

Gas Chromatography with Modified pH-sensitive Pellets in Evaluating the Activity of Some Enzymes Attributed with a Change in the Medium pH

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ABSTRACT

A new evaluation method based on gas chromatography (GC) is considered for the screening of the inhibitory activity of various compounds against certain enzymes using immobilized pH-sensitive matrix pellets. This approach of analysis is being utilized in developing sensitive GC methods for enzymes attributed to pH change in their media. Particularly, for those which require accurate and sensitive assay methods. The method has been implemented in drug discovery research related to antagonism of carbonic anhydrase, isozyme 3 (CAIII). This isozyme has a strong potential in treating obesity, hyperlipidemia and cancer. The method was also used in investigation of various peptide derivatives with an epoxide warhead for their anti-lipase activity. Recently, the method has been used in evaluating some tacrine analogues for their inhibition against acetylcholinesterase enzyme. The latter is important in treating Alzheimer's disease (AD) which is a worldwide mental disorder manifested with dementia symptoms and anticipated to be the second causality of deaths by 2040.