

研究论文

抗氧化剂的毛细管电泳-间接化学发光联用在线评价方法研究

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摘要

根据碱性条件下羟自由基与luminol反应会产生化学发光而抗氧化剂能够清除羟自由基从而抑制发光的原理, 结合毛细管电泳技术, 建立了一种针对多组分共存体系中抗氧化组分的在线评价的新方法. 对这种毛细管电泳-间接化学发光检测技术, 优化化学发光的各种条件, 考察了抗氧化剂硫脲和麻黄碱的抗氧化活性, 采用曲线拟合法求出它们对羟自由基的半数清除浓度(IC<sub>50</sub>), 得出抗氧化活性大小为麻黄碱>硫脲, 这与荧光分光光度法的结果一致. 该方法初步应用于评价中药槐米提取物化学组分的抗氧化活性.

关键词 [毛细管电泳](#) [化学发光](#) [抗氧化剂](#) [评价](#) [在线](#)

分类号

**Study on the On-line Evaluation Method for Antioxidants by Capillary Electrophoresis with Indirect Chemiluminescence Detection**

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**Abstract** A novel method of on-line evaluation of antioxidants by capillary electrophoresis (CE) with indirect chemiluminescence (CL) detection was reported. It is based on the CL of luminol suppressed for lessened hydroxy radical which is scavenged by antioxidants in base condition. Optimal chemiluminescence conditions were obtained, and the antioxidant activities of thiourea and ephedrine were evaluated. The IC<sub>50</sub> values of thiourea and ephedrine were obtained by fitting curves, and the order of antioxidant activity is ephedrine>thiourea. The result was consistent with that of fluorospectrophotometry. The proposed method was preliminarily applied to evaluating the antioxidant activity of components of *Sophora japonica* L.

**Key words** [capillary electrophoresis](#) [chemiluminescence](#) [antioxidant](#) [evaluation](#) [on-line](#)

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