

CURRICULUM VITAE

Elisabetta Mantuano, Pharm.D, Ph.D.

Education:

Doctor of Pharmacy (Pharm.D.), University of Pisa, Italy	1998-2003
Doctor of Philosophy (Ph.D.), University of Pisa, Italy	2004-2007
Visiting Research Scholar, College of Pharmacy and Health Sciences, Butler University, Indianapolis Indiana	2004
Residency in Clinical Pharmacology and Toxicology, University of Rome Sapienza, Italy	2007-2010
Postdoctoral Fellow, Department of Anesthesiology and Pathology, UCSD MicroMBA, Rady School of Management, UCSD	2007-2012 2021

Professional Licensing:

Board certification through the Board of Pharmacy	12/12/2003
Licensed Doctor of Pharmacy	2004-present

Professional and Academic Appointments:

Research Supervisor Preclinical <i>in vivo</i> Pharmacology Studies, Department of Obstetrics and Gynecologist, Catholic University of the Sacred Heart, Agostino Gemelli Teaching Hospital, Rome, Italy	2005-2007
Postgraduate Research, Department of Anesthesiology and Pathology, UCSD, USA	2007-2012
Assistant Project Scientist, Department of Pathology, UCSD, USA	2012-2020
Assistant Professor, Department of Experimental Medicine and Pathology University of Rome Sapienza, Rome, Italy	2014-2019
Research Supervisor for the International Research laboratory between Sapienza University of Rome and UCSD	2015-2019
Associate Research Scientist, Department of Pathology, UCSD, USA	2020-present
Associate Professor, Department of Life Sciences, Health, and Health Professions, Link Campus University, Rome, Italy	2023-present
Rector's Research Delegate, Link Campus University, Rome, Italy	2024-present

Habilitation:

National Scientific Habilitation (ASN) for Associate Professor in 06/A2	2017-2027
National Scientific Habilitation (ASN) for Associate Professor in 06/N1	2017-2027

Research Interests:

- Project leader focused on cell signaling pathways involved in Inflammation and Innate Immunity
- Project leader focused on Exosomes in Inflammation and Inflammatory Diseases
- Project leader focused on novel pathways by which proteases and their cell-surface receptors regulate neuronal survival

Project leader focused on role of Exosomes in Central Nervous System Diseases
Function of Protease Receptors in Neurodegenerative Diseases
Inflammation and Innate Immunity in Peripheral Nervous System and Central Nervous System Injury
Strategies to enhance axonal regeneration after nerve injury
Molecular and Cellular Mechanisms underlying Neuroinflammation and Chronic Pain in Spinal Cord Injury
The role of Neuroinflammation in Neuropathic Pain

Professional Summary:

Hands-on scientist and project manager focused on **neuroscience, immunology and pharmacology** research, and development of small molecule therapeutics.

- Managed internal and external teams from multi-disciplinary areas
- Excellent skills spanning target identification, drug discovery/lead optimization, and pre-clinical development
- Writing and Development of animal protocols: for comparative pharmacokinetic studies, acute toxicity studies, cancer and immunology studies.
- Management of pre-clinical studies including authoring protocols/reports/manuscripts, coordinating sample collection/testing
- Successful grant writer, awarded grant for pre-clinical translation studies.

Drug discovery expertise

- Pharmacology expertise with *in vivo* animal models including neuropathic pain models, multiple sclerosis model, cancer xenograft models, arthritis models, menopause models.
- Skilled in protein biochemistry, immunology, and cell biology applications
- 15 years of experience in molecular biology techniques, establishing new cell lines, and development of small molecule drugs targeting receptors, proteases, enzymes, and signal transduction pathways
- Leader of neuro-inflammation and immunology projects (cell signaling and cytokine endpoints)
- Managed pharmacology lab focused on peripheral nerve injury, neuroinflammation, cancer and immunology (conducted *in vivo* behavioral assays)
- Managed chemist lab - knowledge and execution of synthesis of different heterocyclic compounds
- Many years of experience with receptor targets such as LDLRs, uPAR, NMDRs, protease and enzyme biology, and signal transduction pathways

Teaching Responsibilities:

Graduate School Courses and Didactics

Delivered Seminar: "Cannabis, Ecstasy, Heroin, Cocaine: Clinical Views and Drug abuse Treatments" Drug Addiction Treatment Center, Italy	2000-2004
Course Lecturer, "Cannabis, Ecstasy, Heroin and Cocaine: Clinical Views and Treatments", School of Pharmacy, University of Pisa and Drug Addiction Treatment Center, Italy	2003-2006

Course Lecturer, "Prevention of Alcoholism and Drug Dependency" School of Pharmacy, University of Pisa and Drug Addiction Treatment Center, Italy	2003-2006
Course Lecturer "Medicinal Chemistry", College of Pharmacy and Health Sciences, Butler University, Indianapolis Indiana	2004
Delivered Seminar to Graduate School of Neurosciences, Medical School, Catholic University of the Sacred Heart, Rome, Italy	2009-2012
Course Lecturer, "Basic Medical Laboratory Techniques", Degree program of Biomedical Laboratory (MED46) University of Rome Sapienza, Italy	2015
Course Lecturer, "Medical Oncology"; Degree program of Biomedical Laboratory (MED46) University of Rome Sapienza, Italy	2015-2016
Course Lecturer, "Molecular Pathology of Cancer"; Degree program of Biomedical Sciences, University of California, San Diego, USA	2016-2017
Course Lecturer, "Mechanisms of Neurologic Disease"; Degree program of Biomedical Sciences, University of California, San Diego, USA	2016-2017
Course Lecturer, "Molecular and Cell Biology"; Degree program of Biomedical Sciences, University of California, San Diego, USA	2018-2019

