癌变.畸变.突变 ISSN: 1004-616x CN:44-1063/R 2004; 16(5) :286-289

论著

中药提取物在肝微粒体和相关自由基模型中反应性的筛选

海春旭；王文亮

第四军医大学毒理学教研室，陕西 西安 710032

收稿日期 2004-2-12 修回日期 2004-3-16 网络版发布日期:

摘要 背景与目的：检验“抗氧化剂复合链”假说指导筛选的复合抗氧化剂在大鼠肝微粒体自由基反应模型中的反应性。材料与方法：微粒体模型和动物模型和微粒体脂质过氧化活化体系包括：CCl4、Vc/Fe＋＋、CHP、耗氧量等模型以及相关自由基反应模型包括羟胺竞争法发生超氧阴离子自由基和抗坏血酸/铜产生羟自由基等模型，筛选和测定了中药的水和乙醇提取物的抗氧化活性，以及经过筛选组成的复合抗氧化剂对自由基的综合抑制效应。结果：当归、人参、枸杞、黄芪、党参的水提取液在微粒体CCl4、VC/Fe＋＋、CHP激发模型及自由基模型中，均呈现不同程度的脂质过氧化的抑制作用，但是，人参水提取液除了对VC/Fe＋＋激发模型的抑制作用较弱外，均表现出较强的抗氧化作用；枸杞、党参、黄芪水提取液除了对超氧阴离子自由基(O－.)模型和枸杞乙醇提取液对CHP模型呈现较强的过氧化刺激作用外，各种乙醇提取液对CCl4、VC/Fe＋＋、CHP和摄氧量激发模型均表现为不同程度的抑制作用。复合抗氧化剂-安体欣对所选模型均呈现较强的自由基生成抑制作用。结论：中药当归、人参、枸杞、黄芪、党参的水或乙醇单独提取物的抗氧化作用存在局限性，在不同模型系统中呈现不同的反应性-即抑制或刺激作用。经过按“抗氧化剂复合链假说”筛选组成的复合抗氧化剂-安体欣对所选各种过氧化和自由基模型具有较强的抑制活性。

关键词 微粒体模型；抗氧化剂；自由基

Study on the Reactivity of Slecting Chinese Hrbal Medicine Extracts in Hepatic Microsomal and Related Free Radical Models

HAI Chun-xu，WANG Wen-liang

Department of Toxicology，The Fourth Military Medical University，Xi'an 710032 ，China

Abstract BACKGROUND & AIM :To ascertain the reactivity of multi-antioxidants-ANTIOXIN selected and formed according to hypothesis "Multi-Antioxidant Chain" in hepatic microsomal and chemical modes of lipid peroxidation. MATERIAL AND METHODS: Lipid peroxidation was stimulated by CCl4,Vc/Fe＋＋ and cumene hydroperoxide(CHP)in hepatic microsomal models ,and superoxide anion free radicals(O2－.)were generated by assay of hydroxylamine competition and hydroxide free radicals(•OH) generated by Vc/Cu＋＋ in chemical models to determine reactivity of the antioxidants. The antioxidative activity of water-or/and ethanol-extracts,and multi-antioxidants were determined and selected by those models. RESULTS： The water-extracts of Chinese angelicae,Ginseng, Wolfberry fruit, Astragalus and Dangshen presented different inhibition on lipid peroxidation of microsomal models stimulated by CCl4, Vc/Fe＋＋， CHP and free radical models.The all water-extracts,except that of Ginseng presented weak inhibition on model generated by Vc/Fe＋＋ and that of Wolfberry fruit presented strongly stimulation on model generated by CHP,showed potent antioxidation in various models of lipid peroxidation and free radical.The extracts of herbal medicine showed inhibition on models of lipid peroxidation stimulated by CCl4、VC/Fe＋＋、CHP and model of oxygen uptake in dissimilar extent.The multi-antioxidants-ANTIOXIN came strongly forth inhibition on production of freeradicals in all models-selected. CONCLUSION： There were definite astriction of water-extracts or ethanol-extracts of Chinese angelicae,Ginseng,Wolfberry fruit,Astragalus and Dangshen used individually in antioxidation and scavenging free radical,and they showed distinct reactivity that was inhibition or stimulation on different model system.Those

multi-antioxidants -ANTIOXIN selected and formed according to hypothesis-"Multi-Antioxidant Chain"had strong activity of antioxidation and inhibition on free radical in hepatic microsomal and chemical modes of lipid peroxidation.

Keywords microsomal model； antioxidant； free radical

DOI

通讯作者 海春旭 Cx－hai@fmmu.edu.cn