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Effect of Salvia leriifolia Benth. root extracts on ischemia-reperfusion in rat skeletal muscle

Hosseinzadeh, H.[a] , Hosseini, A.[b] , Nassiri-Asl, M.[c] , Sadeghnia, H.-R.[d]

[a] Department of Pharmacology and Toxicology, Pharmaceutical Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

[b] Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

[c] Department of Pharmacology, Faculty of Medicine, Qazvin University of Medical Sciences, Qazvin, Iran

[d] Department of Pharmacology, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Abstract

View references (56)

Background: Salvia leriifolia have been shown to decrease ischemia-reperfusion (I/R) injury in brain tissues. In this study, the effects of S. leriifolia aqueous and ethanolic extracts were evaluated on an animal model of I/R injury in the rat hind limb. Methods: Ischemia was induced using free-flap surgery in skeletal muscle. The aqueous and ethanolic extracts of S. leriifolia (100, 200 and 400 mg/kg) root and normal saline (10 ml/kg) were administered intraperitoneally 1 h prior reperfusion. During preischemia, ischemia and reperfusion conditions the electromyographic (EMG) potentials in the muscles were recorded. The markers of oxidative stress including thiobarbituric acid reactive substances (TBARS), total sulfhydryl (SH) groups and antioxidant capacity of muscle (using FRAP assay) were measured. Results: In peripheral ischemia, the average peak-to-peak amplitude during ischemic-reperfusion was found to be significantly larger in extracts groups in comparison with control group. Following extracts administration, the total SH contents and antioxidant capacity were elevated in muscle flap. The MDA level was also declined significantly in test groups. Conclusion: It is concluded that S. leriifolia root extracts have some protective effects on different markers of oxidative damage in muscle tissue injury caused by lower limb ischemia-reperfusion. © 2007 Hosseinzadeh et al; licensee BioMed Central Ltd.

Reaxys Database Information

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Indexed Keywords

EMTREE drug terms: alcohol; plant medicinal product; Salvia leriifolia extract; sodium chloride; thiobarbituric acid reactive substance; thiol derivative; unclassified drug; antioxidant; plant extract

EMTREE medical terms: animal experiment; animal model; antioxidant activity; article; controlled study; electromyography; extraction; limb ischemia; male; muscle ischemia; nonhuman; oxidative stress; plant root; rat; reperfusion injury; Salvia; Salvia leriifolia; skeletal muscle; statistical significance; Wistar rat; animal; comparative study; disease model; drug effect; intraperitoneal drug administration; metabolism; methodology; phytotherapy

MeSH: Animals; Antioxidants; Disease Models, Animal; Electromyography; Injections, Intraperitoneal; Male; Muscle, Skeletal; Phytotherapy; Plant Extracts; Plant Roots; Rats; Rats, Wistar; Reperfusion Injury; Salvia; Sodium Chloride; Sulfhydryl Compounds; Thiobarbituric Acid Reactive Substances
Medline is the source for the MeSH terms of this document.

Chemicals and CAS Registry Numbers: alcohol, 64-17-5; sodium chloride, 7647-14-5; thiol derivative, 13940-21-1;Antioxidants; Plant Extracts; Sodium Chloride, 7647-14-5; Sulfhydryl Compounds; Thiobarbituric Acid Reactive Substances

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