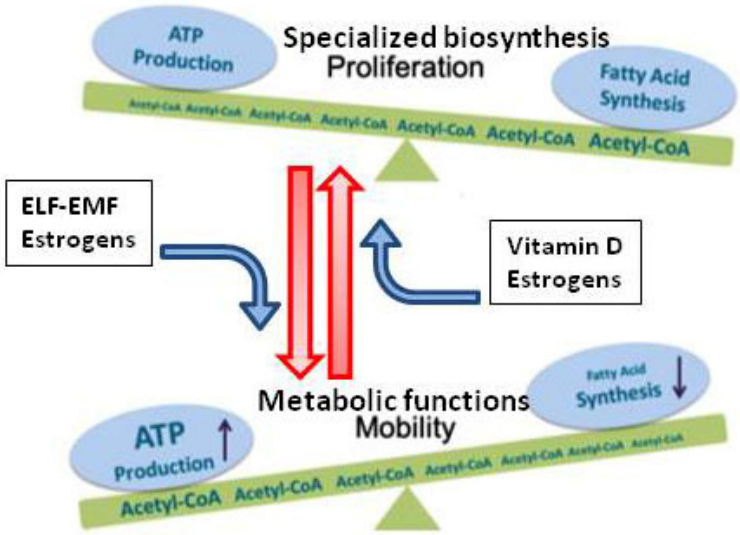
GRUPPO BIOCHIMICA -FRANCESCA SILVAGNO-
Sede: Dipartimento di Oncologia, Via Santena 5bis 10126 Torino
E-mail: francesca.silvagno@unito.it

KEY WORDS: mitochondrial respiratory activity, cancer cell metabolism, proliferation, vitamin D, estrogen receptors, electromagnetic field



The aim of our research is to modulate the mitochondrial respiratory activity in order to reduce cancer cell growth. By different approaches we investigate the effects and the intracellular signaling of molecules and extracellular stimuli able to shift the metabolic balance towards the oxidative catabolism of nutrients, at the expenses of the biosynthetic pathways necessary for proliferation.
Our latest studies focus on:

- The effects of vitamin D on mitochondrial activity. Experimental models: keratinocytes, cancer cell lines, models of epithelial-mesenchimal transition
- The signaling pathways of estrogens and SERMs modulating the mitochondrial respiratory activity. Experimental models: breast cancer cell lines
- The effects of extremely-low frequency electromagnetic fields (ELF-EMF) on mitochondrial activity and cancer cell proliferation. Experimental models: cancer cell lines

Main references:

The vitamin D receptor inhibits the respiratory chain, contributing to the metabolic switch that is essential for cancer cell proliferation. Consiglio M, Destefanis M, Morena D, Foglizzo V, Forneris M, Pescarmona G, **Silvagno F**. PLoS One. 2014. 9(12):e115816.

Mitochondrial and lipogenic effects of vitamin D on differentiating and proliferating human keratinocytes. Consiglio M, Viano M, Casarin S, Castagnoli C, Pescarmona G, **Silvagno F**. Exp Dermatol. 2015. 24(10):748-53

Extremely low frequency electromagnetic fields affect proliferation and mitochondrial activity of human cancer cell lines. Destefanis M, Viano M, Leo C, Gervino G, Ponzetto A, **Silvagno F**. Int J Radiat Biol. 2015. 91(12):964-72.