

SURFACE MOLECULAR IMPRINTING IN AQUEOUS MEDIUM ON POLYMER CORE-SHELL PARTICLES

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Abstract

Molecular imprinting technology is now firmly established as a way of preparing polymers with specifically shaped cavities for the recognition of small molecule templates (1). The use of emulsion polymerisation to form polymer core-shell particles (CS-MIP's), whereby the imprinting occurs at the surface of a polymer colloid (ca. 100nm), has been shown to be a very effective way of creating open-faced cavities for the recognition of shape and functionality in molecules such as caffeine and its analogue theophylline (2).

It was confirmed by the use of a C14-labelled caffeine radiotracer study, using liquid scintillation counting, that removal of 100% of the template caffeine can be carried out using mild solvent extraction procedures. Binding studies were also carried out to probe the surface molecular imprinting effect and Scatchard analysis gave a biphasic binding curve for the binding of caffeine to a caffeine-imprinted CS-MIP (3).

1. G. Wulff, *Angew. Chem.* 1995, **34**, 1812
2. S.R. Carter, S. Rimmer & ProMetic Biosciences Ltd, patent PCT/GB01/02794, 2001
3. S.R.Carter, S Rimmer, *Adv. Mater.*, 2002, **14**(9), 667-670

Keywords: molecular imprinting, core-shell particles