

论文

慢性孵育β淀粉样肽₂₅₋₃₅对培养大鼠海马神经元电压依赖性外向钾通道亚型mRNA表达的影响

金宏伟;张炜;王晓良

中国医学科学院、中国协和医科大学药物研究所, 北京 100050

摘要:

目的研究慢性孵育β淀粉样肽₂₅₋₃₅(β-AP₂₅₋₃₅)对海马神经元电压依赖性外向钾通道亚型mRNA表达的影响。方法用RT-PCR方法检测mRNA的表达,用光密度扫描法半定量测定表达变化。结果在正常培养的海马神经元上延迟整流(Kv2.1,Kv1.5),瞬间外向(A型)(Kv4.2,Kv1.4),钙激活的大电导(rSlo)钾通道亚型均有表达。β-AP₂₅₋₃₅ 3 μmol·L⁻¹孵育细胞24 h后,Kv2.1 mRNA的表达明显上调,其它亚型则无显著性变化;β-AP₂₅₋₃₅上调Kv2.1 mRNA的作用主要发生在β-AP₂₅₋₃₅应用后48 h内;60 h后Kv2.1 mRNA表达水平显著下调。结论Kv2.1转录水平的上调可能参与β-AP₂₅₋₃₅选择性地增加海马神经元上延迟整流钾电流(I_K)的作用。

关键词: RT-PCR 淀粉样β肽₂₅₋₃₅ 电压依赖性外向钾通道 海马神经元

EFFECTS OF CHRONIC EXPOSURE TO BETA-AMYLOID-PEPTIDE₂₅₋₃₅ ON THE mRNA EXPRESSIONS OF VOLTAGE-GATED OUTWARD POTASSIUM CHANNEL SUBUNITS IN CULTURED RAT HIPPOCAMPAL NEURONS

JIN Hong-wei; ZHANG Wei; WANG Xiao-liang

Abstract:

AIMTo investigate mRNA expression changes of voltage-gated outward potassium channel subtypes in cultured rat hippocampal neurons after chronic exposure to β-amyloid-peptide₂₅₋₃₅ (β-AP₂₅₋₃₅). METHODS mRNA expression was detected by RT-PCR, comparative expression levels were determined by imaging densitometer. RESULTS Delayed rectifying (Kv2.1, Kv1.5), transient outward (Kv1.4, Kv4.2) and large conductance calcium-activated (rSlo) potassium channel mRNA were expressed in cultured rat hippocampal. In the presence of β-AP₂₅₋₃₅ 3 μmol·L⁻¹ for 24 h, the relative expression level of Kv2.1 was significantly increased (N=3, P<0.05); the other subtypes were not changed obviously (N=3, P>0.05). The increase of Kv2.1 mRNA mainly happened between 24 and 36 h after exposure to β-AP₂₅₋₃₅. After exposure to β-AP₂₅₋₃₅ for 60 h, Kv2.1 mRNA decreased significantly (N=3, P<0.01). CONCLUSIONThe upregulation of Kv2.1 on transcription levels may be involved in the enhancement of delayed rectifying outward potassium (I_K) current induced by β-AP₂₅₋₃₅.

Keywords: beta-amyloid peptide₂₅₋₃₅ voltage-gated outward potassium channel hippocampal neuron RT-PCR

收稿日期 2001-09-10 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者: 王晓良

作者简介:

参考文献:

本刊中的类似文章

1. 钟焱;程桂芳;赖春宁;洪海燕;朱秀媛. 异丹叶大黄素和白藜芦醇对小鼠腹腔巨噬细胞白细胞介素6 mRNA表达的影响[J]. 药学报, 1999,34(5): 329-332

文章评论 (请注意:本站实行文责自负, 请不要发表与学术无关的内容!评论内容不代表本站观点.)

扩展功能

本文信息

- Supporting info
- PDF(153KB)
- [HTML全文]
- 参考文献

服务与反馈

- 把本文推荐给朋友
- 加入我的书架
- 加入引用管理器
- 引用本文
- Email Alert
- 文章反馈
- 浏览反馈信息

本文关键词相关文章

- RT-PCR
- 淀粉样β肽₂₅₋₃₅
- 电压依赖性外向钾通道
- 海马神经元

本文作者相关文章

- 金宏伟
- 张炜
- 王晓良

PubMed

- Article by
- Article by
- Article by

反馈人	<input type="text"/>	邮箱地址	<input type="text"/>
反馈标题	<input type="text"/>	验证码	<input type="text"/> 9232