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论文

番泻甙、大黄多糖和大黄素对脑细胞内游离钙浓度的影响

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摘要:

关键词: 番泻甙 大黄多糖 大黄素 新型钙离子指示剂(Pura-2)

EFFECTS OF SENNOSIDES,RHUBARB POLYSACCHARIDES AND EMODIN ON THE CYTOPLASMIC FREE CALCIUM IN ISOLATEC RAT BRAIN CELLS

XZ Lin and ZH Jin

Abstract:

Free intracellular Ca^{2+}([Ca^{2+}]i) levels in rat brain were measured by Ca^{2+}——sensitive fluorescent indicator Fura-2/Am and the effects of sennoside(SEN),polysaccharides from *Rheum palmatum*(RPP)and emodin(EMD)were studied.ResuIts showed that the resting[Ca^{2+}]ilevel in the brain cells was 176. 25 ± 44.67 nmol·L^{-1}(n=10)in Ca^{2+}-free Hank's solutioncontaining EGTA 0,5 mmol·L^{-1}.After adding $CaCl_2$(2 mmol·L^{-1})and KCI(120 mmol·L^{-1})to the brain cells suspension sequentially,the free[Ca^{2+}]i levels were obviously elevated(P<0.01)compared with that of resting level.The brain cells were pretreated with SEN (0.07,0.37mmol.L^{-1}) for 10 min。 In the resting or using the above doses of CaCl2 and KCI,the[Ca2+]i wereobviously decreased compared with the control groups(P<0.01)at the same conditions.RPP dose-dependently decreased the [Ca^{2+}]i.On the contrary,when brain cells were pretreated with EMD(0.037 mmol·L^{-1}) for 10 min, the[Ca^{2+}]i were obviously increased compared with the controlgroups(*P*<0.01)at the same conditions.The results showed that EMD could not only promote therelease of intracellular Ca^{2+} but also the influx of extracellular Ca^{2+}, The opposite effects of thedifferent active components of rhubarb on the[Ca^{2+}]i levels suggest that rhuharb may have differentkinds of regulatory functions on brain cells.

Keywords: Rhuharb polysaccharide EmOdin Fura-2/AmThe project is supported by National Nature Science Foundation of China sennoside

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