

## عنوان مقاله:

Adaptive Response Induced by Pre-Exposure to ۹۱۵ MHz Radiofrequency: A Possible Role for Antioxidant Enzyme Activity

## محل انتشار:

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## خلاصه مقاله:

**Background:** Over the past few years, the rapid use of high frequency electromagnetic fields like mobile phones has raised global concerns about the negative health effects of its use. Adaptive response is the ability of a cell or tissue to better resist stress damage by prior exposure to a lesser amount of stress. This study aimed to assess whether radiofrequency radiation can induce adaptive response by changing the antioxidant balance. **Materials and Methods:** In order to assess RF-induced adaptive response in tissues, we evaluated the level of GSH and the activity of GR in liver. ۵۰ rats were divided into ۵ groups. Three groups were pre-exposed to ۹۱۵ MHz RF radiation, ۴ hours per day for one week at different powers, as low, medium and high. ۲۴ hours after the last exposure to radiation, they were exposed to ۴ Gy sublethal dose of gamma radiation and then sacrificed after ۵ hours. Their livers were removed, washed and were kept at -۸۰°C until used. **Results:** Our finding showed that pre-exposure to ۹۱۵ MHz radiofrequency radiation with specific power could induce adaptive response in liver by inducing changes in the activity and level of antioxidant enzymes. **Conclusion:** It can be concluded that pre-exposure to microwave radiation could increase the level of GSH and the activity of GR enzyme, although these increases were seen just in low power group, and the GR activity was indicated in medium power group. This increase protects tissue from oxidative damage induced by sublethal dose of gamma radiation.

## کلمات کلیدی:

(Adaptive response, RF Radiation, Antioxidant Enzymes, Glutathione Reductase (GR), Reduced Glutathione (GSH)

