

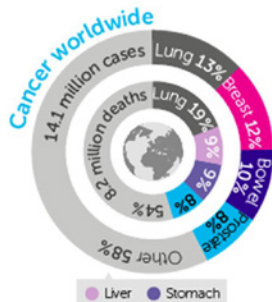


Magic Light to treat cancer



Cancer: The Killer from Within

- Approximately **1,600,000** new cancer cases are diagnosed annually.
- Approximately **570,000** Americans are expected to **die of cancer this year**, more than **1,560** people per day.



Cancer Treatments

The challenge

Cancer is not uniform, many types, mutations and diversity, even within the same tumor. No current treatment towards cancer stem cells (chemotherapy and radiation resistance).

Current therapies

Chemotherapy and radiation

- Active against fast differentiating cells
- Active on healthy cells- toxic effect
- Some cancers develop tolerance towards these treatments

Targeted therapy

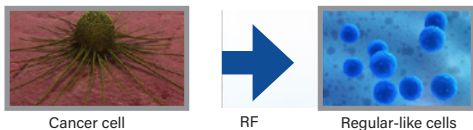
- Active towards highly-expressed cellular markers, both by blocking and targeting (VEGF, EGFR)
- Some mutations render the therapeutics inactive
- Some cancer cells develop tolerance towards these treatments

Immunotherapy - Need for a new type of anti-cancer therapeutics

- Harness the body's immune system to block the cancer cell apoptosis evasion mechanisms
- Modulate the immune-checkpoints
- Although being state-of-the-art, some cancer do not respond to this treatment (no PD1 receptors)

Main features of the Magic Light method

- ➔ All other methods currently used are aimed at the physical destruction of cancer cells.
- ➔ RF electromagnetic field affect cell division via Virtual photons effecting nucleotides interactions within the DNA.



- ➔ A key feature of the proposed method is the use of virtual photons as a programming tool for acting on individual nucleotides, thus changing gene expression.

The market

- Global oncology market: \$133 billion (2017).
- Annual global growth: 7.5 -10.5% through 2020.
- 2020 oncology market: \$150 billion.
- United States accounting for 46% of the total global costs.
- Spending on cancer meds in the U.S. doubled from 2012-2017 - Expected to double again by 2022 to \$100 Billion.
- 70 new cancer treatments have been launched in the past 5 years (14 in 2017).
- More than 20 tumor types are being treated with innovative drugs.

* Global Oncology Trends 2017: Advances, Complexity, and Cost. QuintilesIMS Institute, June 2017.

* Global Oncology Trends 2018: Innovation, Expansion and Disruption, The IQVIA™ Institute for Human Data Science. May 2018.

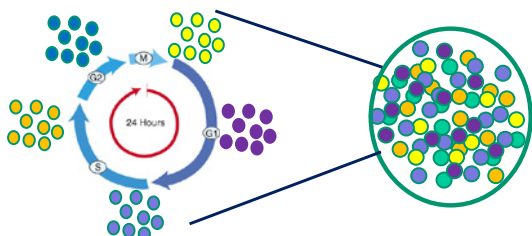
Results

RF electromagnetic waves decreasing temperature in the cells and change its metabolism and inhibiting proliferation of cancer cells.

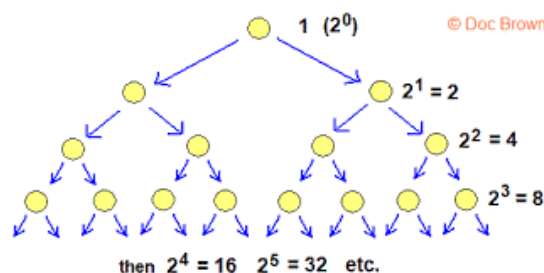
RF electromagnetic waves inhibiting proliferation of cancer cells

Inhibition of cancer cells proliferation as function of modulation frequency.

Increasing the FR-ER inhibition of cell proliferation by Cycles of treatment over 24h



The maths of cell division



Development Program

Stage I

- Evaluating the effect of the RF on various cancer cell lines
- The effects of the RF on cell proliferation, cell cycle, cellular ATP levels, reactive oxygen species (ROS) production, DNA stability, and cell death to be analyzed in cancerous and non-cancerous cells
- Assessing the effects of the ER extract on lung cancer growth in a subcutaneous xenograft mouse model
- A subcutaneous xenograft mouse model for lung cancer will be used to test the effect of RF given for different durations and compare to cisplatin. At the end of the experiment, the mice will be sacrificed, and tumors excised and assayed for:
 - (a) Tissue morphology H&E staining
 - (b) Cell proliferation
 - (c) Protein expression levels of metabolic enzymes and transporters, apoptosis-related proteins, stem cell markers, and transcription factors
 - (d) Next generation sequence (NGS) of the mRNA to establish the profile of the switch on and down genes
- Evaluating the safety of the RF, exploring the mice (female and male) to RF for different periods analyze (outsourcing):
 - (a) Food and water intake
 - (b) Gross pathology and histology of the organs
 - (c) Hematology
 - (d) Serum chemistry analysis
- Development the instrument prototype

Stage II

- Pre-clinical studies
- Clinical studies
- Development the industrial sample of the instrument.

Safety of the technology in comparison to current irradiation - based cancer treatments

- Comparison of exposure to X-rays irradiation and exposure to electromagnetic waves with a wavelength of 0.7m.
- At X-rays therapy photons with energy 6 MeV are used.
- This energy of photons is enough to destroy genes and to disassemble them.
- Energy 6 MeV corresponds to wavelength 2×10^{-13} m.
- Energy $E = h \cdot c / \lambda$, we have $E1/E2 = \lambda2/\lambda1$
- From this equation we can calculate the energy of photons in our case:
 - $E2 = \lambda2/\lambda1 = 0.7 \text{ m} / 2 \times 10^{-13} \text{ m} = 6 \times 10^6 \times 2 \times 10^{-13} / 0.7 = 8.4 \times 10^{-7} \text{ eV}$.
 - It is mean that in our case irradiation intensity is 1013 times less than X-Ray.
 - Energy of photons in UV light is 3 eV. This photon can make ionization of molecules.
 - Our energy is 10,000,000 times less.

The Magic Light is Non-invasive, Non-contact, Painless and Safe method to treat cancer.