Myocardial protective effect of medicinal plant antioxidant trilinolein isolated from panax pseudoginseng

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摘要

Abstract

In a previous study we demonstrated that trilinolein, a natural plant triacylglycerol, is a novel myocardial protective agent in vivo. The mechanism probably involves an antioxidant effect. This work investigated the mechanism of myocardial protection of trilinolein to determine if inhibition of calcium influx and alteration of activity of superoxide dismutase are involved. Ln isolated cardiomyocytes, pretreatment with trilinolein at a low concentration of 10(-9)M effectively reduced Ca-45(2+) influx stimulated by hypoxia/normoxia by 34 %. In isolated perfused rat heart subjected to 60 min global hypoxemia without reperfusion, pretreatment with 10(-7) M trilinolein for 15 min reduced infarct size by 37%. Assay of superoxide dismutase-mRNA by Northern blot analysis in in vivo rat heart subjected to 30 min ischaemia and 10 min reperfusion showed pretreatment with 10(-)(7) M trilinolein had a synergistic action with antioxidant systems preventing the rise in superoxide dismutase-mRNA. These results reconfirm the myocardial protection of trilinolein and suggest it may be related to antioxidant activity and inhibition of Ca-45(2+) influx. [References: 25]

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