

عنوان مقاله:

Evaluating Carbone nanotubes toxicity in skin of rat using isolated mitochondria

محل انتشار:

پانزدهمین همایش سراسری سم شناسی ایران (سال: 1398)

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خلاصه مقاله:

Introduction: With the ever-increasing use of carbon nanotubes (CNTs) in health-related and engineering applications, the hazardous risks of this material have become a major concern. It is well known that CNTs accumulate with cytotoxic and genotoxic levels within vital organs. It has also been shown that treating cell cultures with CNTs resulted in cell cycle arrest and increased apoptosis/necrosis. **Methods:** In this study, we investigated the effect of chronic exposure to CNTs at the exposure chamber on rat. The animals were divided into two groups (control and exposed group to CNTs at the concentration of 5 µg/m³ for 5 h/day,) in an inhalation chamber. **Result:** Our results showed that exposure to CNTs increased reactive oxygen species (ROS) generation, the collapse of mitochondrial membrane potential (MMP), mitochondrial swelling and cytochrome c release and decreased SDH activity in skin mitochondria. Our results suggest that exposure to CNTs can induce oxidative stress in the rat skin mitochondria. **Discussion:** These results suggest that exposure of workers with CNTs probably increase a risk of dermal disorders through oxidative stress. However, good ventilation, appropriate personal protective equipment and using of anti-oxidant compounds in .daily diet of worker are suggested to prevent the toxic effects

کلمات کلیدی:

Carbone nanotubes, chronic exposure, mitochondria, oxidative stress

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