

عنوان مقاله:

Effect of ۹۰۰ MHz microwave radiation on alpha-int\ gene expression, proliferation and adherence of Candida Albicans

محل انتشار:

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نویسندگان:

Ariyo Shahin-Jafari - Department of Pathobiology, Faculty of Veterinary Specialized Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran

Mansour Bayat - Department of Pathobiology, Faculty of Veterinary Specialized Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran

Mohammad Hassan Shahhosseini - Department of Microbiology, Shahr-e-Qods Branch, Islamic Azad University, Tehran, Iran

Parviz Tajik - Department of Pathobiology, Faculty of Veterinary Specialized Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran

Shahla Roudbar-Mohammadi - Faculty of Medical Mycology, Tarbiat Modares University, Tehran, Iran

خلاصه مقاله:

To date, registered users of mobile phone communication network exceeded from total numbers of the world population, while a little knowledge of the biological effects of, ۹۰۰-۱۸۰۰ MHz microwave radiation, originating from the handsets or the base transceiver stations, have been released. The current study was designed for evaluation of ۹۰۰-MHz radiation effects on Candida albicans proliferation, adherence and alpha-Int\ gene expression. Candida albicans (ATCC:۱۰۲۳۱) grown in Yeast Peptone Dextrose (YPD) broth was distributed into five tubes (۵ ml,  $1.0 \times 10^6$  cells/ml) and exposed to ۹۰۰ MHz GSM radiation for ۶, ۱۲, ۱۸ and ۲۴ hours, while the fifth tube was kept far from the radiation. Cell densities at ۰, ۶, ۱۲, ۱۸ and ۲۴ hours were assayed (using turbidimetry in ۶۰۰ nm). Equal cell densities ( $2.5 \times 10^6$  cells/ml, ۲۰۰ ul) from exposed and unexposed yeasts were transferred into ۹۶ well plates and incubated for ۴ hours, in order to biofilm formation by the yeast. Yeast densities in biofilm network were assayed using the MTT method. Abundance of alpha-int\ mRNA was also estimated in the five yeast samples using q-RT-PCR method. Microwave exposure led to increased proliferation rate and increased biofilm formation by the yeast and the effect was prominent in ۱۸ hours exposed samples. Quantitative RT-PCR results showed significantly increased levels of the alpha-int\ mRNA in microwave exposed yeasts. The significant increases in the yeast proliferation and biofilm formation after exposure to ۹۰۰ MHz GSM radiation are partly mediated by changes in alpha-int\ protein expression.

کلمات کلیدی:

Candida albicans, Alpha-INT\ protein, Virulence factors, Microwaves, Quantitative PCR

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