Absolute contraindication for the use of aspirin is the individual intolerance to acetylsalicylic acid, there are no more restrictions on the use of medication. If you consider whether harmful Aspirin is for health, then you need to pay attention to the beneficial properties of the drug. As with any other drug, the use of aspirin will be beneficial and harmful. However, the ratio of harmful and useful varies depending on the patient's state of health and the duration of admission. For example, it is relatively harmless to take 1-2 times aspirin receptions from migraine or to reduce the temperature and here you can do without a special medical purpose, in the axis, prolonged use of the drug for the prevention of thrombosis is possible only after a medical examination and under the control of blood analysis.

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PARAMETERS AFFECTING THE PERFORMANCE OF IMMOBILIZED ENZYME

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Introduction. Enzymes found in nature have been exploited in industry due to their inherent catalytic properties in complex chemical processes under mild experimental and environmental conditions. The desired industrial goal is often difficult to achieve using the native form of the enzyme. Recent developments in protein engineering have revolutionized the development of commercially available enzymes into better industrial catalysts. Protein engineering aims at modifying the sequence of a protein, and hence its structure, to create enzymes with improved functional properties such as stability, specific activity, inhibition by reaction products, and selectivity towards non-natural substrates. Soluble enzymes are often immobilized onto solid insoluble supports to be reused in continuous processes and to facilitate the economical recovery of the enzyme after the reaction without any significant loss to its biochemical properties. Immobilization confers considerable stability towards temperature variations and organic solvents. Multipoint and multisubunit covalent attachments of enzymes on appropriately functionalized supports via linkers provide rigidity to the immobilized enzyme structure, ultimately resulting in improved enzyme stability. Protein engineering and immobilization techniques are sequential and compatible approaches for the improvement of enzyme properties.

Enzymes are considered to be sensitive, unstable at elevated temperatures, and require an aqueous medium for function; these are features that are not ideal for a catalyst, and are undesirable in most syntheses. In many cases a simple way to avoid at least some of these drawbacks is to immobilize enzymes. The immobilization of enzymes has proven particularly valuable and has been exploited over the last four decades to enhance enzyme properties such as activity, stability, and substrate specificity for their successful utilization in industrial processes. In spite of the long history and obvious advantages of enzyme immobilization, Straathof et al. (2002) estimated that only 20% of biocatalytic processes involve immobilized enzymes. Initially, the main challenge was to find suitable immobilization methods to allow multiple uses of enzymes for the same reaction. With the advancement in immobilization techniques, the focus has shifted to the development of modulated enzymes with the desired properties for certain specific applications. Immobilization has its associated advantages (it allows for multiple, repetitive, or continuous use and has minimum reaction time, high stability, improved process control, multienzyme system, easy product separation, while it is

less labor intensive and more cost effective, safe to use, and environmentally friendly) and disadvantages (its lowered activity, conformational change of the enzyme, possibility of enzyme denaturation, changes in properties, mass transfer limitations, and lowered efficacy against insoluble substrates).

Many methods have been established in order to achieve immobilized enzyme, and each has its advantages and defects. The methods used to date include physical adsorption, entrapment, covalent binding, and the immobilization via a spacer arm.

Adsorption immobilization is a method which is used to immobilize enzyme by the attachment of enzyme on carrier surface via weak forces, such as van der Walls force, electrostatic force, hydrophobic interaction, and hydrogen bond.

Physical adsorption immobilization is one of the simplest methods and can be conducted under mild conditions. This method does not result in large loss of enzyme activity. Despite many merits of adsorption, it also presents some drawbacks. For instance, the immobilized enzyme prepared by adsorption has poor operation stability; the amount of adsorbed enzyme is more susceptible to the immobilization parameters such as temperature, ionic strength, and pH; and enzyme can be stripped off easily from the carrier because of the weak forces between them.

Covalent binding immobilization is a method which is used to immobilize enzyme by binding the nonessential pendant group of enzyme to the functional group of carrier via chemical bonds. Generally, enzyme immobilization by covalent binding method can combine enzyme with carrier firmly and avoid the shedding and leakage of enzyme. However, the defect of this method is that it often causes the low activity recovery, which is resulted from the destruction of enzyme active conformation during immobilization reaction, the multipoint attachment to the supports, steric hindrance of enzyme, or the strong strength of the covalent binding.

Another factor contributing a lot to the immobilized enzyme is the immobilization carrier materials. Carrier material should be readily available, nontoxic, and should offer a good biological compatibility for enzyme. As a part of the immobilized enzyme, the structure and property of the carrier have important impacts on the enzymatic properties.

The excessive enzyme loading always causes protein-protein interaction and inhibits the flexible stretching of enzyme conformation, which will result in the steric hindrance and thus the inactivation of an enzyme. That is, the enzyme molecule may be difficult to modulate its most suitable conformation for catching the substrate molecules and releasing product molecules under molecular crowding condition. Recently, several authors have investigated the effect of enzyme loading on the immobilization. For instance, in the study of pectinase immobilization on macro porous polyacrylamide microspheres by Lei and Jiang, they found that the activity of the immobilized pectinase decreased instead when the enzyme amount increased from 10 to 12 units/ml.

Conclusions. Enzymes have achieved acceptance as catalysts in the synthesis of chemical compounds, particularly in the fine chemicals industry for the manufacture of enantiopure compounds. Immobilization of enzymes is a useful tool to meet cost targets and to achieve technological advantages. Immobilization enables repetitive use of enzymes and hence significant cost savings. In all, many parameters will have influence on the properties of enzyme during enzyme immobilization. Particularly, immobilization methods, carrier materials, and enzyme loading amount have proven to be important for enzyme immobilization. Therefore, we should try to select a suitable carrier as well as an appropriate method for immobilization. Moreover, the immobilized enzyme amount could not be blindly raised in immobilization with the purpose of enhancing enzyme activity.