



Conference Abstract

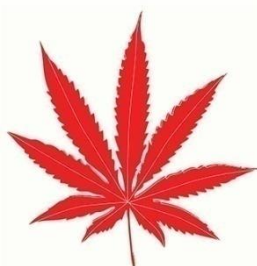
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TOXICOLOGICAL EVALUATION AND IN VITRO STUDIES OF KREB CYCLE THROUGH METAL OXIDES NANOPARTICLES FOR OXIDATION OF SUCCINATE WITH CONCURRENT EFFECTS IN METABOLIC PATHWAYS

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ABSTRACT

The Current study aimed at toxic evaluation and In vitro testing, elaborating toxic consequences of nanoparticles of metal oxides on energy generating cycle. The study conducted around the oxidation of sodium succinate within an aqueous mix, through use of potassium ferricyanide as an oxidizing agent. The metal oxide was constituted via hydrothermal method and confirmed via characterization implying XRD, FTIR, SEM, TEM, and TGA. The effect of prepared nanoparticles of metal oxide (MgO and CaO) was monitored for effects on oxidation of succinate at a temperature of $25 \pm 1^\circ\text{C}$. Kinetics was measured on kinetic mode of spectrophotometer at a maximum wavelength of 420 nm. The kinetic results signified inhibiting role of these nanoparticles in the conversion of succinate to fumarate. Process explained that particle size (nanoparticles) was directly responsible for inhibition while it was inversely allied to the oxidation rate of succinate. The conclusions were made that eminent concentrations of metal oxide nanoparticles produces a gross effect on Krebs cycle by inhibiting oxidation of succinate and thus causing a number metabolic disorders.

Keywords: In Vitro evaluation, Metal oxide nanoparticles, The Krebs Cycle, Rate of reaction, Toxicology and Metabolic disorders