Trainees:

Fiovina Olivieri, PhD candidate, University of Pisa, Italy	2007-2008
Giuliano Giannini, PhD candidate, University of Pisa, Italy	2007-2008
Antonella Capozzi, Postdoctoral Fellow, University of Rome Sapienza, Italy	2011-2016
Alex Santillan, Undergraduate Research Student UCSD	2012
Giorgio Ducoli, MD, Physician Scientist	2013
Michael Lam, PharmD Research Student UCSD	2013-2015
Ennio Avolio, PhD, Postdoctoral Fellow	2013-2014
Coralie Brifault, PhD, Postdoctoral Fellow	2014-2019
Michael Banki, Staff Research Associate UCSD	2014-present
Emilia Laudati, PhD candidate, Catholic University of the Sacred Heart, Rome, Italy	2015-2016
Letizia Natali, PhD candidate, University of Pisa, Italy	2015-2016
Pardis Azmoon, Staff Research Associate UCSD	2015-present
Cristina Zalfa, PhD, Postdoctoral Fellow	2016-2019
Nicki Karimi-Mostowfi, Undergraduate Research Student Sapienza, Italy	2017
Shahab Banki, Undergraduate Research Student UCSD	2017-2020
Lipsa Das, PhD, Postdoctoral Fellow	2017-2020
Paola Pontecorvi, PhD candidate, University of Rome Sapienza, Italy	2018-2019
Cory Gunner, Staff Research Associate UCSD	2019-present
Kyle R. Heye, Undergraduate Research Student UCSD	2022-present
Carlotta Zampieri, PhD candidate UCSD	2022-present
Maxwell Zhou, Undergraduate Research Student UCSD	2022-present
Binita Poudel Staff Research Associate UCSD	2023-present

Equity, Diversity and Leadership Activities:

Founder, Outreach program for underrepresented minorities, School of Pharmacy, University of Pisa and Drug Addiction Treatment Center	1999-2007
Founder, Program of Cultural and Scientific Cooperation between Sapienza University of Rome and UCSD	2014-2019
Research Supervisor of International Research laboratory between Sapienza University of Rome and UCSD	2015-2019
International tutor Doctoral School of Science of Drugs and Bioactive Substances, University of Pisa	2015-2019

Editorial Advisory Boards:

Springer Nature, Editorial Board
Scientific Reports, Editorial Board
Neurology & Neurotherapy Journal, Editorial Board
Journal of Pharmacology & Clinical Research, Editorial Board
Journal of Pathology and Disease Biology, Editorial Board

Academic Society Membership:

Society for Neuroscience
Peripheral Nerve Society
American Society for Biochemistry and Molecular Biology
American Society for Investigative Pathology
American Society for Cell Biology
Federation of European Neurosciences

Invited Journal Reviewer:

Behavioral Neurology
Biochemistry
Current Immunology Reviews
Experimental Cell Research
Hematology and Blood Disorders
Hematology & Medical Oncology
Journal Brain and Nerves
Journal of Cell Signaling
Journal of Clinical & Experimental Pathology
Journal of Neurochemistry
Journal of Pharmacology & Clinical Research
Journal of Pharmacology and Toxicological Studies
Journal of Pathology and Disease Biology
Journal of Structural Biology
Journal of Translational Science
Journal of Visualized Experiments
Laboratory Investigation
Molecular and Cellular Biology
Molecular Biology of the Cell
Molecular Carcinogenesis

Neurology & Neurotherapy
Virology: Research & Reviews

Grant/Research Support:

Senior/Key Personnel – Project funded by the National Institute of Health (NIH) (R01NS057456). Title: “LRP-1 is a multifunctional regulator during peripheral nerve injury and pain”. 2008-2013.

Senior/Key Personnel – Project funded by the National Institute of Health (NIH) (R01NS054671). Title: “Alpha₂-macroglobulin in Peripheral Nerve Injury”. 2008-2012.

Senior/Key Personnel – Project funded by the National Institute of Health (NIH) (R01HL060551). Title: “Regulation of signaling receptor activity by LRP-1”. 2010-2014.

Principal Investigator – Project funded by the Italian Ministry of Education, University and Research (MIUR) FIRB 2013: RBF13BPK9. Title: “The low-density lipoprotein receptor-related protein-1 is a key receptor involved in progression of neurodegenerative diseases”. 2014-2019.

Principal Investigator – Calls for international agreements, project funded by University of Rome Sapienza, Italy. AI2617ZM2Z. Title: “LRP1 plays a key role in cell regeneration processes, inflammation and regulation of innate immunity”. 2017-2019.

Senior/Key Personnel – Project funded by the National Institute of Health (NIH) (R01NS097590). Title: “Schwann cell NMDA Receptor in PNS injury”. 2017-2021.

Senior/Key Personnel – Project funded by the National Institute of Health (NIH) (R01HL136395). Title: “Regulation of Inflammation by the Fibrinolytic System”. 2017-2024.

Patents

Mantuano E. and Gonias SL. “Novel anti-inflammatory therapeutics” U.S. Provisional Application Serial No.63/184,980 Filed on May 6, 2021.

Mantuano E. and Gonias SL. “Novel anti-inflammatory therapeutics.” International Application Number PCT/US22/25202 filed April 18, 2022.

