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Polarity, selectivity and performance of hydrophilic organic/salt-containing aqueous two-phase system on counter-current chromatography for polar compounds

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Abstract

The essential attributes of a solvent system for separation polar compounds on CCC are polarity, selectively and performance. Here, hydrophilic organic/salt-containing aqueous two-phase system (HO/S TPS) was evaluated as an alternative solvent system for CCC separation of polar compounds. Polarity measurements based on Rohrschneider-Snyder parameter was developed as quantitative assessing the polarity of HO/S TPS and comparing with organic/aqueous system. All investigated 1-butanol/ethanol/saturated ammonium sulfate solution/water (BEAsWat) and 1-butanol/ethanol/saturated dipotassium hydrogen phosphate solution/water (BEDhpWat) systems with polarity values of organic phase from 4.5 to 6.8, were more polar than chloroform/methanol/water (1/1/1). The considerable water contents of BEAsWat and BEDhpWat (0/1/1/1/) was 45.4 and 42.6% (w%) of hydrophilic organic phase,

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