

Capillary hydrophilic interaction/weak cation exchange chromatography of sulfonamides using monolithic column by Nano LC

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Abstract

A monolithic capillary column with hydrophilic and ion exchange characters was prepared by *in-situ* polymerization of 2-hydroxyethyl methacrylate (HEMA), ethylene dimethacrylate (EDMA) and methacrylic acid(MAA) in a binary porogenic solvent consisting of toluene and 1-dodecanol. The resulting monolith was evaluated as a hydrophilic interaction/weak cation exchange chromatography of sulfonamides. The SEM figures of the prepared monolith showed that the HILIC column consisted of particles with the diameter about 2 μ m. Effect of salt concentration, ACN content and pH on the separation were also investigated using the prepared monolith. Compared with other antibiotics, the sulfonamides have a high potential to resist degradation and they have hydrophilic character. In this respect, the remarked feature of this approach is the first pharmaceutical hydrophilic application using monolithic capillary column in nano liquid chromatography.

[1] Dejaegher, B., Vander Heyden, Y., J. Sep. Sci. 2010 **33** 698-715

[2] Lan Lin, C., Cheng, Y.J., Huang, H.Y., Lee, S., Electrophoresis 2009 **30** 3828-3837