

A magnet therapy model to study the *in vivo* effect of electromagnetics on human whole-genome gene expression



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Nowadays, conventional wisdom has serious concerns about the effect of electromagnetics on human cells. Recently we have technologically evolved together with electromagnetic devices, but we don't know clearly how they affect us. It's important to highlight that it is not a matter of whether electromagnetic machines

are positive or negative. The purpose is to be capable to evaluate their benefits as well as drawbacks, considering them as a whole. The truth is that, at this moment, inconclusive results have been reached and there's a lack of agreement among scientists. This project intends to examine the

electromagnetics effect on cells – specifically, at the gene expression level – using a magnet therapy model. As far as it is concerned, any *in vivo* whole-genome approach has been developed. Then, this research project may provide a new insight to lighten this phenomenon.

Confusion around electromagnetics

We use electromagnetic devices in our day to day life. But at the same time, Dr. Martin Blank - from the University of Columbia - states:

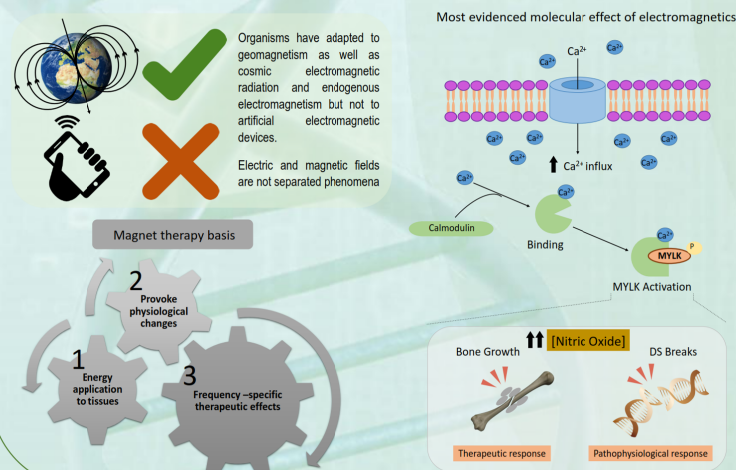
"International exposure guidelines for electromagnetic fields must be strengthened to reflect the reality of their impact on our bodies, especially on our DNA. The time to deal with the harmful biological and health effects is long overdue. We must reduce exposure by establishing more protective guidelines."



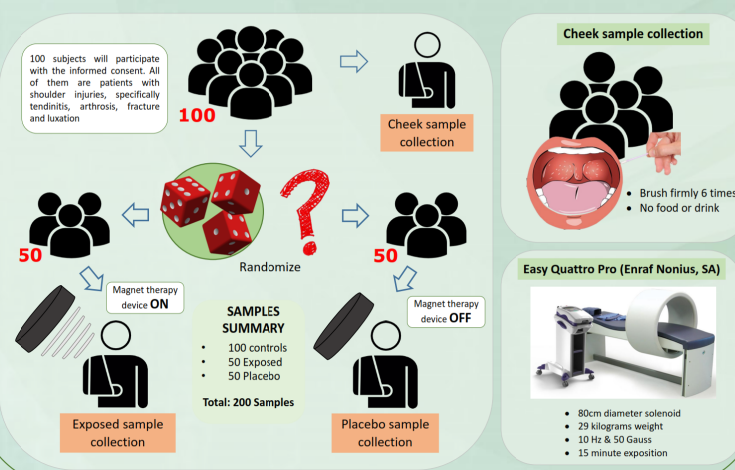
The International EMF Scientist Appeal calls upon the United Nations, the WHO, and the UN Member States to:

- Address the emerging public health crisis related to cell phones, wireless devices, wireless utility meters and wireless infrastructure in neighbourhoods; and
- Urge that the United Nations Environmental Programme (UNEP) initiate an assessment of alternatives to current exposure standards and practices that could substantially lower human exposures to non-ionizing radiation.

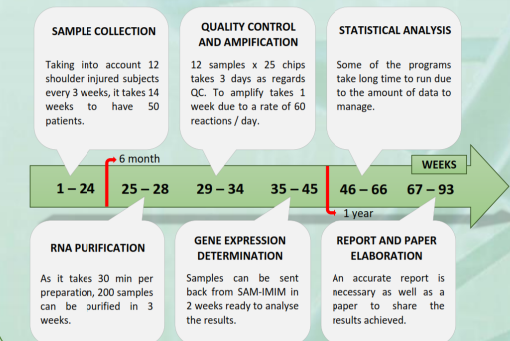
BACKGROUND AND STATE OF THE ART



DESIGN AND SAMPLE COLLECTION



CHRONOGRAM



HYPOTHESIS AND GOALS

"Magnetic field exposition may have a whole-genome low-intensity effect on cells and tissues"

- Reduce confusion level among public opinion. Should we reconsider our relationship with electromagnetic devices?
- Give insight to the underlying mechanism of action that electromagnetic fields have on cells.
- Elucidate evidence as regards electromagnetic hypersensitivity.

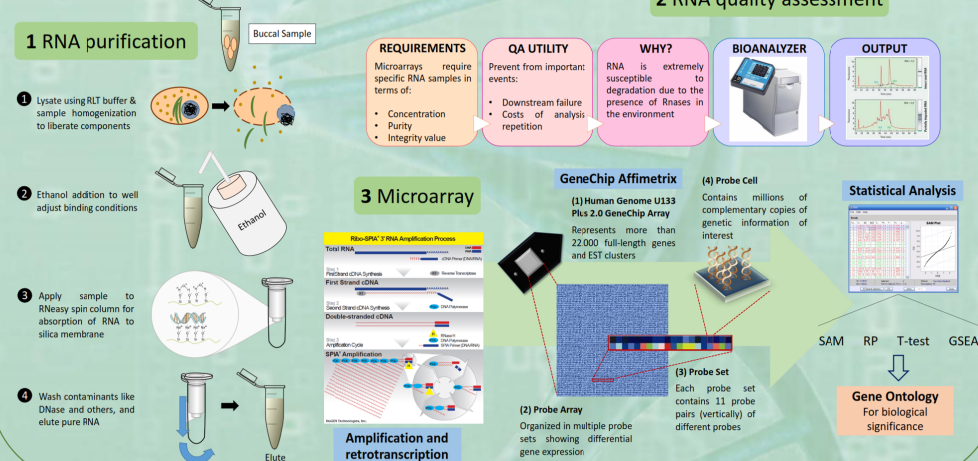
FINANCIAL BACKING

DIRECT COSTS		TOTAL (€)
Cost Category	Subcategory	
Personnel	Students	25.000,00
Travel		640,00
Equipment		0
Other goods and services	Consumables	115.081,96
	Publications	2.000,00
Total		142.721,96

The *Universitat Autònoma de Barcelona* will facilitate part of a laboratory to develop the methodology of the research as well as a microcentrifuge, vortexer, heating block, pipettes and spectrophotometer cuvettes.

A student undertaking the degree in Genetics will have the chance to be an intern in this project. He will have the opportunity to learn from a real project. He will be also given a grant of 1800€ for the work done.

METHODOLOGY



EXPECTED IMPACT