Mantuano E. and Gonias SL. “NMDA-R activating peptides in inflammation and neuronal differentiation” U.S. Provisional Application Serial No.63/506,609 Filed on June 7, 2023.

Scientific Collaborations:

Prof. Steven L. Gonias, Department of Pathology UCSD

Prof. Wendy M. Campana, Department of Anesthesiology UCSD

Prof. Christina J. Sigurdson, Department of Pathology UCSD

Prof. Claudia Martini, Department of Pharmacy, University of Pisa, Pisa; Vice-rector for the National Research, University of Pisa, Italy

Prof. Cinzia Marchese, Director of Cellular Biotechnology Laboratory, Department Experimental Medicine and Pathology, University of Rome Sapienza, Rome, Italy

Dr. Alberto Ferri, Institute for Cell Biology and Neurobiology, CNR, Rome, Italy

Prof. Ferdinando Nicoletti, Department of Physiology and Pharmacology, University of Rome Sapienza, Rome, Italy; IRCCS Neuromed Pozzilli, Italy

Prof. Angelo Vescovi, Department of Biotechnology and Biosciences, University of Milan Bicocca, Milan, Italy; RCSS Casa Sollievo della Sofferenza, ISBReMIT- Institute for Stem Cell Biology, Regenerative Medicine and Innovative Therapies, Italy

Lecture Invitations:

- Annual Scientific Meeting of Chemistry Italian Society (SCI). "New BK Channel Openers: Synthesis and Biological Activity ". Perugia, Italy. December 12, 2003
- 4° Sigma Aldrich Young Chemists Symposium (SAYCS), "New adenine-like derivatives as ligands for A3 adenosine receptors". Riccione, Italy. May 17-19, 2004
- European School of Medicinal Chemistry (ESMEC). "Synthesis and Anticancer evaluation of 1,8 Naphtyridine Derivatives". Urbino, Italy. July 1-7, 2006
- Gordon Research Conferences in Plasminogen Activation and Extracellular Proteolysis. "Molecular Dissection of the Human α 2-Macroglobulin Subunit Reveals Domains with Opposing Activities in Cell Signaling". Ventura, California (USA). February 10-15, 2008
- Neuroscience 2008. Low density lipoprotein receptor related protein-1 (LRP-1) is essential for Schwann cell migration under basal conditions and in response to matrix metalloproteinase-9., Washington, DC (USA). Nov 15-19, 2008
- Graduate School of Neurosciences "Peripheral nerve and Schwann cell biology"; Medical School, Catholic University of the Sacred Heart, Rome, Italy. December 16, 2009
- Peripheral Nerve Society 2009 Biennial Meeting. "LRP-1 Regulates Schwann Cell Motility by its Effects of the GTPases, Rac1 and Rho". Würzburg, Germania. July 4-8, 2009.
- Neuroscience 2009. "LRP1 regulates Schwann cell mobility by its effect on the activity of the GTPases, Rac and Rho". Chicago, Illinois (USA). Nov 15-19, 2009.
- Gordon Research Seminars in Plasminogen Activation and Extracellular Proteolysis, "Rac1 and RhoA are regulated reciprocally downstream of low-density lipoprotein receptor-related protein to control Schwann cell adhesion and migration", Ventura, California. February 9-10, 2010
- Peripheral Nerve Society 2011 Biennial Meeting. "The Unfolded Protein Response is a Major Mechanism by which LRP1 Promotes Schwann Cell Survival after Injury". Potomac, Maryland (USA). June 25-29, 2011.
- Graduate School of Neurosciences, "The Role of LRP1 in Peripheral Nerve Injury", Medical School, Catholic University of the Sacred Heart, Rome, Italy. December 18, 2011
- Department of Pathology "LRP1 Gene Deletion Links Myelinating Schwann Cell Survival to the Prevention of Chronic Neuropathic Pain", University of Rome Sapienza, Rome, Italy. December 19, 2011
- Department of Pharmacy, "LRP1 as a multifunctional regulator during peripheral nerve injury and Pain". University of Pisa, Pisa, Italy. December 16, 2012
- Graduate School of Neurosciences, "The Unfolded Protein Response is a Major Mechanism by which LRP1 Promotes Schwann Cell Survival after Injury" Medical School, Catholic University of the Sacred Heart, Rome, Italy. June 23, 2012
- XIVth International Workshop on Molecular and Cellular Biology of Plasminogen Activation, "Ligand-specific Co-receptor Recruitment Determines the Signaling Activity of LRP1 in Response to Tissue-type Plasminogen Activator and Myelin-associated Glycoprotein" Notre Dame, Indiana (USA). June 4-8, 2013
- SIPMET/ASIP American Society for Investigative Pathology, "LPR1 signaling in neurons and neurite-generating cell lines is determined by ligand-specific co-receptors engagement", Rome, Italy. October 23-24, 2013
- Neuroscience 2013. "LRP1 signaling in neurons and neurite-generating cell lines is determined by ligand-specific co-receptor engagement". San Diego, California (USA). Nov 9-13, 2013
- Experimental Biology 2014. "PrP^C associates with a multimolecular complex including LRP1

