

论文

HPLC-MS/MS法研究精制蒜氨酸中有关物质

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摘要:

研究精制蒜氨酸样品中的有关物质。采用HPLC-MS/MS一级质谱扫描总离子流谱测定有关物质的准分子离子, 并利用他们的色谱保留时间、二级质谱及/或对照品对照进行结构鉴定。全扫描总离子流谱结果表明, 精制蒜氨酸中主要含7个有关物质成分, [M+H]⁺离子m/z分别为116, 133, 147, 152, 175及两个m/z同为178的蒜氨酸同分异构体。其中m/z为116, 133, 147, 175的[M+H]⁺离子相应的物质分别鉴定为脯氨酸、门冬酰胺、谷氨酰胺、精氨酸, m/z为152的[M+H]⁺离子鉴定为甲基-L-半胱氨酸亚砷, m/z 178的两个蒜氨酸同分异构体分别经二级质谱鉴定为异蒜氨酸和环蒜氨酸。精制蒜氨酸中主要有关物质分别为氨基酸及蒜氨酸的同系物及同分异构体。

关键词: 蒜氨酸 有关物质 HPLC-MS/MS

Related substances in purified alliin determined by HPLC-MS/MS

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Abstract:

To study the related substances in purified alliin, HPLC-MS/MS method carried out on a Phenomenex NH₂ column was used for screen and identification of the related substances with full scan MS spectra determination of their [M+H]⁺ ions and then the analyses of the retention time, product MS spectra and/or chemical reference standards. The full scan HPLC-MS chromatogram showed that there were seven major related substances in the purified alliin and their m/z of the [M+H]⁺ ions with increasing retention were 116, 133, 147, 152, 175, 178 and 178, separately. And they were identified as proline, asparagine, glutamine, methiin, arginine, isoalliin and cycloalliin (both were isomers of alliin), respectively. The major related substances in purified alliin are amino acids, homologen and the isomers of alliin.

Keywords: related substances HPLC-MS/MS alliin

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- ▶ 蒜氨酸
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