



正十二烷基-*L*-羟基脯氨酸手性配位萃取拆分外消旋苯丙氨酸
Resolution of *D,L*-Phenylalanine by Chiral Coordination Extraction with *n*-Dodecyl-*L*-hydroxyproline

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英文关键词: [n-dodecyl-*L*-hydroxyproline](#) [chiral ligand](#) [extraction resolution](#) [*D/L*-phenylalanine](#)

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中文摘要:

本文合成新手性配体正十二烷基-*L*-羟基脯氨酸, 研究手性配体正十二烷基-*L*-羟基脯氨酸与Cu(II)配位萃取拆分苯丙氨酸的性能和机理, 考察起始氨基酸浓度、配位铜离子浓度、萃取剂浓度、溶液pH值及温度等因素分别对*D*-和*L*-苯丙氨酸萃取性能的影响, 萃取剂对*D*-苯丙氨酸的识别能力强。利用多种手段对萃合物的组成进行表征, 推测萃合物的结构为1:1:1型三元配合物。对比发现: 该萃取剂配位萃取拆分苯丙氨酸性能优于正辛基-*L*-羟基脯氨酸, 空间位阻效应反而对拆分有利。

英文摘要:

The novel chiral extractant *n*-dodecyl-*L*-hydroxyproline was synthesized. The resolution of *D,L*-phenylalanine by chiral coordination extraction with *n*-Dodecyl-*L*-Hydroxyproline and Cu(II) was studied. The effect of the initial aqueous phenylalanine concentration, concentrations of copper ion and extractant, pH and extraction temperature on the extraction distribution of *D,L*-phenylalanine were investigated. The extractant showed better affinity for *D*-phenylalanine. The extracted species were characterized and the stoichiometry was suggested to be 1:1:1 to form a ternary complex. The results showed that the resolution efficiency with *n*-Dodecyl-*L*-Hydroxyproline is better than that with *n*-octyl-*L*-Hydroxyproline, which indicated that *n*-dodecyl with its bigger steric effect favors the separation of *D,L*-phenylalanine compared with the smaller *n*-octyl group.

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