and glycosphingolipids within lipid rafts". San Diego, California (USA). April 26-30, 2014
Neuroscience 2014. "LRP1 activates ERK1/2 in lipid rafts in neuron-like cells". Washington, District of Columbia (USA). Nov 15-19, 2014
XVth International Workshop Molecular and Cellular Biology of Plasminogen Activation. "LDL receptor-related protein-1 attenuates innate immunity by regulating NFkB". Notre Dame Rome Global Gateway, Rome, Italy. September 22-26, 2015
Plasminogen Activation & Extracellular Proteolysis - Gordon Research Conferences Department of Pathology, "LDL receptor-related protein-1 attenuates innate immunity by regulating NFkB", University of Rome Sapienza, Rome, Italy. June 27, 2016
Pharmacology and Toxicology Doctoral Program "Tissue-type plasminogen activator activity in the nervous system". University of Rome Sapienza, Rome, Italy. June 29, 2017
Gordon Research Conferences in Plasminogen Activation and Extracellular Proteolysis. "Lipid raft disruption selectively blocks the cell-signaling activity of LRP1 in neuron-like cells". Ventura, California (USA). Feb 14-19, 2016
Neuroscience 2016. "LRP1 signaling occurs in lipid rafts". San Diego, California (USA). Nov 12-16, 2016
UC San Diego Pathology Research Retreat "A Soluble Derivative of PrP^C Promotes Cell-Signaling and Regulates Cell Physiology by a Pathway That Requires LRP1 and the NMDA Receptor". La Jolla, California. August 15, 2020
UC San Diego Pathology Research Retreat "A soluble PrP^C derivative and membrane-anchored PrP^C in extracellular vesicles regulate innate immunity by engaging the NMDA-R/LRP1 receptor complex". La Jolla, California. August 21, 2021
Conference on Regenerative Medicine. "A Soluble Derivative of Cellular Prion Protein and Cellular Prion Protein in Extracellular Vesicles Activate Cell-Signalling by Engaging the NMDA-R/LRP1 Receptor Complex". Rome, Italy. June 16, 2022.
Gordon Research Conferences in Plasminogen Activation and Extracellular Proteolysis. "Non-pathogenic Cellular Prion Protein Activates Cell-signaling via the Tissue-type Plasminogen Activator Receptor Assembly". Ventura, CA. Oct 30 - Nov 4, 2022.
UC San Diego Pathology Research Retreat "A synthetic peptide corresponding to the LRP1 recognition motif in cellular prion protein replicates the cell-signaling activity of full-length protein". La Jolla, California. August 12, 2023.
Gordon Research Conferences in Plasminogen Activation and Extracellular Proteolysis. "Plasminogen Activator Receptors as Regulators of Cell Physiology". Ventura, CA. Feb 18-23, 2024.

Publications

Full-length papers:

1. Calderone V, Giorgi I, Livi O, Martinotti E, **Mantuano E**, Martelli A, Nardi A. Benzoyl and/or benzyl substituted 1,2,3-triazoles as potassium channel activators. VIII. European Journal of Medicinal Chemistry. 2005 Jun;40(6):521-8.
2. Gallo D, **Mantuano E**, Fabrizi M, Ferlini C, Mozzetti S, De Stefano I, Scambia G. Effects of a phytoestrogen-containing soy extract on the growth-inhibitory activity of ICI 182 780 in an experimental model of estrogen-dependent breast cancer. Endocrine Related Cancer. 2007 Jun;14(2):317-24.

3. Gallo D, Zannoni GF, Fabrizi M, De Stefano I, **Mantuano E**, Scambia G. Comparative effects of 17beta-estradiol and phytoestrogens in the regulation of endometrial functions in the rodent uterus. J Endocrinol Invest. 2008 Jan;31(1):48-56.
4. Gallo D, Battaglia A, **Mantuano E**, Travaglia D, De Stefano I, Buzzonetti A, Scambia G. 17beta-Estradiol and soy phytochemicals selectively induce a type 2 polarization in mesenteric lymph nodes of ovariectomized rats. Menopause. 2008 Jul-Aug;15(4 Pt 1):718-25.
5. **Mantuano E**, Mukandala G, Li X, Campana WM, Gonias SL. Molecular dissection of the human alpha2-macroglobulin subunit reveals domains with antagonistic activities in cell signaling. Journal of Biological Chemistry. 2008 Jul 18;283(29):19904-11
6. Gallo D, Zannoni GF, De Stefano I, Mosca M, Ferlini C, **Mantuano E**, Scambia G. Soy phytochemicals decrease non small cell lung cancer growth in female athymic mice. The Journal of Nutrition. 2008 Jul;138(7):1360-4.
7. **Mantuano E**, Inoue G, Li X, Takahashi K, Gaultier A, Gonias SL, Campana WM. The hemopexin domain of matrix metalloproteinase-9 activates cell signaling and promotes migration of Schwann cells by binding to low-density lipoprotein receptor-related protein. Journal of Neuroscience. 2008 Nov 5;28(45):11571-82.
8. Shi Y, **Mantuano E**, Inoue G, Campana WM, Gonias SL. Ligand binding to LRP1 transactivates Trk receptors by a Src family kinase-dependent pathway. Science Signaling. 2009 Apr 28;2(68):ra18.
9. Inoue G, Gaultier A, Li X, **Mantuano E**, Richardson G, Takahashi K, Campana WM. Erythropoietin promotes Schwann cell migration and assembly of the provisional extracellular matrix by recruiting beta1 integrin to the cell surface. Glia. 2010 Mar;58(4):399-409.
10. **Mantuano E**, Jo M, Gonias SL, Campana WM. Low density lipoprotein receptor-related protein (LRP1) regulates Rac1 and RhoA reciprocally to control Schwann cell adhesion and migration. Journal of Biological Chemistry. 2010 May 7;285(19):14259-66.
11. **Mantuano E**, Henry K, Yamauchi T, Hiramatsu H, Yamauchi K, Sumihisa O, Jonathan HL, Gonias SL, Campana WM. The Unfolded Protein Response is a Major Mechanism by which LRP1 Regulates Schwann Cell Survival After Injury. Journal of Neuroscience. 2011. Sep 21;31(38):13376-13385.
12. Capozzi A, **Mantuano E**, Matarrese P, Saccomanni G, Manera C, Mattei V, Gambardella L, Malorni W, Sorice M, Misasi R. A new 4-phenyl-1,8-naphthyridine derivative affects carcinoma cell proliferation by impairing cell cycle progression and inducing apoptosis. Anti-Cancer Agents in Medicinal Chemistry. 2012. Jul 1;12(6):653-62. (*The first two authors provided an equal contribution)
13. Stiles T, Dickendeshe T, Gaultier A, Fernandez-Castaneda A, **Mantuano E**, Giger RJ, Gonias SL. LDL Receptor-related Protein-1 is a sialic acid-independent receptor for myelin-associated glycoprotein (MAG) that functions in neurite outgrowth inhibition by MAG and CNS myelin. Journal of Cell Science. 2012 Nov 6
14. Orita S, Henry K, **Mantuano E**, Yamauchi K, De Corato A, Ichikawa T, Feltri ML, Wrabetz L, Gaultier A, Pollack M, Ellisman M, Takahashi K, Gonias SL, Campana WM. Schwann cell LRP1 regulates Remak bundle ultrastructure and axonal interactions to prevent neuropathic pain. Journal of Neuroscience. 2013 Mar 27;33(13):5590-602.
15. Yamauchi K, Yamauchi T, **Mantuano E**, Murakami K, Henry K, Takahashi K, Campana WM. Low-Density Lipoprotein Receptor Related protein-1 (LRP1)-Dependent Cell

- Signaling Promotes Neurotrophic Activity in Embryonic Sensory Neurons. PLoS One. 2013 Sept; 8(9):e75497.
16. **Mantuano E**, Lam MS, Gonias SL. LRP1 assembles unique co-receptor systems to initiate cell signaling in response to tissue-type plasminogen activator and myelin-associated glycoprotein. Journal of Biological Chemistry. 2013 Nov 22;288(47):34009-18
 17. Gupta S, Hau AM, Beach JR, Harwalker J, **Mantuano E**, Gonias SL, Egelhoff TT, Hansel DE. Mammalian target of rapamycin complex 2 (mTORC2) is a critical determinant of bladder cancer invasion. PLoS One. 2013 Nov 27;8(11):e81081.
 18. **Mantuano E**, Tasciotti V, Garofalo T, Sorice M, Misasi R, Mattei V. PrP^C associates with a multimolecular complex including LRP1 and glycosphingolipids within lipid rafts. The FASEB Journal. 2014 vol. 28 no. 1 Supplement 601.1
 19. Avolio E, Mahata SK, **Mantuano E**, Mele M, Alò R, Facciolo RM, Talani G, Canonaco M. Antihypertensive and neuroprotective effects of catestatin in spontaneously hypertensive rats: interaction with GABAergic transmission in amygdala and brainstem. Neuroscience. 2014 Jun 13;270:48-57.
 20. **Mantuano E**, Lam MS, Shibayama M, Campana WM, Gonias SL. The NMDA receptor functions independently and as an LRP1 co-receptor to promote Schwann cell survival and migration. Journal Cell Science. 2015 Sep 15;128(18):3478-88.
 21. **Mantuano E**, Brifault C, Lam MS, Azmoon P, Gilder AS, Gonias SL. LDL receptor-related protein-1 regulates NFκB and microRNA-155 in macrophages to control the inflammatory response. PNAS, Proceedings of the National Academy of Sciences USA. 2016 Feb 2;113(5):1369-74.
 22. Laudati E, Gilder AS, Lam MS, Misasi R, Sorice M, Gonias SL, **Mantuano E***. The activities of LDL Receptor-related Protein-1 (LRP1) compartmentalize into distinct plasma membrane microdomains. Molecular and Cellular Neuroscience. 2016 Oct;76:42-51.
(*Corresponding Author)
 23. Flütsch A, Henry K, **Mantuano E**, Lam MS, Shibayama M, Takahashi K, Gonias SL, Campana WM. Evidence that LDL receptor-related protein 1 acts as an early injury detection receptor and activates c-Jun in Schwann cells. Neuroreport. 2016 Dec 14;27(18):1305-1311.
 24. Campana WM, **Mantuano E**, Azmoon P, Henry K, Banki M, Kim JH, Pizzo DP, Gonias SL. Ionotropic glutamate receptors activate cell signaling in response to glutamate in Schwann cells. The FASEB Journal. 2017 Jan 10.
 25. **Mantuano E**, Azmoon P, Brifault C, Banki MA, Gilder AS, Campana WM, Gonias SL. Tissue-type plasminogen activator regulates macrophage activation and innate immunity. Blood. 2017 Sep 14;130(11):1364-1374.
Highlighted Article and Commentary: Miles LA and Parmer RJ. tPA and anger management for macrophages. Blood. 2017.
 26. Gonias SL, Karimi-Mostowfi N, Murray SS, **Mantuano E**, Gilder AS. Expression of LDL receptor-related proteins (LRPs) in common solid malignancies correlates with patient survival. PLoS One. 2017 Oct 31;12(10):e0186649.
 27. Gilder AS, Natali L, Van Dyk DM, Zalfa C, Banki MA, Pizzo DP, Wang H, Klemke RL, **Mantuano E**, Gonias SL. The Urokinase Receptor Induces a Mesenchymal Gene Expression Signature in Glioblastoma Cells and Promotes Tumor Cell Survival in Neurospheres. Sci Rep. 2018 Feb 14;8(1):2982.

28. Gonias SL, Banki MA, Gilder AS, Azmoon P, Campana WM, **Mantuano E**. PAI1 blocks effects of tissue-type plasminogen activator on cell-signaling and physiology mediated by the NMDA receptor. J Cell Sci. 2018 Jul 26;131(14).
29. Zalfa C, Azmoon P, **Mantuano E***, Gonias SL. Tissue-type plasminogen activator neutralizes LPS but not protease-activated receptor-mediated inflammatory responses to plasmin. J Leukoc Biol. 2019 Apr;105(4):729-740. (***Co-corresponding Author**)
30. Das L, Azmoon P, Banki MA, **Mantuano E**, Gonias SL. Tissue-type plasminogen activator selectively inhibits multiple toll-like receptors in CSF-1-differentiated macrophages. PLoS One. 2019 Nov 7;14(11):e0224738.
31. Pontecorvi P, Banki MA, Zampieri C, Zalfa C, Azmoon P, Kounnas MZ, Marchese C, Gonias SL, **Mantuano E***. Fibrinolysis protease receptors promote activation of astrocytes to express pro-inflammatory cytokines. J Neuroinflammation. 2019 Dec 6;16(1):257. (***Corresponding Author**)
32. Mattei V, Manganelli V, Martellucci S, Capozzi A, **Mantuano E**, Longo A, Ferri A, Garofalo T, Sorice M, Misasi R. A multimolecular signaling complex including PrPC and LRP1 is strictly dependent on lipid rafts and is essential for the function of tissue plasminogen activator. J Neurochem. 2020 Feb;152(4):468-481.
33. **Mantuano E***, Azmoon P, Banki MA, Lam MS, Sigurdson CJ, Gonias SL. A soluble derivative of PrPC activates cell-signaling and regulates cell physiology through LRP1 and the NMDA receptor. J Biol Chem. 2020 Oct 9;295(41):14178-14188. (***Corresponding Author**)
34. **Mantuano E***, Azmoon P, Banki MA, Sigurdson CJ, Campana WM, Gonias SL. A Soluble PrPC Derivative and Membrane-Anchored PrPC in Extracellular Vesicles Attenuate Innate Immunity by Engaging the NMDA-R/LRP1 Receptor Complex. Mantuano E, Azmoon P, Banki MA, Sigurdson CJ, Campana WM, Gonias SL. J Immunol. 2022 Jan 1;208(1):85-96. (***Corresponding Author**)
35. Gonias SL, Banki MA, Azmoon P, Romero HK, Sigurdson CJ, **Mantuano, E**, Campana WM,. Cellular prion protein in human plasma-derived extracellular vesicles promotes neurite outgrowth via the NMDA receptor-LRP1 receptor system. J Biol Chem 2022 Mar;298(3):101642.
36. **Mantuano E***, Azmoon P, Banki MA, Gunner CB, Gonias SL. The LRP1/CD91 ligands, tissue-type plasminogen activator, α 2-macroglobulin, and soluble cellular prion protein have distinct co-receptor requirements for activation of cell-signaling. Scientific Reports. 2022 Oct 20;12(1):17594. (***Corresponding Author**)
37. Gunner CB, Azmoon P, **Mantuano E**, Das L, Zampieri C, Pizzo SV, Gonias SL. An antibody that targets cell-surface glucose-regulated protein-78 inhibits expression of inflammatory cytokines and plasminogen activator inhibitors by macrophages. J Cell Biochem. 2023 May;124(5):743-752.
38. **Mantuano E***, Zampieri C, Azmoon P, Gunner CB, Heye KR, Gonias SL. An LRP1-binding motif in cellular prion protein replicates the cell-signaling activity of the full-length protein. JCI insight. 2023 Aug 8;8(15):e170121. (***Corresponding Author**)
39. Martellucci S, Flüttsch A, **Mantuano E**, Norimoto M, Takahashi K, Gonias SL, Campana WM. Axon-derived PACSIN1 binds to the Schwann cell survival receptor, LRP1, and transactivates TrkC to promote gliatrophic activities. Glia. 2024 Feb 19. doi: 10.1002/glia.24510.

40. **Mantuano E***, Azmoon P, Poudel B, Zampieri C, Gonias SL. LRP1 and p75 Neurotrophin Receptor Collaborate to Trigger Pro-inflammatory Cell-signaling in Response to Extracellular Tau. *Submitted to Science Signaling*. (***Corresponding Author**) <https://doi.org/10.1101/2023.10.06.561299>.

Abstracts and Invited Talks:

1. **Mantuano, E**, Biagi, G, Calderone, V, Giorgi, I, Livi, O, Martinotti, E, Nardi, A, Nuovi attivatori dei canali al potassio calcio-attivati e a grande conduttanza: sintesi e valutazione farmacologica, XXVII Convegno Interregionale (TUMA). Terni, Italy. 10-12, September atti del convegno, pg 6. Presented minisymposium.
2. **Mantuano, E**, Biagi, G, Calderone, V, Giorgi, I, Livi, O, Martinotti, E, Nardi, A, "Nuovi attivatori dei canali BK: sintesi e valutazione farmacologica di derivati 1,2,3-triazolici", Annual Scientific Meeting of Chemistry Italian Society (SCI). Perugia, Italy. 12 December 2003 atti del convegno, pg.16-17. **Invited Speaker**.
3. **Mantuano, E**, Biagi, G, Giorgi, I, Livi, O, Nardi, A, "New adenine-like derivatives as ligands for A3 adenosine receptors", 4° Sigma Aldrich Young Chemists Symposium (SAYCS). Riccione, Italy. 17-19 May 2004. September Proceedings of the Meeting, pg.49. Poster Communication.
4. **Mantuano, E**. "Synthesis and Anticancer evaluation of 1,8 Naphtyridine Derivatives" European School of Medicinal Chemistry (ESMEC). XXV Advanced Course of Medicinal Chemistry and "E.Duranti" National Seminar for PhD Students. Urbino, Italy. July 1-7, 2006. Poster Communication and Lecture
5. **Mantuano, E**. "Effects on microtubules and antitumor activity by newly synthesized 1,8-naphtyridine derivatives" The American Society for Cell Biology, 46th Annual Meeting. Dec 9-13 2006 San Diego, CA. Poster Communication.
6. **Mantuano E**, Saccomanni G, Manera C, Chicca A, Martinotti E, Misasi R, Ferrarini PL. "Synthesis and antitumor evaluation of 1,8-naphtyridine derivatives". 5th Joint Meeting on Medicinal Chemistry 2007 (JMMC2007). June 17-21, 2007, Portorož, Slovenia. Poster Communication.
7. **Mantuano E**, Campana WM, and Gonias SL. Molecular Dissection of the Human α 2-Macroglobulin Subunit Reveals Domains with Opposing Activities in Cell Signaling. Gordon Research Conferences 2008, Feb 10-15 Ventura, CA. Poster Communication and **Invited Speaker**.
8. **Mantuano E**, Li X, Gonias SL., Inoue G, Takahashi K, Campana WM. Low density lipoprotein receptor related protein-1 (LRP-1) is essential for Schwann cell migration under basal conditions and in response to matrix metalloproteinase-9. Neuroscience 2008, Nov 15-19 Washington, DC. Poster Communication and Lecture
9. Inoue G, Gaultier A, Li X, **Mantuano E**, Richardson K, Takahashi K, Campana WM. Erythropoietin promotes fibronectin expression and interaction of Schwann cells with the provisional extracellular matrix in peripheral nerve injury. Neuroscience 2008, Nov 15-19 Washington, DC. Poster Communication.
10. **Mantuano E**, Jo M, Gonias SL, Campana WM. LRP-1 Regulates Schwann Cell Motility by its Effects of the GTPases, Rac1 and Rho. PNS 2009, July 4-8 Würzburg, Germany. Platform presentation and Poster Communication and Lecture. J. Peripheral Nervous System 14 (Supplement 2):95-96, 2009

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12. **Mantuano E**, Jo M, Gonias SL, Campana WM. Rac1 and RhoA are regulated reciprocally downstream of low density lipoprotein receptor-related protein (LRP1) to control Schwann cell adhesion and migration. Gordon Research Conferences 2010, Feb 10-15 Ventura, CA. Poster Communication.
13. **Mantuano E**, Yamauchi K, Yamauchi T, Henry K, Gonias SL, Campana WM. The Unfolded Protein Response is a Major Mechanism by which LRP1 Promotes Schwann Cell Survival after Injury. Biennial Meeting of the Peripheral Nerve Society, June 25-29 Maryland. Platform presentation, Poster Communication and Lecture. J. Peripheral Nervous System 16:S82-83, 2011
14. **Mantuano E**, Henry K, Yamauchi K, Yamauchi T, Gaultier A, Feltri ML, Gonias SL, Campana WM. LRP1 Gene Deletion Links Myelinating Schwann Cell Survival to the Prevention of Chronic Neuropathic Pain. Biennial Meeting of the Peripheral Nerve Society, June 25-29 Maryland. Platform presentation and Poster Communication J. Peripheral Nervous System 16:S82, 2011
15. Tuszynski M, Yoon C, **Mantuano E**, Campana WM. Lipoprotein receptor activation: A novel mechanism for enhancing axonal plasticity and regeneration after spinal cord injury Neuroscience 2011, Nov 12-16 Washington, DC. Poster Communication.
16. Campana WM, **Mantuano E**, Yamauchi K, Yamauchi T, De Corato A, Feltri ML, Wrabetz L, Gaultier A, Gonias SL, Henry K. LRP1 Gene deletion in myelinating Schwann cells induces Schwann cell death and chronic neuropathic pain. Neuroscience 2011, Nov 12-16 Washington, DC. Poster Communication.
17. **Mantuano E**, Stiles T, Hicks D, Gonias SL. Ligand-specific Co-receptor Recruitment Determines the Signaling Activity of LRP1 in Response to Tissue-type Plasminogen Activator and Myelin-associated Glycoprotein. XIVth International Workshop on Molecular and Cellular Biology of Plasminogen Activation June 4-8 2013 Notre Dame, IN. **Invited Speaker.**
18. **Mantuano E**, Misasi R, Gonias SL. LRP1 signaling in neurons and neurite-generating cell lines is determined by ligand-specific co-receptors engagement. SIPMET/ASIP American Society for Investigative Pathology Young scientists meeting 2013, Oct 23-24 Rome, Italy. **Invited Speaker** and Poster Communication.
19. **Mantuano E**, Lam MS, Gonias SL. LRP1 signaling in neurons and neurite-generating cell lines is determined by ligand-specific co-receptor engagement. Neuroscience 2013, Nov 9-13 San Diego, CA. Poster Communication and Lecture.
20. **Mantuano E**, Lam MS, Gonias SL. LRP1 assembles unique co-receptor systems to initiate cell signaling in response to tissue type plasminogen activator and myelin-associated glycoprotein. Gordon Research Conferences 2014, Feb 9-14 Ventura, CA. Poster Communication and **Invited Speaker.**
21. **Mantuano E**, Tasciotti V, Garofalo T, Sorice M, Misasi R, Mattei V. PrP^C associates with a multimolecular complex including LRP1 and glycosphingolipids within lipid rafts. Annual 2014 Meeting of the American Society for Investigative Pathology (ASIP). April 26-30 San Diego, CA. Poster Communication and Lecture. The FASEB Journal vol. 28 no. 1 Supplement 601.1

22. **Mantuano E**, Mattei V, Tasciotti V, Garofalo T, Sorice M, Misasi R, Gonias SL. LRP1 activates ERK1/2 in lipid rafts in neuron-like cells. Neuroscience 2014, Nov 15-19 Washington, DC. Poster Communication and Lecture.
23. **Mantuano E**, Brifault C, Lam MS, Gilder AS, Gonias SL. LDL receptor-related protein-1 attenuates innate immunity by regulating NFkB. XVth International Workshop Molecular and Cellular Biology of Plasminogen Activation, September 22-26, 2015 Notre Dame Rome Global Gateway, Rome, Italy. Poster Communication and **Invited Speaker**.
24. Laudati E, Gilder SA, Lam SM, Misasi R, Sorice M, Gonias SL, **Mantuano E**. Lipid raft disruption selectively blocks the cell-signaling activity of LRP1 in neuron-like cells. Gordon Research Conferences 2016, Feb 14-19 Ventura, CA. Poster Communication and **Invited Speaker**.
25. Natali L, Gilder SA, **Mantuano E** and Gonias SL. The Urokinase Receptor is Selectively Expressed in Neurospheres Formed by Glioblastoma Cells. Gordon Research Conferences 2016, Feb 14-19 Ventura, CA. Poster Communication.
26. Laudati E, Gilder AS, Lam MS, Gonias SL, **Mantuano E**. Lipid Raft Disruption Selectively Blocks the Cell-Signaling Activity of LRP1 in Neuron-Like Cells. Experimental Biology 2016 April 2-6 San Diego, CA. Poster Communication. The FASEB Journal vol. 30 no. 1 Supplement lb88.
27. Campana WM, Henry KW, **Mantuano E**, Gonias SL. Ionotropic glutamate receptor-triggered cell signaling in Schwann cells. Neuroscience 2016. San Diego, CA. Nov 12-16 Poster Communication.
28. Flütsch A, Gilder AS, Henry KW, **Mantuano E**, Gonias SL, Campana WM. Identification of proteins that bind to LDL Receptor-related Protein-1 (LRP1) in Schwann cells and activate c-Jun *In vitro* and *In vivo*. Neuroscience 2016. San Diego, CA. Nov 12-16 Poster Communication.
29. Laudati E, Gilder AS, Lam MS, Misasi R, Sorice M, Gonias SL, **Mantuano E**. LRP1 signaling occurs in lipid rafts. Neuroscience 2016. San Diego, CA. Nov 12-16 Poster Communication and Lecture.
30. Gilder AS, Natali L, Van Dyk DM, Zalfa C, Banki MA, Pizzo DP, Wang H, Klemke RL, **Mantuano E**, Gonias SL. The urokinase receptor drives a mesenchymal gene expression profile in glioblastoma neurospheres. Gordon Research Conferences 2018, Feb 11-16 Ventura, CA. Poster Communication.
31. Martellucci S, Manganelli V, Santilli F, Mei C, Ferri A, **Mantuano E**, Garofalo T, Sorice M, Misasi R, Mattei V. Neuritogenic signal pathway of tPA mediated by the multimolecular complex containing PrPC and LRP1 is dependent on lipid rafts. Experimental Biology 2020. April 16 San Diego, CA. Oral and Poster Presentations. The FASEB Journal Volume 34, Issue S1.
32. **Mantuano E**, Azmoon P, Banki MA, Lam MS, Sigurdson CJ, Gonias SL. A Soluble Derivative of PrPc Promotes Cell-Signaling and Regulates Cell Physiology by a Pathway That Requires LRP1 and the NMDA Receptor. 2020 UC San Diego Pathology Research Retreat, August 15 La Jolla, CA. **Invited Speaker**.
33. **Mantuano E**, Azmoon P, Gonias SL. A soluble PrPC derivative and membrane-anchored PrPC in extracellular vesicles regulate innate immunity by engaging the NMDA-R/LRP1 receptor complex. 2021 UC San Diego Pathology Research Retreat, August 21 La Jolla, CA. **Invited Speaker**.
34. **Mantuano E**. A Soluble Derivative of Cellular Prion Protein and Cellular Prion Protein in Extracellular Vesicles Activate Cell-Signalling by Engaging the NMDA-R/LRP1 Receptor

Complex. International Conference on Regenerative Medicine 2022, June 16, Rome Italy.
Invited Speaker.

35. **Mantuano E.** Non-pathogenic Cellular Prion Protein Activates Cell-signaling via the Tissue-type Plasminogen Activator Receptor Assembly. Gordon Research Conferences 2022, Oct 30 - Nov 4 Ventura, CA. ***Invited Speaker.***