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开心散对大鼠抑郁症模型内源性褪黑素生物合成的调控研究

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中文摘要:目的: 探寻开心散对大鼠抑郁症模型血浆褪黑素(melatonin, MT)浓度及松果腺MT生物合成限速酶的影响。 方法: 采用慢性不可预见的中等强度应激21 d建立大鼠抑郁模型,动物分为正常对照组、模型组、开心散低、中、高剂量组(KXS,65,130,260 mg·kg^{-1}·d^{-1})、曲唑酮组(10 mg·kg^{-1}·d^{-1}),用药各组于每日造模后30 min *ig*给药。造模第22天2:00采取尾静脉血和迅速断头取脑组织,分别采用液相芯片法检测血浆MT浓度,实时荧光定量PCR检测松果腺AANAT,HIOMT mRNA表达水平,同位素标记酶活性法检测二者的活性。 结果: 模型组大鼠血浆MT、松果腺AANAT和HIOMT mRNA水平、AANAT活性均低于对照组(P<0.05),而HIOMT活性未见降低。与模型组比较,开心散各剂量组均可提高大鼠血浆MT浓度(P<0.05),而以中剂量组最高;且中剂量组大鼠AANAT,HIOMT mRNA水平、AANAT活性均明显升高(P<0.05),但HIOMT活性未见增高。 结论: 开心散可提高大鼠抑郁症模型松果腺AANAT的活性,调控MT的生物合成。

中文关键词:开心散 抗抑郁 内源性褪黑素 调控机制

Study on regulatory effect of Kaixin San on endogenous melatonin biosynthesis in rat depression model

Abstract: Objective: To study the effect of Kaixin San on the rate-limiting enzyme in biosynthesis of melatonin (MT) and pineal body in rat depression model. Method: The unpredictable chronic mild stress was used to establish the rat depression model for 21 days. The rats were divided into the normal control group, the model group, Kaixin San low, medium and high dose groups (KXS 65, 130, 260 mg·kg^{-1}·d^{-1}) and the trazodone group. All groups were administered at 30 min after modeling each day. Rats were sacrificed and the pineal glands were isolated immediately after acquisition tail venous blood at 2:00a.m on the 22nd day. The plasma was analyzed for melatonin content by using a rat metabolic panel Milliplex kit. The pineal glands were analyzed for AANAT and HIOMT mRNA levels by Real-time quantitative PCR and for AANAT and HIOMT activity by a radiometric assay simultaneously. Result: The plasma MT concentration, expression of AANT and HIOMT mRNA, activity of AANAT in rat pineal glands of the model group were significantly lower than the control group (P<0.05), but the activity of HIOMT showed not change. Compared with the model group, all of Kaixin San groups showed increase in MT concentration in plasma (P<0.05), with the medium dose group revealing the highest level. Besides, the medium dose group displayed significant increase in AANAT, HIOMT mRNA level and AANAT activity (P<0.05), but no increase in HIOMT activity. Conclusion: Kaixin San can regulate AANAT activity of pineal bodyand regulate MT biosynthesis in rat depression model.

keywords: Kaixin San antidepressant endogenous melatonin regulatory mechanism

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