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大鼠肠内菌对毛冬青皂苷ilexsaponin A_1的代谢转化

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中文摘要:采用HPLC法研究大鼠肠内菌对毛冬青皂苷ilexsaponin A_1的代谢作用。研究采用Kromasil 100-5 C_{18}(250 mm×4.6 mm)为色谱柱，流动相为乙腈-0.02%三氟乙酸梯度洗脱，流速：1.0 mL/min，柱温：30 ℃。将ilexsaponin A_1加至大鼠肠内菌培养液中，温孵一定时间后，分析体外代谢产物和代谢模式；大鼠灌胃给予ilexsaponin A_1，分析尿液和粪便中的代谢产物，同时测定粪便样品中原型物和代谢产物的含量。结果表明，离体培养大鼠肠内菌可代谢ilexsaponin A_1，其主要代谢产物为其苷元ilexgenin A，培养48 h后，约93.12%的ilexsaponin A_1被转化成ilexgenin A；大鼠在体实验中，尿液未检测到原型物及代谢物，在粪便中可检测到原型物和代谢物苷元ilexgenin A；ilexsaponin A_1经口给予后经原物和代谢产物ilexgenin A排除体外的量高达89.85%。研究结果表明：ilexsaponin A_1经口给予后大部分经肠内菌群代谢后被排出体外，主要代谢产物为其苷元。

中文关键词:毛冬青 肠内菌群 代谢 生物转化

Metabolic transformation of ilexsaponin A_1 by intestinal flora

Abstract:A high-performance liquid chromatography method was used to investigate the metabolic transformation characteristics of ilexsaponin A_1 by rat intestinal flora in *vitro* and in *vivo*.The HPLC separation was performed on a reversed-phase Kromasil 100-5 C_{18}column (250 mm×4.6 mm) at a temperature of 30 °C and the mobile phase system consists of acetonitrile and trifluoroacetic acid (0.02%) in water using a gradient elution with the flow rate of 1.0 mL/min.*In vitro* samples were prepared by incubating ilexsaponin A_1 with intestinal flora of rats.*In vivo* samples including feces and urine samples were collected individually after oral administration of ilexsaponin A_1 to healthy rats.Then the *in vivo* and *in vitro* metabolism of ilexsaponin A_1 was investigated using the established HPLC method.The results showed that ilexsaponin A_1 could be metabolized to its aglycone (ilexgenin A) by rat intestinal flora *in vitro*,and after incubating for 48 h,about 93.12% of ilexsaponin A_1 was metabolized to ilexgenin A.*In vivo*,ilexsaponin A_1 and its aglycone were found in feces,but not in urine.It was found that ilexsaponin A_1could be metabolized to its aglycone by intestinal flora in *vitro* and in *vivo*,and after oral administration about 89.85% of ilexsaponin A_1 was exerceted as its prototype and metabolites.

keywords:*Ilex pubescens* Hook et Arn intestinal flora metabolism biotransformation

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