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论文

槐果碱等苦豆子生物碱对大鼠单胺代谢及多巴胺和5-羟色胺受体的作用

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摘要:

槐果碱(SPC)、拉马宁碱(LM),苦参碱、槐胺碱及槐定碱均能不同程度地升高大鼠纹状体及前脑边缘区的多巴胺代谢物二羟苯乙酸(DOPAC)和高香草酸(HVA)的含量。LM还能降低纹状体中的DA和边缘区中的NA。SPC(40 mg/kg)使纹状体中HVA升高的持续时间长于DOPAC。SPC对DOPAC和HVA的作用,在10～80mg/kg的剂量范围内,有明显的量效关系。SPC还能降低纹状体中的DA含量。受体结合试验表明,上述五种生物碱(LM未测试)对D-2受体、$5HT_1$和$5HT_2$受体无亲和力(IC_{50}均大于10^{-4}mol)。

关键词: 槐果碱 拉马宁碱 槐胺碱 槐定碱 苦参碱 氧化苦参碱

EFFECT OF SOPHOCARPINE AND OTHER ALKALOIDS FROM *SOPHORA ALOPECULOIDES* L. ON MONOAMINE METABOLISM, DOPAMINE AND 5-HT RECEPTORS

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Abstract:

Effect of sophocarpine and other alkaloid-s from *Sophora alopecuroides* L. on monoamine metabolism and D-2, $5HT_1$ and $5HT_2$ were studied by HPLC-electrochemical detection and receptor binding assay. Sophocarpine (SPC), lehmannine (LM), sophoramine (SPR), sophoridine (SPD) and matrine were found to significantly increase the dopamine metabolites dihydroxyphenylacetic acid (DOPAC) and or homovanillic acid (HVA) to various extent in rat striatum and limbic area. No effect of oxymatrine was observed in the experiments. LM also reduced the contents of DA in the striatum and NA in the limbic area. The elevation of HVA by SPC (40 mg/kg) lasted longer than that of DOPAC. The increase in HVA and DOPAC by SPC in the dose range of 10～80 mg/kg was dosedependent. At a higher dose (80 mg/kg) of SPC the DA content in the striatum was lowered. The data from *in vitro* radioreceptor binding assay showed that all tested compounds (LM not tested) showed no affinity for D-2. $5HT_1$ and $5HT_2$ receptors (IC_{50} >10^{-4}mol). It is likely that the central depressant activities of SPC, LM, SPR and matrine may be related to the changes of monoamine metabolism. All tested alkaloids showed no effect on the NA content in rat heart.

Keywords: Lehmannine Sophoridine Sophoramine Matrine Oxymatrine Sophocarpine

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