



乌头碱、新乌头碱、次乌头碱水解和醇解产物的研究

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中文摘要:目的:鉴定乌头碱等双酯型生物碱在水和乙醇中的高温分解产物,探究其转化规律。方法:利用液质联用手段,定性对照品在乙醇和水中的转化产物,并总结阐述转化规律。结果:通过对已知化合物的多级质谱的分析和文献查阅,确定了多个转化产物的结构。双酯型生物碱水解时主要生成苯甲酸乌头碱和焦乌头碱,醇解时主要生成焦乌头碱和8-乙氧基乌头碱。同时醇解和水解时还产生了多种脱氧、脱水、脱甲基的产物。结论:焦乌头碱类生物碱是由于热解产生的,同溶剂种类无关系;8-乙氧基乌头碱类生物碱是由于醇解产生的,同溶剂种类有关系。醇解过程较水解过程产生了更多的产物。本研究通过液质联用鉴定了多种生物碱转化产物并总结了质谱裂解规律,为川乌中毒性双酯型生物碱的转化研究奠定了良好的基础,为川乌煎煮过程中的生物碱的转化研究提供了资料。

中文关键词:双酯型生物碱 醇解产物 水解产物 焦乌头碱 8-乙氧基乌头碱 裂解规律

Identification of hydrolysates and alcoholysates of aconitum alkaloids

Abstract: Objective: To identify products decomposed in high temperature water and alcohol from diester alkaloids such as aconitum alkaloid, in order to study their transformation regularity. **Method:** Structures of multiple converted products were determined by analyzing on multistage mass spectrometry of known compounds and literature searching. **Result:** Benzoylamine and pyraconitine were the major hydrolysates, while pyraconitine and ethoxy-aconitine were the major alcoholysates from diester alkaloids. **Conclusion:** Pyraconitine alkaloids, as pyrolytic products, are not related to the type of solvent. 8-ethoxy-aconitine alkaloids, as alcoholysates, are related to the type of solvent. This study identifies multiple converted products from alkaloids and summarizes mass spectrometry fragmentation regularity by LC-MS, laying a firm foundation for studies on the transformation of toxic diester alkaloids contained in aconitum and providing a basis for studies on the transformation of alkaloids contained in aconitum during boiling.

keywords: diester alkaloids alcoholysate hydrolysate pyraconitine 8-ethoxy-aconitine fragmentation regularity

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