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Education:

1995 Maturita' Scientifica (High school, scientific curriculum), approved with 60/60.

July 2000 Degree (Italian Laurea, corresponding to the British Master of Sciences, MSc) in Biological Sciences University of Pisa, Italy:
approved with 110/110 cum laudae.

November 2000 Degree in Molecular Biology at Scuola Normale Superiore degli Studi di Pisa, Italy:
approved with 70/70 cum laudae.

January 2005 Doctor Philosophiae (PhD) in Molecular Medicine, Scuola Normale Superiore Pisa:
approved with 70/70 cum laudae.

Extra Academic Courses:

1998 Advanced course on Developmental Biology

1998-1999 Frontiers in Neurobiology (SNS)

1999 Bioinformatics

2000-2004 PhD classes: Molecular Biology, Biotechnology, Microbiology, Immunology, Protein structure

July 2005 Summer course: Advanced topics in Computational Biology Trieste, Italy

July 2005 Summer course: Advanced topics in Biomedicine Trieste, Italy

July 2006 Summer course: Advanced topics in Molecular Medicine Trieste, Italy

June-July, 2001 "Bioinformatics: Computer Methods in Molecular Biology"

September 2002 "Bacterial genetics: Laboratory Methods in Bacterial Biology"

Teaching Experience:

2001-2006 Conferences and lessons with the contribute of AIRC (Italian Association for Cancer Research)

2002-2004 "University Orientation Courses" Scuola Normale Superiore of Pisa

2003 - 2006 Molecular Biology II class (Gene Therapy module); Biotechnology faculty, University of Trieste

Research Experience:

October-December 1998 Visiting student at the Laboratoire de Genetique Moleculaire de la Neurotransmission et des Processus Neurodegeneratifs (L.G.N.) UMR 9923 C.N.R.S. - Directeur Jacques

Mallet with a fellowship from the European Community (EEC, Training and Mobility of Researchers Program)

Study on candidate genes involved in the predisposition to psychiatric diseases.

September-November 1999 Visiting student at the Molecular Medicine Laboratory, International Center for Genetic Engineering and Biotechnology (ICGEB) under the supervision of Prof. Mauro Giacca with a fellowship from Scuola Normale Superiore di Pisa

HIV-1 Tat protein implication in lymphocyte's apoptosis.

1999-2000 Research student at the Molecular Medicine Laboratory, International Center for Genetic Engineering and Biotechnology (ICGEB) under the supervision of Prof. Mauro Giacca with a fellowship from Scuola Normale Superiore di Pisa and Ministero per l'Universita' e la Ricerca Scientifica e Tecnologica of Italy (MURST) for the preparation of the experimental thesis.

Graduation thesis: *Transcellular transport of the HSV-1 thymidine kinase enzyme by fusion with the HIV-1 Tat protein: a novel strategy for cancer gene therapy.*

August-December 2000 ICGEB Single Service Agreement: "Production and purification of recombinant proteins of HIV-1"

Molecular Medicine Laboratory, International Center for Genetic Engineering and Biotechnology (ICGEB) under the supervision of Prof. Mauro Giacca.

January 2001-January 2005 PhD student at the Molecular Medicine Laboratory, International Center for Genetic Engineering and Biotechnology (ICGEB) under the supervision of Prof. Mauro Giacca with a fellowship from Scuola Normale Superiore di Pisa.

PhD Thesis: *HIV-1 Tat protein transduction domain improves thymidine kinase bystander effect for cancer gene therapy.*

January 2005-december 2005 Postdoctoral Fellow at the Molecular Medicine Laboratory, International Center for Genetic Engineering and Biotechnology (ICGEB) under the supervision of Prof. Mauro Giacca.

May 2005 Visiting scientist at the Micro Medical Device Laboratory (MicroMD), Columbus, Ohio State University (OSU) under the supervision of Prof. Mauro Ferrari

Development of novel nano- and micro- devices for targeted gene and drug release

June-August 2005 CBM Single Service Agreement: "Development of a Molecular Imaging Core Facility"
CBM Srl - Consorzio per il Centro di Biomedicina Molecolare
AREA Science Park, Basovizza, Trieste, Italy

September 2005- October 2006 Project Manager Core Facility Molecular Optical Imaging
CBM Srl - Consorzio per il Centro di Biomedicina Molecolare
AREA Science Park, Basovizza, Trieste, Italy

January – October 2006 Postdoctoral Fellow at the Molecular Medicine Laboratory, International Center for Genetic Engineering and Biotechnology (ICGEB) under the supervision of Prof. Mauro Giacca.

