

IMMUNOMODULATORY EFFECTS OF FAR-INFRARED RAY IRRADIATION VIA INCREASING CALMODULIN AND NITRIC OXIDE PRODUCTION IN RAW 264.7 MACROPHAGES

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Far-infrared ray (FIR) radiation has been shown to be beneficial to human health; however, little scientific evidence of its mechanisms has been provided. In the present study, we investigated the effect of nonthermal-enhanced FIR on the expression of calmodulin (Cam) protein and nitric oxide (NO) production by RAW 264.7 macrophages. Results indicated a significant increase in Cam protein in FIR-treated RAW 264.7 macrophages with or without the addition of lipopolysaccharide (LPS). In addition, the amount of NO was slightly higher but increased significantly in FIR plus LPS-treated RAW 264.7 macrophages. Data of the present study provide the first evidence to indicate the immunomodulatory properties of FIR through increasing Cam protein and NO production in RAW 264.7 macrophages.

Keywords: Far-infrared ray; Calmodulin; Nitric oxide; Immunomodulation

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