water and molecular oxygen. It has one of the highest turnover numbers known ($4\times107\ s^{-1}$). Catalase has numerous industrial and medical applications. It is widely used in the food industry in order to remove the excess hydrogen peroxide from the milk and in the food wrappers to retard oxidation, it is also used in the contact lenses and in the textile manufacturing to ensure that the final product is peroxide free. In industry, it is highly desirable to increase the rate of enzymatic reaction via controlled increase in the temperature. In this report, xylitol as a compatible osmolyte increases the thermal stability of bovine liver catalase through destabilization of the denatured state. The increase in the thermal stability is augmented, in comparison to the native, by an increase in the activity at the room temperature. This increase in enzymatic activity is further enhanced by the intrinsic rate increase caused by temperature which might be of particular interest in industrial applications.

Keywords: Catalase, Xylitol, Compatible osmolyte, Functional stability, Thermal stability.

Abstract No.145

Investigation on Stability and Immobilization of Enzyme-Conjugated Models Based on Different Composition of Chitosan

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The objective of this paper replies to this question that if new chitosan carriers in film and microsphere form could be suitable support to immobilize an enzyme model.The study was conducted in two different stages. In the first stage, suitable carriers were preparated and then its physicochemical effects were investigated. In the second phase, the enzyme immobilization was studied. Briefly, some sample of the carriers in film (FG6) and microsphere (MG6) form were placed in test tubes containing solution of RNAase at pH 7.2. Finally samples were influenced on mixture of RNA and DNA present in agarose gel and rubbed in electrophoresis. To qualitatively evaluate whether RNAs were immoblized the supports, each of four samples were analyzed by native agarose gel electrophoresis stained with RNA. The results acquired from the RNAs immoblization were represented. Qualitative study on the enzyme immobilization in incubated films and microsphers was investigated.The results reflect that visually detectable amounts of RNA are sufficiently stable in the samples a, b, c and d. Similar amounts of stained RNA were observed in the samples of a and b respectively, in 4 and 25 °C. Although in the sample of d has reduced level of RNA. Therefore, the samples c and d depicted changed electrophoretic mobilities, including enzymatic degradation of trapped RNA at the bottom of the sample in 25 °C. It implies that RNAas immobilization was not appropriate as a result of inadequate stabilty. Regarding to obtained results, this investigation has obviously suggested that enzyme immobilization characteristics of chitosan were dependent on the physical form as film or microsphere.

Keywords: Physicochemical Properties, Enzyme Emmoblization, Conjugated Compound.

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Kinetically Study on Mezalazine Conjugated Biomacromolecules as Bioactive Model and its Application in Enzyme Delivery

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The objective of this paper reply to this question that if an enzyme could release potentially from the prepared biomacromolecules. So prior to evaluate the release pattern of an enzyme from the films or microspheres of a biomacromolecule, it is important to study release kinetics of a bioactive molecules from the carrier (Mezalazine). In brief the following stages were carried out as order, preparation of cross-linked chitosan films and microspheres, conjugation of drug model on films and microspheres, study of in vitro release kinetics of drug-conjugatedcarriers. From these experimental data, it appears that biomacromolecules films and microspheres have shown better controlled release of mezalazine in FG18M5, MG18M5 and especially in MG12M5since their release pattern are near to zero order kinetics. By