Curriculum vitae

Francesca Silvagno

Personal details

Born in Italy
Nationality: Italian
Email: francesca.silvagno@unito.it
Website: https://www.oncology.unito.it/do/docenti.pl/Show?_id=fsilvagn#tab-profilo
ORCID ID: 0000-0002-8800-9135; Scopus ID: 6602603190; Researcher ID: AFF-8747-2022

Educations

1993-1997: **Ph.D. in Biochemistry**, University of Torino, Italy. Title of the thesis: nitric oxide synthase in skeletal muscle.
1986-1991: **B.S. Degree in Biology**, University of Torino, Italy.

Professional experiences and current position

2022-present: **Associate Professor of Biochemistry**, Department of Oncology, University of Torino, Italy
2000-2022: **Assistant Professor of Biochemistry**, Department of Oncology, University of Torino, Italy
1998-2000: **post-doc fellowship**, European Community Marie Curie fellowship, TMR program. Working at Medical Research Council, Cambridge, UK.
1997-1998: **post-doc fellowship**, at the Department of Biology, section of Physiology, University of Torino, Italy.
1995-1997: **Visiting Scientist** at the University of California San Francisco, USA, Department of Physiology, under the supervision of Prof. David Bredt.
1991-1993: **post-graduate fellowship** at the Department of Genetics, Biology and Biochemistry, section of Biochemistry, University of Torino, Italy.

Honors

International Journal of Molecular Science 2019 Best Paper Award.

Teaching activity:

2004-present: **Biochemistry Course,** Biotechnology Degree, University of Torino, Italy.
2014-present: **Chemistry and Biochemistry Course,** Dietistic Degree, University of Torino, Italy.
2001-2006 and 2019-present: **Biochemistry Course,** Nursing Degree, University of Torino, Italy.
2014-2016: **Biochemistry Course,** School of Medicine, University of Torino, Italy.
2012- 2014: **Course of integrated laboratory techniques,** Biotechnology Degree, University of Torino, Italy.
2000- 2005: **Biochemical Methodologies Course,** Biotechnology Degree and School of Medicine, University of Torino, Italy.

Research main topics

1. The overall research interest in my laboratory is to investigate the effects and signaling pathways of several steroid hormones (DHEA, glucocorticoids, vitamin D) in cancer cell metabolism, growth and differentiation. The most recent studies elucidate the physiological and pathological role of vitamin D receptor (VDR) in mitochondria of proliferating and differentiated cells.
2. I am also interested in evaluating the effects of environmental signals on cell metabolism with a focus on cancer cell metabolism and proliferation. The most recent studies in this area describe the influence of temperature and the effects of the electromagnetic field.
3. Another research field is the study of protein expression in normal and cancer cells, focusing on the mechanisms driven by the cellular context.
4. In my laboratory the study of nutraceuticals is addressed by a biochemical approach. We investigate natural compounds with the aim of exploiting their beneficial effects on tissue metabolism and health.

Patents

Italian Patent (102016000083775, 09/08/2016) and International PCT/IB2017/054659 "Apparatus and method for the determination and the application of electromagnetic fields for influencing in vitro cell growth"

Bibliometry (1993-present) (*www.scopus.com*)

