عنوان مقاله:
Enzyme and Enzyme therapy

محل انتشار:
چهارمین کنفرانس بین المللی پژوهشهای کاربردی در علوم شیمی و زیست شناسی (سال: 1396)

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خلاصه مقاله:
Enzymes are macromolecular biological catalysts that have high affinity, specificity and efficiency. They control activity of living system and are three types metabolic, digestive and food enzymes. Enzymes help body to digest foods and build structure and remodel new cells. Enzyme replacement therapy is a medical treatment which replaces an enzyme that is deficient or absent in the body. Enzymes as direct pharmaceutical products find numerous applications. It initiated over 30 years ago by Christian de Duve, however, ERT did not become a reality until the early 1990s, when its safety and effectiveness were demonstrated for the treatment of type 1 Gaucher disease. Today, ERT is approved for six LSDs, and clinical trials with recombinant human enzymes are ongoing in several others. Several diseases can, at least in theory, be treated by the administration of an enzyme, the deficiency of which is the cause of the disease. Some important therapeutic enzymes along with their uses include: L-asparaginase (antitumour); urokinase (blood clots); collagenase (skin ulcers); uricase (gout); L-glutaminase (antitumour); L-arginase (antitumour); L-tyrosinase (antitumour); Glucosidase (antitumour) streptokinase (anticoagulant); urokinase (anticoagulant); hyaluronidase (heart attack); ribonuclease (antiviral); trypsin (inflammation); lysozyme (antibiotic); rhodanase (cyanide poisoning); β-lactamase (penicillin allergy); serratiopeptidase (anti–inflammatory); lipase (digest lipids); laccase (detoxifier); dornase α (cystic fibrosis); rasburicase (hyperuricemia); sacrosidase (congenital sucraseisomaltase deficiency (CSID)), and peptidase (celiac disease). Some important enzymes used for some lysosomal diseases include: Aglucerase, Imiglucerase, Taliglucerase alfa, Velaglucerase-A (Gaucher's disease); Pegademase bovine (severe combined immunodeficiency disease SCID); α-Galactosidase A, Agalsidase beta (Fabry's disease); Idursulfase (Hunter syndrome). At present, Enzyme Replacement Tharapy has been approved for six lysosomal storage diseases, and clinical trials with recombinant human enzymes are ongoing in several others.

کلمات کلیدی:
Enzyme, Enzyme replacement therapy, Digestive enzymes, metabolic enzymes