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BOOK OF ABSTRACTS

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Morphine administration enhanced the low gamma (35.5 – 45 Hz) spectral power while methamphetamine predominantly increased spectral power within the high-frequency oscillation (145 – 500 Hz).

CONCLUSIONS:

These findings suggest that various psychoactive substances are differentially produced a specific pattern of LFP power spectrum depending on its pharmacological action. Different addictive substances, morphine, and methamphetamine that modulated specific neurotransmitter systems in the NAc-related reward circuit revealed a unique LFP profile which is a fingerprint of its action.

T3-P-5 Orange carbon dots change the total phenolic content in maize

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Sladjana Z. Spasić[23/25]
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KEYWORDS: carbon dots; maize; nanoparticles; total phenolic content.

INTRODUCTION:

Carbon dots (CDs) are considered a green alternative to metal nanoparticles because they can be used where metal nanoparticles cannot be applied. Orange carbon dots (oCDs), synthesized from citric acid and *o*-phenylenediamine as precursors, are organic spherical nanoparticles with a lot of applications in various biomedical purposes such as drug delivery, bioimaging, and sensing. Ease of preparation, high photoluminescence, solubility in water, and biocompatibility are their main advantages.

OBJECTIVES:

The main aim of this research was to investigate the effect of oCDs on total phenolic content (TPC) in maize as an agricultural species. TPC reflects the contribution of phenolics as a group of secondary metabolites participating in the regulation of plant growth and in the defense responses. Also, it is one of the main indicators of oxidative stress which can cause a metabolic disorder in plants.

METHOD / DESIGN:

Three different concentrations (1 mg L^{-1}, 5 mg L^{-1} and 10 mg L^{-1}) of oCDs nanoparticles were used for the treatment of maize plants via KNOP/2 hydroponic solution during 2 week-growth under 16 h/8 h photoperiod. TPC was analyzed from extracts obtained from the roots and leaves of plants after foliar and solution treatments. Folin-Ciocalteu's spectrophotometric procedure was used for the determination of TPC in the samples.

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RESULTS:

The results showed that foliar applications with all concentrations of oCDs induced decreases of TPC in maize leaves but did not affect these parameters in the roots. In solution treatment, the concentration of 1 mg/L of oCDs increased TPC in the leaves, but decreased in roots.

CONCLUSIONS:

The higher efficiency achieved with the lowest oCD concentration (1 mg/L) in foliar treatment makes this way of application advantageous compared with the solution counterpart.

T3-P-6 Sustained release of lignin model compound dehydrogenate polymer (DHP) from alginate beads

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KEYWORDS: dehydrogenate polymer; alginate; drug release

INTRODUCTION:

Alginate dressings are widely used in the treatment of exuding wounds[29]. The enzymatically synthesized lignin model compound dehydrogenate polymer (DHP) from coniferyl alcohol by the enzyme peroxidase, is the best lignin substitute used in various experiments[30]. In our previous work, we have shown that synthesized DHP has antibacterial and antibiofilm properties, and in combination with alginate has good potential for wound treatment[31].

OBJECTIVES:

The objective of this paper was to study the sustained release of DHP from low and medium viscosity alginate beads.

METHOD / DESIGN:

Synthesized DHP powder (0.8 mg) was added to 2 ml 2% (w/v) sodium alginate low (4-12 cP, 1% at 25 °C) and medium (≥2000 cP, 2% at 25°C) viscosity solution. The solution was transferred dropwise to calcium chloride in water for making the gel beads. In vitro release of DHP was monitored in 10 mL of distilled water. Aliquots were taken at predetermined time intervals (1, 2, 3, 4 and 24 h) and concentration of DHP was determined spectrophotometrically at 272 nm. The dissolution tests were performed in duplicate.

RESULTS:

Figure 1 shows release profiles of DHP from low and medium viscosity alginate beads. Low viscosity alginate showed slightly

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