



Putrescine, Cadaverine, Spermine and Spermidine – Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano Molecules

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Abstract

In the current study, we study Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules incorporation into the Nano Polymeric Matrix (NPM) by immersion of the Nano Polymeric Modified Electrode (NPME) as molecular enzymes and drug targets for human cancer cells, tissues and tumors treatment under synchrotron and synchrocyclotron radiations.

Keywords: Putrescine, Cadaverine, Spermine, Spermidine, Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI), Nano Molecules.

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1. Introduction

In the current study, we study Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules incorporation into the Nano Polymeric Matrix (NPM) by immersion of the Nano Polymeric Modified Electrode (NPME) as molecular enzymes and drug targets for human cancer cells, tissues and tumors treatment under synchrotron and synchrocyclotron radiations, Figure (1). Putrescine originates in putrefying and rotting flesh, and is quite literally, the smell of death. It is one of the breakdown products of some of the amino–acids found in animals, including humans. Although the molecule is a poisonous solid, as flesh decays the vapor pressure of the Putrescine it contains becomes sufficiently large to allow its disgusting odour to be detected. It is usually accompanied by Cadaverine (named after the cadavers that give rise to it), a poisonous syrupy liquid with an equally disgusting smell. Putrescine and Cadaverine also contribute towards the smells of some living processes. Since they are both poisonous, the body normally excretes them in whatever way is quickest and most convenient. For example, the odour of bad breath and urine are 'enriched' by the presence of these molecules, as is the 'fishy' smell of the discharge from the female medical condition *bacterial vaginosis*. Putrescine and Cadaverine also contribute to the distinctive smell of semen, which also contains the related molecules Spermine and Spermidine. In this regard, the development of Chemical Modified Electrodes (CEMs) is at present an area of great interest. CEMs can be divided broadly into two main categories; namely, surface modified and bulk modified electrodes. Methods of surface modification include adsorption, covalent bonding, attachment of polymer Nano films, etc. Polymer Nano film coated electrodes can be differentiated from other modification methods such as adsorption and covalent bonding in that they usually involve multilayer as opposed to monolayer frequently encountered for the latter methods. The thicker Nano films imply more active sites which lead to larger analytical signals. This advantage coupled with other, their versatility and wide applicability, makes polymer Nano film modified electrodes particularly suitable for analytical applications [1–27].

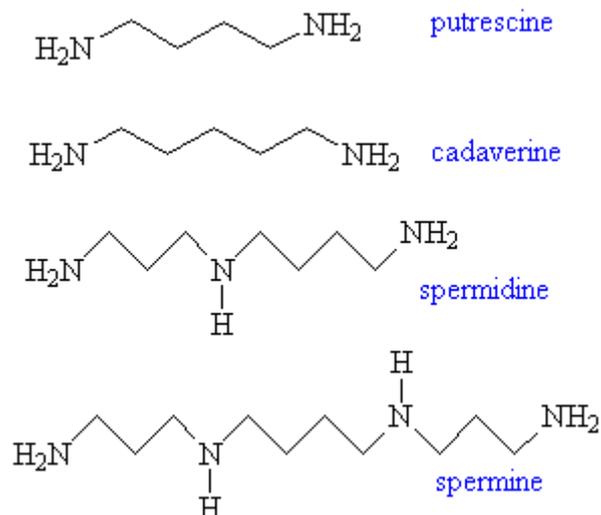


Figure 1. Molecular structure of Putrescine, Cadaverine, Spermine and Spermidine Nano molecules. **Source:** [28]

2. Materials, Research Methods and Experimental Techniques

Electrochemical polymerization offers the advantage of reproducible deposition in terms of Nano film thickness and loading, making the immobilization procedure of a metal–based electrocatalyst very simple and reliable for Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules–encapsulating Carbon nanotubes incorporation into the Nano Polymeric Matrix (NPM) by immersion of the Nano Polymeric Modified Electrode (NPME) as molecular enzymes and drug targets for human cancer cells, tissues and tumors treatment under synchrotron and synchrocyclotron radiations. Also, it must be notice that the nature of working electrode substrate in electropreparation of polymeric Nano film is very important, because properties of polymeric Nano films depend on the working electrode anti–cancer Nano materials. The ease and fast preparation and of obtaining a new reproducible surface, the low residual current, porous surface and low cost of Multi–Walled Carbon Nanotubes (MWCNTs) paste are some advantages of Carbon Paste Electrode (CPE) over all other solid electrodes [29–93].



3. Results and Discussion

On the other hand, it has been shown that, macrocyclic complexes of Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules–encapsulating Carbon nanotubes are interest as modifying agents because in basic media Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules–encapsulating Carbon nanotubes redox centers show high catalytic activity towards the oxidation of small organic anti–cancer Nano compounds. The high–valence species of Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules–encapsulating Carbon nanotubes seem to act as strong oxidizing agents for low–electroactivity organic substrates. 1,2–Dioxetane (1,2–Dioxacyclobutane), 1,3–Dioxetane (1,3–Dioxacyclobutane), DMDM Hydantoin and Sulphobe as the anti–cancer organic intermediate products of methanol oxidation as well as formic acid, is important to investigate its electrochemical oxidation behavior in Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules–encapsulating Carbon nanotubes incorporation into the Nano Polymeric Matrix (NPM) by immersion of the Nano Polymeric Modified Electrode (NPME) as molecular enzymes and drug targets for human cancer cells, tissues and tumors treatment under synchrotron and synchrocyclotron radiations [94–167].

4. Conclusions, Perspectives, Useful Suggestions and Future Studies

In this work, we decided to combine the above mentioned advantageous features for the aim of Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules–encapsulating Carbon nanotubes incorporation into the Nano Polymeric Matrix (NPM) by immersion of the Nano Polymeric Modified Electrode (NPME) as molecular enzymes and drug targets for human cancer cells, tissues and tumors treatment under synchrotron and synchrocyclotron radiations. Furthermore, in this research, we prepared poly Nano films by

electropolymerization at the surface of Multi–Walled Carbon Nanotubes (MWCNTs) paste electrode. Then, Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules–encapsulating Carbon nanotubes were incorporated into the Nano Polymeric Matrix (NPM) by immersion of the Nano Polymeric Modified Electrode (NPME) in a solution. The modifier layer of Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules–encapsulating Carbon nanotubes at the electrode surface acts as a Nano catalyst for the treatment of human cancer cells, tissues and tumors under synchrotron and synchrocyclotron radiations. Suitability of this Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano molecules–encapsulating Carbon nanotubes–modified polymeric Multi–Walled Carbon Nanotubes (MWCNTs) paste electrode toward the electrocatalytic treatment of human cancer cells, tissues and tumors under synchrotron and synchrocyclotron radiations in alkaline medium at ambient temperature was investigated.

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Au₃₈(SPh)₂₄, Au₃₈(SC₂H₄Ph)₂₄, Au₂₁S(SAdm)₁₅, Au₃₆(pMBA)₂₄ and Au₂₅(pMBA)₁₈ Nano Clusters, *J Surgery Emerg Med* 1: 21, **2017**.

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