



# IBSC

International Bioscience Conference and the  
8th International PSU – UNS Bioscience Conference

## Towards the SDG Challenges

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BOOK OF ABSTRACTS



IBCS2021 is organized jointly by:



University Prince of Songkla,  
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University of Novi Sad,  
Faculty of Sciences, Serbia

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## T1-P-45 Pinitol as DNA protector against hydroxyl and peroxy radicals-induced DNA damage

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**KEYWORDS:** Pinitol; DNA damage; hydroxyl radical; peroxy radical

**INTRODUCTION:** Oxidative damage to DNA plays a crucial role in the progression and development of numerous diseases. Preventing DNA from oxidative damage is crucial for any living organism.

**OBJECTIVES:** The present study was aimed to investigate the *in vitro* DNA protective effect of pinitol, a dietary inositol present in *Ceratonia siliqua L.*, against hydroxyl and peroxy radicals-induced oxidative DNA damage. Pinitol exhibits numerous pharmacological properties such as anticancer, antidiabetic, antioxidant, hepatoprotective, immunosuppressor, antiosteoporosis, antiaging, preventive and ameliorative of Alzheimer's disease etc.

**METHOD / DESIGN:** The protective activity of pinitol at various concentrations (25, 50, 100, and 200 µg/mL) was assayed *in vitro* using DNA from herring sperm as a model system, FeSO<sub>4</sub> and H<sub>2</sub>O<sub>2</sub> for the generation of hydroxyl radicals, (2-methylpropionamide) dihydrochloride (AAPH) for oxidative DNA damage and assays for the detection of hydroxyl and peroxy radicals-induced DNA damage.

**RESULTS:** Pinitol showed DNA-protective effect at all tested concentrations against hydroxyl radical in a dose-dependent manner. Concentration-response of pinitol indicated that protection against peroxy radical induced DNA damage was more significant with the increase in pinitol concentration.

**CONCLUSIONS:** This investigation showed that pinitol can use as DNA protector against oxidative damage caused by hydroxyl and peroxy radicals.

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