1.769 Citations by ***1,540*** documents; 179 Co-authors; 22 *h*-index

10 best publications

1. Vernone A, Bergandi L, Pernice S, Pescarmona G, **Silvagno F**. How the Competition for Cysteine May Promote Infection of SARS-CoV-2 by Triggering Oxidative Stress. Antioxidants (Basel). 2023 Feb 14;12(2):483. doi: 10.3390/antiox12020483.
2. Albergamo A, Apprato G, **Silvagno F**. The Role of Vitamin D in Supporting Health in the COVID-19 Era. Int J Mol Sci. 2022 Mar 25;23(7):3621. doi: 10.3390/ijms23073621.
3. Bergandi L, Apprato G, **Silvagno F.** Antioxidant and Anti-Inflammatory Activity of Combined Phycocyanin and Palmitoylethanolamide in Human Lung and Prostate Epithelial Cells. Antioxidants (Basel). 2022 Jan 21;11(2):201. doi: 10.3390/antiox11020201.
4. Fiz C, Apprato G, Ricca C, Aillon A, Bergandi L, **Silvagno F.** TGF Beta Induces Vitamin D Receptor and Modulates Mitochondrial Activity of Human Pancreatic Cancer Cells. Cancers (Basel). 2021 Jun 11;13(12):2932. doi: 10.3390/cancers13122932.
5. **Silvagno F**, Vernone A, Pescarmona GP. The Role of Glutathione in Protecting against the Severe Inflammatory Response Triggered by COVID-19. Antioxidants (Basel). 2020 Jul 16;9(7):624. doi:10.3390/antiox9070624.
6. Bergandi L, Lucia U, Grisolia G, Granata R, Gesmundo I, Ponzetto A, Paolucci E, Borchiellini R, Ghigo E, **Silvagno F**. The extremely low frequency electromagnetic stimulation selective for cancer cells elicits growth arrest through a metabolic shift. Biochim Biophys Acta Mol Cell Res. 2019 Sep;1866(9):1389-1397. doi: 10.1016/j.bbamcr.2019.05.006.
7. Villanova T, Gesmundo I, Audrito V, Vitale N, **Silvagno F**, Musuraca C, Righi L, Libener R, Riganti C, Bironzo P, Deaglio S, Papotti M, Cai R, Sha W, Ghigo E, Schally AV, Granata R. Antagonists of growth hormone-releasing hormone (GHRH) inhibit the growth of human malignant pleural mesothelioma. Proc Natl Acad Sci U S A. 2019 Feb 5;116(6):2226-2231. doi: 10.1073/pnas.1818865116. Epub 2019 Jan 18.
8. Ricca C, Aillon A, Viano M, Bergandi L, Aldieri E, **Silvagno F**. Vitamin D inhibits the epithelial-mesenchymal transition by a negative feedback regulation of TGF-β activity. J Steroid Biochem Mol Biol. 2019 Mar;187:97-105. doi: 10.1016/j.jsbmb.2018.11.006.
9. Ricca C, Aillon A, Bergandi L, Alotto D, Castagnoli C, **Silvagno F**. Vitamin D Receptor Is Necessary for Mitochondrial Function and Cell Health. Int J Mol Sci. 2018 Jun 5;19(6):1672. doi:10.3390/ijms19061672.
10. **Silvagno F**, Xia H, Bredt DS. Neuronal nitric-oxide synthase-mu, an alternatively spliced isoform expressed in differentiated skeletal muscle. J Biol Chem. 1996 May 10;271(19):11204-8. doi: 10.1074/jbc.271.19.11204.