October 2006 – September 2008 Postdoctoral Fellow at the Nanomedicine Laboratory, Institute for Molecular Medicine, University of Texas Health Science Centre at Houston under the supervision of Prof. Mauro Ferrari.

September 2008 – to date Assistant Professor at the Division of Nanomedicine, Institute for Molecular Medicine, University of Texas Health Science Centre at Houston.

Techniques and Laboratory skills:

Molecular biology:

Mammalian cell culture techniques: handling, transfection, processing and Citofluorimetry.

Bacterial culture: handling and transformations.

Tagged protein expression and purification (His-tag and GST-tag in particular).
Analysis of proteins: SDS-page, Western-blot, pull-down assay, ELISA.
Preparation and purification of DNA and RNA from eukaryotic and prokaryotic cells.
DNA cloning, analysis and general handling.
PCR and RealTime-PCR.

Virology:

Production and purification of Adeno Associated and Retroviral vectors for gene transfer.

Histology techniques:

Immunofluorescence, Immunohistochemistry, Alkaline phosphatase and X-Gal staining.

Microscopy:

Fluorescent, confocal and live microscopy, SEM, TEM.

Analytical chemistry:

HPLC, Ionic exchange and Size exclusion Chromatography, principles of SELDI, MALDI and MS/MS analysis.

Molecular imaging:

MRI, PET, X-ray and Optical imaging.

Animal:

Mouse and rat handling, management and dissection. Surgery in rat models for hind limb ischemia (femoral and iliac artery ligation), restenosis of the carotid artery, myocardial infarction by LAD, tail injection and tumor induction, ventricular perfusion. Induction and screening of humoral, mucosal and cellular immunity in the mouse.

Exhibitions and workshops:

5-7 July 2003 Bionova: International Biotechnologies and Bioengineering Exhibition
Organization and manning of the ICGEB exhibit booth
Padova, Italy

10-14 October 2003 Italian Concerted Action on the Development of a Vaccine against HIV/AIDS (ICAV)
Representative for the Molecular Medicine Laboratory at the "Work in progress and future perspectives meeting"
Alghero, Italy

21-24 October 2004 SMAU: International Exhibition in Information & Communications Technology.
Organization and manning of the ICGEB exhibit booth in the Innovation and Research area
Milan, Italy

12-15 October 2004 Workshop on endothelium treatment
Representative for the Molecular Medicine Laboratory at the meeting on "Perspectives of gene transfer for cardiac angiogenesis and myocardial cells regeneration"
Pisa, Italy

28-31 March 2004 Working Group of Nuclear Cardiology
Representative for the Molecular Medicine Laboratory at the Brain storming meeting
Kitzbuehl, Austria

12-17 October 2005 SMAU: International Exhibition in Information & Communications Technology.
Organization and manning of the ICGEB exhibit booth in the Innovation and Research area
Milan, Italy

26-28 January 2005 Bridging Research to Clinical Practice
Representative for the ICGEB Molecular Medicine Laboratory at the General Electric Workshop: "Molecular Imaging Technologies in the new millennium".
Milan, Italy

9-11 February 2006 INNOVATION

Organization and manning of the CBM exhibit booth and representative for the CBM Molecular Imaging Core Facility at the Workshop: “Bringing together suppliers and users of technology and know-how to discuss solutions and new opportunities for the future”.
Udine, Italy

Presentations:

4-9 July 2001 American Society of Gene Therapy

Ennio Tasciotti, Monica Zoppe' and Mauro Giacca
“Enhanced bystander effect of a fusion protein between HSV-1 thymidine kinase and the transactivator protein of HIV-1”
Seattle, USA

