

Effect of concentration of ionic liquids on retention factor and resolution in RP-HPLC

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Ionic liquids in the form of organic salts are being widely used as new solvent media. Here we investigate the chromatographic behavior, with reversed μ -phase high performance liquid chromatography (RP-HPLC), of 10 compounds on a C18 column in several different mobile phase additives, including 1-Hexyl-3-methylimidazolium tetrafluoroborate ([HMim][BF₄]) and 1-Octyl-3-methylimidazolium tetrafluoroborate ([OMim][BF₄]). The effect of the imidazolium ring, and the ionic liquid's counterions on retention and resolution of the samples were tested. The results show the potential application of a used buffer system, ion pairing system, and ionic liquid as mobile phase additives in liquid chromatography.