

## CURRICULUM VITAE

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### FRANCESCA SILVAGNO

Birth date: 30/10/1967

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### Academic profile

2000-present: **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.

1993-1997: **Ph.D. in Biochemistry**, University of Torino, Italy. Title of the thesis: nitric oxide synthase in skeletal muscle.

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.

1986-1991: B.S. Degree in Biology, University of Torino, Italy.

### Research interests

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.

### Teaching experience

2000- 2005: **Biochemical Methodologies Course**, Biotechnology Degree and School of Medicine, University of Torino, Italy.

2001-2006 and 2019-2020: **Biochemistry Course**, Nursing Degree, University of Torino, Italy.

2004-present: **Biochemistry Course**, Biotechnology Degree, University of Torino, Italy.

2012- 2014: **Course of integrated laboratory techniques**, Biotechnology Degree, University of Torino, Italy.

2014-2016: **Special Biochemistry Course**, School of Medicine, University of Torino, Italy.

2014-present: **Chemistry and Biochemistry Course**, Dietistic Degree, University of Torino, Italy.

### Most recent publications

1. 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.

2. 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.
3. Bergandi L, Canosa S, Pittatore G, **Silvagno F**, Doublier S, Gennarelli G, Benedetto C, Revelli A. Human recombinant FSH induces chemoresistance in human breast cancer cells via HIF-1 $\alpha$  activation. *Biol Reprod*. 2019 Jun 1;100(6):1521-1535.
4. Bergandi L, Giuggia B, Alovisi M, Comba A, **Silvagno F**, Maule M, Aldieri E, Scotti N, Scacciarella P, Conrotto F, Berutti E, Pasqualini D. Endothelial Dysfunction Marker Variation in Young Adults with Chronic Apical Periodontitis before and after Endodontic Treatment. *J Endod*. 2019 May;45(5):500-506.
5. 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):2226-22316.
6. 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- $\beta$  activity. *J Steroid Biochem Mol Biol*. 2019 Mar;187:97-105.
7. 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). pii: E1672.
8. Viano M, Alotto D, Aillon A, Castagnoli C, **Silvagno F**. A thermal gradient modulates the oxidative metabolism and growth of human keratinocytes. *FEBS Open Bio*. 2017 Oct 24;7(12):1843-1853.
9. Lucia U, Grisolia G, Ponzetto A, **Silvagno F**. An engineering thermodynamic approach to select the electromagnetic wave effective on cell growth. *J Theor Biol*. 2017 Jun 29. pii: S0022-5193(17)30307-7.
10. **Silvagno F**, Pescarmona G. Spotlight on vitamin D receptor, lipid metabolism and mitochondria: Some preliminary emerging issues. *Mol Cell Endocrinol*. 2017 450:24-31.
11. Destefanis M, Viano M, Leo C, Gervino G, Ponzetto A, **Silvagno F**. Extremely low frequency electromagnetic fields affect proliferation and mitochondrial activity of human cancer cell lines. *Int J Radiat Biol*. 2015 91(12):964-72.
12. Lucia U, Grazzini G, Montrucchio B, Grisolia G, Borchiellini R, Gervino G, Castagnoli C, Ponzetto A, **Silvagno F**. Constructal thermodynamics combined with infrared experiments to evaluate temperature differences in cells. *Sci Rep*. 2015 Jun 23;5:11587.
13. Consiglio M, Viano M, Casarin S, Castagnoli C, Pescarmona G, **Silvagno F**. Mitochondrial and lipogenic effects of vitamin D on differentiating and proliferating human keratinocytes. *Exp Dermatol*. 2015 Oct;24(10):748-53.
14. Consiglio M, Destefanis M, Morena D, Foglizzo V, Forneris M, Pescarmona G, **Silvagno F**. The vitamin D receptor inhibits the respiratory chain, contributing to the metabolic switch that is essential for cancer cell proliferation. *PLoS One*. 2014 Dec 29;9(12):e115816.
15. **Silvagno F**, Consiglio M, Foglizzo V, Destefanis M, Pescarmona G. 2013 Mitochondrial translocation of vitamin d receptor is mediated by the permeability transition pore in human keratinocyte cell line. *PLoS One*. 8(1):e54716
16. D'Amelio P, Cristofaro MA, De Vivo E, Ravazzoli M, Grosso E, Di Bella S, Aime M, Cotto N, **Silvagno F**, Isaia G, Pescarmona GP. Platelet vitamin D receptor is reduced in osteoporotic patients. *2012 Panminerva Med*. 54(3):225-31.
17. Aldieri E, Riganti C, **Silvagno F**, Orecchia S, Betta PG, Doublier S, Gazzano E, Polimeni M, Bosia A, Ghigo D. 2011 Antioxidants Prevent the RhoA Inhibition Evoked by Crocidolite Asbestos in Human Mesothelial and Mesothelioma Cells. *Am J Respir Cell Mol Biol*. 45(3):625-31.

18. **Silvagno F**, Poma CB, Realmuto C, Ravarino N, Ramella A, Santoro N, D'Amelio P, Fuso L, Pescarmona G, Zola P. 2010 Analysis of vitamin D receptor expression and clinical correlations in patients with ovarian cancer. *Gynecol Oncol.* 119(1):121-4.
19. **Silvagno F**, De Vivo E, Attanasio A, Gallo V, Mazzucco G, Pescarmona G. 2010 Mitochondrial localization of vitamin D receptor in human platelets and differentiated megakaryocytes. *PLoS One.* 5(1):e8670.
20. Saponaro S, Guarnieri V, Pescarmona GP, **Silvagno F**. 2007. Long-term exposure to dehydroepiandrosterone affects the transcriptional activity of the glucocorticoid receptor. *J Steroid Biochem Mol Biol.* 103(2):129-136.