June 2002 American Society of Gene Therapy

Ennio Tasciotti, Monica Zoppe' and Mauro Giacca.
“Enhanced anti-tumoral activity of HSV-1 thymidine kinase fused to an 11 aa peptide from the HIV-1 Tat protein which promotes intercellular trafficking”
Boston, USA

4-8 September 2004 ELSO meeting

Agostini Silvia, Tasciotti Ennio, Cereseto Anna and Giacca Mauro.
“Characterization of the non-canonical secretion pathway of the HIV 1 Tat transactivator protein”.
Nice, France

24-27 October 2004 46th annual meeting of the Italian Cancer Society

Ennio Tasciotti and Mauro Giacca
“Enhanced anti-tumoral activity of HSV-1 thymidine kinase fused to an 11 aa peptide from the HIV-1 Tat protein which promotes intercellular trafficking”
Pisa, Italia

4-8 June 2004 American Society of Gene Therapy

Ennio Tasciotti and Mauro Giacca.
“Enhanced in vivo anti-tumoral activity of HSV-1 thymidine kinase fused to an 11 aa peptide from the HIV-1 Tat protein which promotes intercellular trafficking”
Minneapolis, USA

7-10 November 2004 American Heart Association Scientific Sessions

Serena Zacchigna, Lorena Zentilin, Nikola Arsic, Lucia Pattarini, Ennio Tasciotti, Sabrina Tafuro, Milena Sinigalia, Alessandro Salvi, Gianfranco Sinagra and Mauro Giacca.
“Bone marrow cells recruited to the sites of adult neo-angiogenesis are not directly incorporated into the newly formed vessels, but their presence correlates with vessel maturation”
New Orleans, USA

1-4 May 2005 ICAV AIDS meeting

Ennio Tasciotti, Miguel Gomez-Lim and Mauro Giacca
Novel strategies for anti-HIV immunization
Istituto Superiore di Sanità (ISS), Roma, Italy

1-4 June 2005 American Society of Gene Therapy

Ennio Tasciotti, Serena Zacchigna, Nikola Arsic, Oreste Sorace, Cecilia Marini, Silvia Pardini, Debora Petroni, Claudia Kusmic, Lucia Pattarini, Silvia Moimas, GianMario Sambuceti, Mauro Giacca
“VEGF-induced angiogenesis does not have a favorable effect on muscle perfusion: a relevant role of long-term Angiopoietin-1 expression in the formation of functional blood vessels”
St. Louis, USA

- 7-10 September 2005** Society for Molecular Imaging
 Ennio Tasciotti, Serena Zacchigna, Claudia Kusmic, Oreste Sorace, Cecilia Marini, Nikola Arsic, Silvia Pardini, Debora Petroni, Lucia Pattarini, Silvia Moimas, Mauro Giacca and GianMario Sambuceti
 “Visualization of Functional Angiogenesis Induced by VEGF and Angiopoietin-I Gene Transfer using Positron Emission Tomography”
 Cologne, Germany
- 10-15 December 2005** The American Society for Cell Biology (ASCB) 2005 meeting
 Agostini Silvia, Fittipaldi Antonio, Tasciotti Ennio, Cereseto Anna and Giacca Mauro
 “Characterization of the Non-Classical Pathway of HIV-Tat Protein Secretion”
 San Francisco, USA,
- 17-20 May 2006** European Society Molecular Imaging Kick-off meeting
 Ennio Tasciotti, Serena Zacchigna, Mauro Giacca
 “Long term perfusion imaging indicates poor functionality of VEGF-induced vasculature in vivo”
 Paris, France
- 20-22 May 2006** International Workshop on X-ray spectromicroscopy and imaging for improving life conditions and human health
 Ennio Tasciotti, Mauro Giacca
 “Molecular imaging in cells and live animals for biomedical research”
 International Centre for Theoretical Physics, Trieste, Italy
- 5-8 June 2006** Conference on Drug Development for the Third World
 Drug Targeting at the Molecular Level: Regulation of HIV-1 life cycle by host cell proteins: Novel possibilities for drug development.
 International Centre for Theoretical Physics, Trieste, Italy
- 30 August-2 September 2006** Society of Molecular Imaging
 Vito Lorusso, Linda Chaabane, Luigi Miragoli, Ennio Tasciotti, Serena Zacchigna, Mauro Giacca.
 “Blood Pool Agent as a Tool for In Vivo MR Imaging of Neovascularization Induced by AAV Vector Transfection of VEGF and Angiopoietin-1 Genes”
 Big Island Hawaii, USA
- 30 August-2 September 2006** Society of Molecular Imaging
 Ennio Tasciotti, Serena Zacchigna, Lucia Pattarini, Marco Bucci, Carmelo Quarta, Cristina Nanni, Valentina Ambrosini, Stefano Fanti, Mauro Giacca
 “Longitudinal MicroPET evaluation of myocardial viability and recovery after acute infarction and AAV mediated VEGF165 gene transfer”
 Big Island Hawaii, USA
- 21-23 September 2006** European Society for Magnetic Resonance in Medicine and Biology
 Vito Lorusso, Linda Chaabane, Luigi Miragoli, Ennio Tasciotti, Serena Zacchigna, Mauro Giacca.
 “Blood Pool Agent as a Tool for In Vivo MR Imaging of Neovascularization Induced by AAV Vector Transfection of VEGF and Angiopoietin-1 Genes”
 Warsaw, Poland
- 2-4 October 2007** NanoTX'07 conference Nano-Summits panel session
 ”Nanotechnology for Medical Diagnosis and Nanotechnology-Based Medical Therapeutics”.Dallas, Texas, USA.
- 19 October 2007** Leaders of Innovation: New Pathways to Discovery
 “A multi-stage nanodelivery system for therapeutic applications and medical imaging”
 Houston, TX, USA

