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Characterisation and quality assessment of binding sites on a propazine-imprinted polymer prepared by precipitation polymerisation☆

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Abstract

In this paper, the Langmuir–Freundlich isotherm (LF) is used to characterise a propazine-imprinted polymer obtained by precipitation polymerisation (MIP-P). Different rebinding studies were carried out allowing to explain the different interactions taking place between the molecularly imprinted polymer and six triazinic herbicides (desisopropylatrazine, desethylatrazine, simazine, atrazine, propazine and prometryn). The LF fitting parameters obtained (total number of binding sites, heterogeneity index and mean binding affinity) were compared to those obtained in a previous work for a propazine-imprinted polymer prepared by bulk polymerisation (MIP-B). From that study, it was concluded that precipitation polymerisation yielded polymers with a more homogeneous binding site distribution and higher affinity constants.

Keywords: Precipitation polymerisation; Quality assessment; Molecular imprinting; Propazine

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