15 more relevant publications in the last 5 years

1. Vernone A, Bergandi L, Pernice S, Pescarmona G, **Silvagno F**. How the Competition for Cysteine May Promote Infection of SARS-CoV-2 by Triggering Oxidative Stress. Antioxidants (Basel). 2023 Feb 14;12(2):483. doi: 10.3390/antiox12020483.
2. Bergandi L, Flutto T, Valentini S, Thedy L, Pramotton R, Zenato S, **Silvagno F.** Whey Derivatives and Galactooligosaccharides Stimulate the Wound Healing and the Function of Human Keratinocytes through the NF-kB and FOXO-1 Signaling Pathways. Nutrients. 2022 Jul 14;14(14):2888. doi:10.3390/nu14142888.
3. Bergandi L, Lucia U, Grisolia G, Salaroglio IC, Gesmundo I, Granata R, Borchiellini R, Ponzetto A, **Silvagno F.** Thermomagnetic Resonance Effect of the Extremely Low Frequency Electromagnetic Field on Three-Dimensional Cancer Models. Int J Mol Sci. 2022 Jul 19;23(14):7955. doi:10.3390/ijms23147955.
4. Albergamo A, Apprato G, **Silvagno F**. The Role of Vitamin D in Supporting Health in the COVID-19 Era. Int J Mol Sci. 2022 Mar 25;23(7):3621. doi: 10.3390/ijms23073621.
5. Bergandi L, Apprato G, **Silvagno F.** Antioxidant and Anti-Inflammatory Activity of Combined Phycocyanin and Palmitoylethanolamide in Human Lung and Prostate Epithelial Cells. Antioxidants (Basel). 2022 Jan 21;11(2):201. doi: 10.3390/antiox11020201.
6. Fiz C, Apprato G, Ricca C, Aillon A, Bergandi L, **Silvagno F.** TGF Beta Induces Vitamin D Receptor and Modulates Mitochondrial Activity of Human Pancreatic Cancer Cells. Cancers (Basel). 2021 Jun 11;13(12):2932. doi: 10.3390/cancers13122932.
7. Bergandi L, Apprato G, **Silvagno F**. Vitamin D and Beta-Glucans Synergically Stimulate Human Macrophage Activity. Int J Mol Sci. 2021 May 4;22(9):4869. doi: 10.3390/ijms22094869.
8. Vernone A, Ricca C, Pescarmona G, **Silvagno F.** Chromosome Walking: A Novel Approach to Analyse Amino Acid Content of Human Proteins Ordered by Gene Position. Applied Sciences. 2021; 11(8):3511. https://doi.org/10.3390/app11083511

9. Gesmundo I, **Silvagno F**, Banfi D, Monica V, Fanciulli A, Gamba G, Congiusta N, Libener R, Riganti C, Ghigo E, Granata R. Calcitriol Inhibits Viability and Proliferation in Human Malignant Pleural Mesothelioma Cells. Front Endocrinol (Lausanne). 2020 Oct 8;11:559586. doi:10.3389/fendo.2020.559586. eCollection 2020.
10. **Silvagno F**, Vernone A, Pescarmona GP. The Role of Glutathione in Protecting against the Severe Inflammatory Response Triggered by COVID-19. Antioxidants (Basel). 2020 Jul 16;9(7):624. doi:10.3390/antiox9070624.
11. Vernone A, Ricca C, Merlo D, Pescarmona G, **Silvagno F.** The analysis of glutamate and glutamine frequencies in human proteins as marker of tissue oxygenation. R Soc Open Sci. 2019 Apr 10;6(4):181891. doi: 10.1098/rsos.181891.
12. Bergandi L, Lucia U, Grisolia G, Granata R, Gesmundo I, Ponzetto A, Paolucci E, Borchiellini R, Ghigo E, **Silvagno F**. The extremely low frequency electromagnetic stimulation selective for cancer cells elicits growth arrest through a metabolic shift. Biochim Biophys Acta Mol Cell Res. 2019 Sep;1866(9):1389-1397. doi: 10.1016/j.bbamcr.2019.05.006.
13. Villanova T, Gesmundo I, Audrito V, Vitale N, **Silvagno F**, Musuraca C, Righi L, Libener R, Riganti C, Bironzo P, Deaglio S, Papotti M, Cai R, Sha W, Ghigo E, Schally AV, Granata R. Antagonists of growth hormone-releasing hormone (GHRH) inhibit the growth of human malignant pleural mesothelioma. Proc Natl Acad Sci U S A. 2019 Feb 5;116(6):2226-2231. doi: 10.1073/pnas.1818865116. Epub 2019 Jan 18.
14. Ricca C, Aillon A, Viano M, Bergandi L, Aldieri E, **Silvagno F**. Vitamin D inhibits the epithelial-mesenchymal transition by a negative feedback regulation of TGF-β activity. J Steroid Biochem Mol Biol. 2019 Mar;187:97-105. doi: 10.1016/j.jsbmb.2018.11.006.
15. Ricca C, Aillon A, Bergandi L, Alotto D, Castagnoli C, **Silvagno F**. Vitamin D Receptor Is Necessary for Mitochondrial Function and Cell Health. Int J Mol Sci. 2018 Jun 5;19(6):1672. doi:10.3390/ijms19061672.