- 26-29 November 2007** Cold Spring Harbour Meeting “In vivo barriers to gene transfer”
 Ennio Tasciotti, Rohan Bhavane, Xuewu Liu, Mark Cheng, Paolo Decuzzi, Fredika Robertson, Mauro Ferrari “A multi-stage nanodelivery system for the avoidance of biological barriers”
 Cold Spring Harbour, NY, USA.
- 10-13 September 2008** World Conference on Molecular Imaging
 Ennio Tasciotti, Rita Serda, Rohan Bhavane, Biana Godin-Vilenchouk, April Ewing, Jianhua Gu, Xuewu Liu, Fredika Robertson, Mauro Ferrari. “In vivo imaging of a multi-stage drug delivery system” Nice, France.
- 1-4 October 2008** Annual Meeting of the Society of Biomedical Engineering.
 Ennio Tasciotti, Ali Bouamrani, Tony Hu, Xuewu Liu, Fredika Robertson, Mauro Ferrari.
 Mesoporous Silicon Chips for Proteomic Analysis of Low Abundant, Low Molecular Weight Proteins and Peptides in Human Plasma. Saint Louis MO, USA
- 11-14 December 2008** Annual Breast Cancer Symposium.
 Ennio Tasciotti, Biana Godin-Vilenchouk, Rita Serda, Rohan Bhavane, Xuewu Liu, Fredika Robertson, Mauro Ferrari.
 A multistage nanodelivery system for therapeutic applications and medical imaging: in vivo biodistribution and efficacy study in a murine orthotopic breast cancer model.
 San Antonio TX, USA
- 24-28 February 2009** Unither Therapeutics Nanomedical and Telemedical meeting.
 Ennio Tasciotti. “Nanoporous Silicon as a Platform for Targeted Drug Delivery and Discovery of Proteomic Signatures for Cancer Diagnostics”. Magog, Montreal Canada

Publications:

