

论著

反式白藜芦醇联合胡椒碱对慢性应激大鼠的抗抑郁作用及其下丘脑相关机制

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摘要 目的 探讨反式白藜芦醇(trans-REV)合用胡椒碱后的抗抑郁作用是否涉及下丘脑5-羟色胺(5-HT)系统及下丘脑-垂体-肾上腺(HPA)轴。方法 建立慢性不可预知性应激模型,同时每天ip给予胡椒碱2.5 mg·kg⁻¹+ig给予trans-REV 2.5, 5, 10, 20和40 mg·kg⁻¹。开野和穿梭箱实验验证药物的抗抑郁作用;高效液相-电化学法检测下丘脑中5-HT及其代谢产物水平,荧光分光光度法检测单胺氧化酶(MAO)活性;计算肾上腺指数;酶联免疫法检测血清皮质酮水平。结果 胡椒碱合用trans-REV 20和40 mg·kg⁻¹可改善应激大鼠在开野实验中爬格数和探究次数的降低及理毛次数和粪便粒数的增加;胡椒碱合用trans-REV 10, 20和40 mg·kg⁻¹显著降低大鼠在穿梭箱中逃避失败次数;胡椒碱合用trans-REV 40 mg·kg⁻¹显著逆转下丘脑中5-HT等递质水平的下降及MAO活性的相对增高;此外,trans-REV合用胡椒碱后可抑制肾上腺指数及血清皮质酮含量的升高。结论 trans-REV合用胡椒碱可拮抗慢性应激引起的抑郁样行为,其机制可能与下丘脑中5-HT系统和HPA轴功能改变有关。

关键词 [反式白藜芦醇](#) [胡椒碱](#) [抗抑郁](#) [5-羟色胺系统](#) [下丘脑-垂体-肾上腺轴](#)

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Antidepressant effect of trans-resveratrol combined with piperine on chronic stressed rats and related mechanism

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Abstract

OBJECTIVE To study the antidepressant-like effect of trans-resveratrol and piperine in combination on chronic unpredictable stressed rats and investigate whether 5-hydroxytryptamine(5-HT) system in hypothalamus and the hypothalamic-pituitary-adrenal (HPA) axis were involved in this effect. **METHODS** Male SD rats were subjected to chronic stress and co-administered with trans-resveratrol(2.5, 5, 10, 20, 40 mg·kg⁻¹,ig)and piperine (2.5 mg·kg⁻¹, ip) once a day for 21 d. Then the open field test and shuttle-box test were used to affirm the successful depression of the animal model and the antidepressant activity of the combination of drugs. The monoamine neurotransmitter 5-HT and its metabolites in hypothalamus were detected by HPLC-ECD, while monoamine oxidase (MAO) activity was assayed using fluorescence spectrophotometry. Moreover, the adrenal gland index was computed, and ELISA was applied to measure the serum corticosterone level. **RESULTS** Trans-resveratrol 20 and 40 mg·kg⁻¹ combined with piperine alleviated the performance deficits in the open field test induced by stress significantly, and trans-resveratrol 10, 20 and 40 mg·kg⁻¹ could reduce the number of failure escape in the shuttle box test combined with piperine. In addition, combination of trans-resveratrol 40 mg·kg⁻¹ and piperine reversed the changes of 5-HT and its metabolites in hypothalamus induced by chronic stress markedly. The monoamine oxidase activity changed. In a subsequent experiment, the chronic stress paradigm caused a significant elevation of serum corticosterone and the adrenal gland index relative to the normal control group, which was inhibited by combination of trans-resveratrol and piperine. **CONCLUSION** The combination of trans-resveratrol and piperine exerts antidepressant-like effects, which may involve the 5-HT system of hypothalamus and the HPA axis.

Key words [trans-resveratrol](#) [piperine](#) [antidepressant](#) [5-hydroxytryptamine system](#) [hypothalamic-pituitary-adrenal axis](#)

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