courses

- 10th European Workshop Brains for Brain, Madrid (Spain), March 16th-19th, 2016
- Workshop on "Nanomedicine: Today and Tomorrow" Modena (Italy) October 16th 2015.
- 20th European Study Group on Lysosomal Disease Workshop, Napoli (Italy) 1st-4th October 2015.
- Symposium "13rd International Symposium on Mucopolysaccharidoses and Related Disease – MPS 2014", Costa do Sauipe, Bahia (Brazil), August 14th-17th 2014.
- Symposium "Lysosomal Biology Meeting", Costa do Sauipe, Bahia (Brazil), August 12nd-13rd 2014.
- 8th European Workshop Brains for Brain, Frankfurt (Germany), March 7th-9th, 2014.
- Seminar "The Brain among Evolution and Disease", Women's and Children's Health Dept., Padua (Italy), November 6th, 2012.

Seminar "New frontiers of neurosciences", Women's and Children's Health Dept., Padua (Italy), November 4th, 2011.

Symposium "The 2nd Hallym-Padova International Symposium, New Insights in Modern Medicine", Padua (Italy), October 17th-18th, 2011.

Seminar "CGH and sequencing", Agilent Technologies, Padua, Italy, January 14th, 2011.

"Use of Fedegari autoclave", Padua (Italy), June 30th, 2010

6th seminar SIBBM "Frontiers in Molecular Biology", Padua (Italy), June 3rd-5th, 2010.

Workshop "The Health Technology Assessment" (HTA), GIMBE, Bologna (Italy), May 10th-12th, 2010.

International Week of Brain, Padua (Italy), March 15th -19th, 2010.

4th European Workshop Brains for Brain, Frankfurt (Germany), March 5th -7th, 2010.

Molecular and functional analysis approaches for clinical workflow, Padua (Italy), December 02nd, 2009.

Neurodegenerative Diseases and Viruses, Piazzola sul Brenta, Padua (Italy), September 14th-15th, 2009.

ESGLD workshop 2009 (European Study Group on Lysosomal Diseases), Bad Honnef (Germany), September 10th-13rd, 2009.

IV Meeting on the Molecular Mechanisms of Neurodegeneration, Milan (Italy), May 08th-10th, 2009.

3rd European Brains for Brain Workshop, Frankfurt (Germany), March 6th-8th, 2009.

Symposium: "MicroRNA in Biology and Disease", Padua (Italy), December 4th, 2007.

7th International Symposium on Lysosomal Storage Diseases and natural course, CNS pathophysiology and future target, Rome (Italy), April 27th-28th, 2007.

9^o International Symposium on Mucopolysaccharidosis and Related Diseases, Venice Lido, Venice (Italy) June 29th-July 02nd, 2006.

Trattamento dei dati personali

Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali.