

Curriculum vitae Guido Serini

Personal details

Born in Torino, May 13th, 1968

Nationality: Italian

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Education

1999 - PhD degree in Human Oncology, University of Torino School of Medicine, Italy.

Supervisor: Prof. Pier Carlo Marchisio.

1993 – MD degree in Medicine and Surgery, University of Torino, *summa cum laude*

Professional experiences and current position

2019 - present - Professor, Dept. of Oncology, University of Torino, Italy

2009 - present - Director, Laboratory of Cell Adhesion Dynamics, Candiolo Cancer Institute, Italy

2018 - 2019 - Associate Professor, Dept. of Oncology, University of Torino, Italy

2005 - 2018 - Assistant Professor, Dept. of Oncology, University of Torino, Torino, Italy

2004 - 2008 - Principal Investigator, Div. of Molecular Angiogenesis, Candiolo Cancer Institute, Italy

2001 - 2003 - Senior Research Associate, Div. of Molecular Angiogenesis, Candiolo Cancer Institute, Italy. Supervisor: Prof. Federico Bussolino

1999 - 2000 - Postdoctoral Fellow, Div. of Molecular Angiogenesis, Candiolo Cancer Institute, Italy. Supervisor: Prof. Federico Bussolino.

1998 - 1999 - Research Fellow, Dept. of Biological and Technological Research, San Raffaele Scientific Institute, Milano, Italy. Supervisor: Prof. Pier Carlo Marchisio.

1994 - 1998 - Research Fellow, Dept. of Pathology, Centre Médical Universitaire (CMU), University of Geneva School of Medicine, Switzerland. Supervisor: Prof. Giulio Gabbiani.

1993 - 1994 - Research Fellow, Dept. of Biological and Technological Research, San Raffaele Scientific Institute, Milano, Italy. Supervisor: Prof. Pier Carlo Marchisio.

Participation to Directive Boards of Scientific Societies and/or Institutions:

2018 - present - Faculty Member, Faculty Opinion (former Faculty of 1000) - Faculty of Physiology, Section of Cardiovascular Physiology and Circulation

2010 - 2017 - Associate Faculty Member, Faculty Opinion (former Faculty of 1000) - Faculty of Physiology Section of Cardiovascular Physiology and Circulation

Honors

2004 - Young Researcher Award, Guido Berlucci Foundation for Cancer Research, Borgonato di Corte Franca (BS), Italy

1994-1997 - Fondation pour des bourses d'études italo-suissees (Lausanne, Switzerland), Research Fellow

Teaching activity:

2008 – present: Chair of Clinical Biochemistry, University of Torino School of Medicine (Second Medical School at San Luigi Gonzaga Hospital, Orbassano, TO).

2022 – present: Chair of Clinical Biochemistry, University of Torino School of Medicine (First Medical School at Molinette Hospital, Torino).

2012 - 2023: Chair of Clinical Biochemistry, Bachelor of Arts in Biomedical Laboratory Techniques at Cuneo, University of Torino School of Medicine.

- 2020 – present:** Chair of General Biochemistry, University of Torino School of Medicine (First Medical School at Molinette Hospital, Torino).
- 2006 - present:** Chair of Clinical Biochemistry, Post-graduate School of Psychiatry, University of Torino School of Medicine (First Medical School at Molinette Hospital, Torino).
- 2006 - present:** Chair of Clinical Biochemistry, Post-graduate School of Endocrinology and Metabolism, University of Torino School of Medicine (First Medical School at Molinette Hospital, Torino).
- 2020 - present:** Chair of Clinical Biochemistry, Post-graduate School of Hematology, University of Torino School of Medicine (First Medical School at Molinette Hospital, Torino).
- 2009 - 2023:** Chair of Clinical Biochemistry of Nutrition, Bachelor of Science in Food and Human Nutrition, University of Torino School of Mathematical, Physical and Natural Sciences, and University of Torino School of Medicine (First Medical School at Molinette Hospital, Torino).
- 2008 - present:** Faculty Member and Tutor, Ph.D. Programme Complex Systems for Quantitative Biomedicine (former Complex Systems in Life Sciences), University of Torino.

Research main topics

Cell adhesion dynamics - Integrins and extracellular matrix – Axon guidance cues – Traffic – Endothelial cells - Developmental and cancer angiogenesis

Main projects as PI:

Over the last two decades, Guido Serini and his collaborators investigated the molecular and cellular mechanisms that control integrin-mediated cell adhesion to the extracellular matrix (ECM) and the role of ECM/integrin signaling in cancer progression and angiogenesis, with a particular focus on axon guidance cues, such as Semaphorins (SEMA; Serini et al., 2003; Maione et al., 2009; Regano et al., 2017), and ECM/integrin traffic (Valdembri et al., 2009; Sandri et al., 2012; Mana et al., 2016; Villari et al., 2020). His lab created an easily purifiable superagonist SEMA3A protein isoform that represents a parenterally-deliverable drug that effectively normalizes the cancer vasculature (Gioelli et al., 2018). More recently, his lab kept identifying new additional extracellular ligands that can be pharmacologically targeted to normalize the cancer vasculature. They unveiled how the endothelial ligand fibronectin-leucine-rich transmembrane 2 (FLRT2) signals via its receptor Latrophilin 2 (LPHN2) to physiologically control vascular permeability by simultaneously hindering integrin activation and fostering intercellular adhesion (Camillo et al., 2021). The further observation that the lack of FLRT2/LPHN2 signaling in vivo results in a vascular hyperpermeability that fosters circulating cancer cell extravasation suggests that recombinant FLRT2 may be therapeutically exploited to interfere with cancer metastatic dissemination (Camillo et al., 2021). They also showed that the tryptophanyl-tRNA synthetase splicing variant mini-WARS extracellularly binds the adhesion receptor endocytic chaperone Neuropilin 1 (NRP1) and behaves as a NRP1 inhibitory ligand that effectively hinders VE-cadherin endocytosis and endothelial permeability when overexpressed in cultured cells (Gioelli, et al. 2022).

Bibliometry (1995-present) (www.scopus.com)

Articles 90, Citations 5863, H-index 40

Publications

Villari, G., **Serini, G.**

Endothelial autophagy blockade fosters anti-cancer immunity.

(2024) *EMBO Molecular Medicine*, 16(1):1-3.

DOI: 10.1038/s44321-023-00005-x.

Folcher, A., Gordienko, D., Iamshanova, O., Bokhobza, A., Shapovalov, G., Kannancheri-Puthooru, D., Mariot, P., Allart, L., Desruelles, E., Spriet, C., Diez, R., Oullier, T., Marionneau-Lambot, S., Brisson, L., Geraci, S., Impheng, H., Lehen'kyi, V., Haustrate, A., Mihalache, A., Gosset, P., Chadet, S., Retif, S., Laube, M., Sobilo, J., Lerondel, S., Villari, G., **Serini, G.**, Pla, A.F., Roger, S., Fromont-Hankard, G., Djamgoz, M., Clezardin, P., Monteil, A., Prevarskaya, N.

NALCN-mediated sodium influx confers metastatic prostate cancer cell invasiveness.

(2023) *EMBO Journal*, 42(13):e112198.

DOI: 10.15252/embj.2022112198

Mana, G., Valdembri, D., Askari, J.A., Li, Z., Caswell, P., Zhu, C., Humphries, M.J., Ballestrem, C., **Serini, G.**

The β I domain promotes active β 1 integrin clustering into mature adhesion sites

(2023) *Life Science Alliance*, 6 (2).

DOI: 10.26508/lsa.202201388

Pergolizzi, M., Bizzozero, L., Maione, F., Maldì, E., Isella, C., Macagno, M., Mariella, E., Bardelli, A., Medico, E., Marchiò, C., **Serini, G.**, Di Nicolantonio, F., Bussolino, F., Aresè, M.

The neuronal protein Neuroligin 1 promotes colorectal cancer progression by modulating the APC/ β -catenin pathway

(2022) *Journal of Experimental and Clinical Cancer Research*, 41 (1), art. no. 266.

DOI: 10.1186/s13046-022-02465-4

Astanina, E., Doronzo, G., Corà, D., Neri, F., Oliviero, S., Genova, T., Mussano, F., Middonti, E., Vallariello, E., Cencioni, C., Valdembri, D., **Serini, G.**, Limana, F., Foglio, E., Ballabio, A., Bussolino, F.

The TFEB-TGIF1 axis regulates EMT in mouse epicardial cells

(2022) *Nature Communications*, 13 (1), art. no. 5191.

DOI: 10.1038/s41467-022-32855-3

Gioelli, N., Neilson, L.J., Wei, N., Villari, G., Chen, W., Kuhle, B., Ehling, M., Maione, F., Willox, S., Brundu, S., Avanzato, D., Koulouras, G., Mazzone, M., Giraudo, E., Yang, X.-L., Valdembri, D., Zanivan, S., **Serini, G.**

Neuropilin 1 and its inhibitory ligand mini-tryptophanyl-tRNA synthetase inversely regulate VE-cadherin turnover and vascular permeability

(2022) *Nature Communications*, 13 (1), art. no. 4188.

DOI: 10.1038/s41467-022-31904-1

Ariano, C., Riganti, C., Corà, D., Valdembri, D., Mana, G., Astanina, E., **Serini, G.**, Bussolino, F., Doronzo, G.

TFEB controls integrin-mediated endothelial cell adhesion by the regulation of cholesterol metabolism

(2022) *Angiogenesis*, 25 (4), pp. 471-492.

DOI: 10.1007/s10456-022-09840-x

Cerqua, M., Botti, O., Arigoni, M., Gioelli, N., **Serini, G.**, Calogero, R., Boccaccio, C., Comoglio, P.M., Altintas, D.M.

META14 promotes a ligand-dependent, AKT-driven invasive growth

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DOI: 10.26508/lsa.202201409

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p140Cap Regulates the Composition and Localization of the NMDAR Complex in Synaptic Lipid Rafts

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DOI: 10.1523/JNEUROSCI.1775-21.2022

Villari, G., Gioelli, N., Valdembri, D., **Serini, G.**

Vesicle choreographies keep up cell-to-extracellular matrix adhesion dynamics in polarized epithelial and endothelial cells

(2022) *Matrix Biology*, 112, pp. 62-71. Review

DOI: 10.1016/j.matbio.2022.08.003

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An electrical impedance-based method for quantitative real-time analysis of semaphorin-elicited endothelial cell collapse
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DOI: 10.15252/emmm.201505551

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Linifanib: Current status and future potential in cancer therapy
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Endothelial podosome rosettes regulate vascular branching in tumour angiogenesis
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