



STUDY OF THE BINDING ABILITY OF MOLECULAR IMPRINTED SOLID PHASE EXTRACTION FOR GLIBENCLAMIDE BY OPTIMIZING TEMPLATE : MONOMER : CROSSLINKER RATIO

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ABSTRACT

Five molecularly imprinted polymer for glibenclamide was prepared by using glibenclamide as the template, acrylamide as the functional monomer and ethyleneglycoldimethacrylate as a cross linker in different ratios. Binding ability analysis showed that acetonitrile pH 4 is the best solvent for rebinding of the analyte. The imprinting factor (IF) was calculated by comparing the retention of glibenclamide on the imprinted polymer with a comparable non-imprinted polymer. The template : monomer : crosslinker ratio of 1:6:70 resulted in an IF of 6.85. This MIP has the potential for use in SPE for purification and concentration of glibenclamide and with further optimization.

Key words: Acrylamide, Non covalent polymerization, Glibenclamide, Molecular imprinted solid phase extraction.

INTRODUCTION

Solid Phase Extraction (SPE) is a sample preparation method that is widely used in the analysis process because it can reduce the time and amount of solvent extraction, as well as having high recoveries, especially in the preparation of biological samples¹. Conventional SPE has drawbacks in terms of selectivity so that there is the possibility of other components other than the analyte to be extracted from the sample matrix². Increased selectivity of conventional SPE can be performed using Molecular Imprinting Polymer technique known

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