Cancer cell proliferation is inhibited by specific modulation frequencies

Description

This is an extract from this article from the US National Library of Medicine

Background:

There is clinical evidence that very low and safe levels of amplitude-modulated electromagnetic fields administered via an intrabuccal spoon-shaped probe may elicit therapeutic responses in patients with cancer. However, there is no known mechanism explaining the anti-proliferative effect of very low intensity electromagnetic fields.

Methods:

To understand the mechanism of this novel approach, hepatocellular carcinoma (HCC) cells were exposed to 27.12 MHz radiofrequency electromagnetic fields using *in vitro* exposure systems designed to replicate *in vivo* conditions. Cancer cells were exposed to tumour-specific modulation frequencies, previously identified by biofeedback methods in patients with a diagnosis of cancer. Control modulation frequencies consisted of randomly chosen modulation frequencies within the same 100 Hz–21 kHz range as cancer-specific frequencies.

Results:

The growth of HCC and breast cancer cells was significantly decreased by HCC-specific and breast cancer-specific modulation frequencies, respectively. However, the same frequencies did not affect proliferation of nonmalignant hepatocytes or breast epithelial cells. Inhibition of HCC cell proliferation was associated with downregulation of *XCL2* and *PLP2*. Furthermore, HCC-specific modulation frequencies disrupted the mitotic spindle.

Conclusion:

These findings uncover a novel mechanism controlling the growth of cancer cells at specific modulation frequencies without affecting normal tissues, which may have broad implications in oncology.

Keywords: hepatocelullar carcinoma, electromagnetic fields, mitotic spindle, PLP2, XCL2
Category

1. Scientific Studies

Tags

1. bio-feedback
2. bioresonance
3. cancer
4. electromagnetic fields
5. hepatocelullar carcinoma
6. mitotic spindle
7. PLP2
8. XCL2

Date Created
2016/05/18
Author
drahmedzayed