27 Effect of Rhodiola Crenulata on Cardiac Apoptosis in Mice with Chronic Intermittent Hypoxia

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The goal of this study is to determine if Rhodiola crenulata (RC) has protective effects on hypoxia-induced cardiac apoptosis.

Forty-eight Sixty-four C57BL/6J mice 5-6 months of age were divided into three four groups *i.e.* Control group (21% O_2, 24 h per day, 8 weeks, n = 16); Hypoxia group (Hypoxia: 7% O_2 60 seconds, 20% O_2 alternating 60 seconds, 8 h per day, 8 weeks, n = 16); Hypoxia+ 90RC and Hypoxia+270RC group (Hypoxia for 1st 4 weeks and hypoxia pretreated 90 mg/kg and 270 mg/kg Rhodiola crenulata by oral gavage per day for 2nd 4 weeks, each n = 16). The excised hearts from four groups were measured by the heart weight index, H&E staining, TUNEL-positive assays and Western Blotting.

TUNEL-positive apoptotic cells in mice heart were less in Hypoxia+RC90, Hypoxia+RC270 than those in Hypoxia. Compared with Hypoxia, the protein levels of Fas ligand, Fas death receptors, Fas-associated death domain (FADD), activated caspase 8, and activated caspase 3 (Fas pathways) were decreased in Hypoxia+RC90, Hypoxia+RC270. The protein levels of Bax, Bax-to-Bcl2 ratio, Bid, t-Bid, activated caspase 9, and activated caspase 3 (mitochondria pathway) were less in Hypoxia+RC90, Hypoxia+RC270 than those in hypoxia.

Our finding suggest that Rhodiola crenulata have protective effects on chronic intermittent hypoxia-induced Fas-dependent and mitochondria-dependent apoptotic pathways in mice heart.

Key Words: apoptotic, low oxygen, caspase, hypoxia, hypoxic, heart

紅景天對慢性低氧症老鼠抗心臟凋亡的效用

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