

研究论文

高效液相色谱-质谱法测定降血压保健食品中的8种违禁添加成分

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收稿日期 2008-6-18 修回日期 2008-9-1 网络版发布日期 2009-2-2 接受日期 2008-9-3

摘要 建立了降血压保健食品中8种违禁添加成分的高效液相色谱-电喷雾质谱联用(HPLC-ESI/MS)测定方法。采用Spherigel C18反相色谱柱,以0.005 mol/L甲酸铵缓冲盐(pH 3.0)-乙腈-甲醇为流动相,梯度洗脱,质谱定性定量。在该条件下,以西力士为内标,ESI+模式下的最低检出限(LOD)为2.5 μg/L;ESI-模式下的最低检出限为50 μg/L;回收率为63.3%~107.4%。该方法的样品处理简单,结果准确,重现性好,选择性及灵敏度高,适用范围广,可用于降压类药物及保健食品中违禁成分的检测。

关键词 [高效液相色谱-电喷雾质谱法](#) [违禁成分](#) [降血压保健食品](#)

Simultaneous determination of 8 illegal synthetic drugs in antihypertensive dietary supplements by high performance liquid chromatography-mass spectrometry

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Abstract

A method of high performance liquid chromatography-mass spectrometry (HPLC-MS) for the simultaneous determination of 8 illegal synthetic drugs in antihypertensive dietary supplements was developed. The chromatography was performed using a Spherigel C18 column, with the mobile phase of 0.005 mol/L ammonium formate buffer (pH 3.0)-acetonitrile-methanol and cialis as internal standard. In ESI+ mode, the lowest concentration limit of detection (LOD) was 2.5 μg/L and the lowest concentration limit of quantification (LOQ) was 8.3 μg/L, while in ESI- mode, the lowest concentration limit of detection (LOD) was 50 μg/L. The average recoveries were between 63.3%-107.4%. The clonidine, dihydrochlorothiazide, triamterene, metoprolol, phentolamine, chlorthalidone, furosemide and valsartan in the samples were separated well under the optimized conditions. The method was well validated by systematical searching for satisfactory conditions using the experimental designs including precision, repeatability and spiked recovery.

Key words [high performance liquid chromatography-mass spectrometry \(HPLC-MS\)](#) [illegal synthetic drugs](#) [antihypertensive dietary supplements](#)

DOI:

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