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A Pilot Study of Ceramic Powder Far-Infrared Ray Irradiation (cFIR) on Physiology: Observation of Cell Cultures and Amphibian Skeletal Muscle.

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Author information

Abstract

The purpose of this research was to assess the potential for far-infrared ray irradiation from ceramic powder to improve exercise performance at room temperature. We designed experiments with murine myoblast cells (C2C12) to study the effect of cFIR irradiation on cell viability and lactate dehydrogenase release under H₂O₂-mediated oxidative stress and evaluated intracellular levels of nitric oxide and calmodulin. We also used electro-stimulation of amphibian skeletal muscle. Our results show that cFIR strengthened C2C12 under oxidative stress and delayed onset of fatigue induced by muscle contractions. We discuss possible mechanisms including anti-oxidation and prevention of acid build-up in muscle tissue based, and expect to see more applications of cFIR in the future.

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