Секція: **Хімія. Хімічна, біологічна та харчова технології.**

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ASPIRIN – FRIEND OR FOE?

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Aspirin is a well-known medical preparation that occurs in virtually every pharmacy, it is used as an antipyretic, analgesic, anti-inflammatory agent. It seems to many that a small white tablet is practically a panacea for all painful and unpleasant symptoms, aching head - aspirin helps, temperature rises - help aspirin, many aspirin, when the stomach, throat, when it is ill with a flu or acute respiratory disease.

Of course, aspirin is a useful medical product that can solve many health problems. However, like any other pharmaceutical product, these drugs have a number of contraindications for use. To put it briefly, in some cases, aspirin is harm to the body.[Reuters Health Information. US FDA panel against approving broader aspirin use. December 2003].

Aspirin is a derivative of salicylic acid, in which one hydroxyl group was replaced with acetyl, thus acetylsalicylic acid was released. The name of the drug originates from the Latin name of the plant Tawol (Spiraea), it was from this plant material that was first obtained salicylic acid. The benefit of aspirin to the body manifests itself in its ability to block the production of prostaglandins (hormones that participate in the processes of inflammation, cause platelet fusion and promote body temperature), thereby minimizing inflammatory processes, lowering the body temperature and reducing the process of adhesion of platelets. Since the main cause of many heart diseases is that the blood becomes very thick and there are breast (thrombi) formed from platelets, aspirin was immediately proclaimed with the preparation №1 for cores. Many people began taking aspirin just like this, without evidence, in order to make blood clots platelets and thrombi.[Cesarone, MR, et al. Prevention of venous thrombosis in long-haul flights with Flite Tabs. Angiology, Vol. 54, No. 5, Sept-Oct, 2003, pp. 531-39]

However, the effect of aspirin is not safe, affecting the ability of platelets to stick with each other, acetylsalicylic acid suppresses the function of these blood cells, sometimes causing irreversible processes. As it turned out as a result of research, aspirin is only useful for those who are in the so-called "high risk" group; for "low risk" groups of people, aspirin was not only ineffective prophylaxis, but also in some cases, harm. That is, for healthy or practically healthy people, aspirin is not only not useful, but also harmful, because it is inclined to seek internal bleeding. Acetylsalicylic acid makes vessels more permeable and reduces the ability of the blood to coagulation. Aspirin - an acid that can cause damage to the mucous membrane of the digestive organs, causing gastritis and forming, so take aspirin only after eating, drinking a large amount of water (300 ml). To minimize the destructive effects of acid on the mucous membrane, the tablets are thoroughly crushed before taking, washed with milk or alkaline mineral water. "Spiky" forms of aspirin are more harmless to the mucous of the internal organs. People who have a tendency to internal bleeding, in general, should refuse to use aspirin or take the drug strictly according to the instructions of the doctor. With diseases such as influenza, chickenpox, measles, the use of aspirin is prohibited, the treatment of this drug can cause Ray syndrome (liver encephalopathy), which leads in most cases to the fatal outcome. Acetylsalicylic acid is completely contraindicated in pregnant and nursing women.

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.

УДК 66.097.3-039.7

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PARAMETERS AFFECTING THE PERFORMANCE OF IMMOBILIZED ENZYME

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Keywords. Immobilization; inhibition, enzymes.

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