- “Transcellular transfer of active HSV-1 thymidine kinase mediated by an 11-amino-acid peptide from HIV-1 Tat”
 Ennio Tasciotti, Monica Zoppe` and Mauro Giacca
Cancer Gene Therapy (2003) 10, 64 – 74.
- “Novel cell-penetrating peptides for specific subcellular delivery of therapeutic cargoes”
 De Coupade C., Fittipaldi A., Chagnas. V, Michel M., Carlier S., Tasciotti E. , Darmon A., Kearsey J., Ravel, D., Giacca M., Cailler F.
Biochemical Journal 2005 Sep 1;390 (Pt 2): 407-18.
- “HIV-1 Tat protein transduction domain improves thymidine kinase bystander effect for cancer gene therapy”
 Tasciotti E. and Giacca M.
Human Gene Therapy. 2005 Dec; 16(12): 1389-403.
- “In vivo imaging shows abnormal function of vascular endothelial growth factor-induced vasculature”
 Tasciotti E, Zacchigna S, Kusmic C, Arsic N, Sorace O, Marini C, Marzullo P, Pardini S, Petroni D, Pattarini L, Moimas S, Giacca M, Sambuceti G.
Human Gene Therapy 2007 Jun;18(6):515-24.
- “Fruit-Specific Expression of the Human Immunodeficiency Virus Type 1 Tat Gene in Tomato Plants and Its Immunogenic Potential in Mice”
 Ennio Tasciotti, Abel Gutierrez-Ortega, Alberto J. Donayre Torres, Mari´a Teresa Olivera Flores, Mauro Giacca, and Miguel Angel Gomez Lim
Clinical and Vaccine Immunology June 2007, Vol. 14, No. 6 p. 685–692.

“Nanoporous Silicon as a Platform for Targeted Drug Delivery and Discovery of Proteomic Signatures for Cancer Diagnostics”

Ennio Tasciotti, Fredika Robertson & Mauro Ferrari .

Invited review: **Proceedings of the American Association for Cancer Research (2008)**

“Silicon as a biomedical material”

Mark Ming-Cheng Cheng, Ennio Tasciotti, Mauro Ferrari

Invited review: **Proceedings of Electrical and Electronic Engineering (2008)**

“Mesoporous silicon particles as a multistage delivery system for imaging and therapeutic applications”

Ennio Tasciotti, Xuewu Liu, Rohan Bhavane, Kevin Plant, Ashley D. Leonard, B. Katherine Price, Mark Ming-Cheng Cheng, Paolo Decuzzi, James M. Tour, Fredika Robertson & Mauro Ferrari

Nature Nanotechnology 3, 151 - 157 (2008) Published online: 2 March 2008.

“Nanotechnology for breast cancer therapy “ Tanaka T, Decuzzi P, Cristofanilli M, Sakamoto JH, Tasciotti E, Robertson FM, Ferrari M.

Biomed Microdevices 2008 Jul 29

“Novel MRI approaches to follow VEGF and Angiopoietin-1 induced neoangiogenesis”

E. Tasciotti, L.Chabanne, S. Zacchigna, L.Miragoli, V.Lorusso, M.Giacca

Submitted to: **Molecular Imaging.**

“Nanoporous silica thin films for the selective fractionation of low molecular weight proteins and peptides”. Tasciotti E., Liu X., Bouamrani A., Hu Y., Li L., Chiappini C., Ferrari M.,

Submitted to **Nature Materials**

Patents

E. Tasciotti, M. Ferrari, “Compositions and Methods for Multistage Drug Delivery”, Tech ID 2006-0057, File Date 08/08/2006, Serial No. 60/821,750.

E. Tasciotti, M. Ferrari, “Loading, Release, Biodegradation and Biocompatibility of a Nanovector Delivery System”, Tech ID 2007-0041, File Date 04/27/2007, Serial No. 60/914,348.

Honors and awards

University of Pisa Foundation / Young scientist travel award (November 1999)

Molecular Biology Research Society Graduate Student Award Finalist (July 2000)

Travel award and best abstract “American Society for Gene Therapy” for the work: “Enhanced anti-tumoral activity of HSV-1 thymidine kinase fused to an 11 aa peptide from the HIV-1 Tat protein which promotes intercellular trafficking” Minneapolis, USA (2004)

Italian Ministry for Instruction “Distinguished Scholar”, Scuola Normale Superiore degli Studi di Pisa (2000 to 2004)

EEC, Researchers Training and Mobility Program Multiple Awarded fellowships from the European Community (2001 to 2005)

Stipend award for best submitted abstract. Society of Molecular Imaging Hawaii, USA (2006)

Stipend award for best submitted abstract. World Conference on Molecular Imaging Nice, France (2008)