Cynaropicrin

Cynaropicrin is a sesquiterpene lactone of the guaianolide type found mainly in the leaves of artichoke plants. It is one of the compounds that give the artichoke its characteristic bitterness. It is found in artichoke leaves with an abundance of approximately 87 g/kg, but can hardly be found in other parts of the plant.

Cynaropicrin, exhibits various pharmacologic properties and also has an anti-inflammatory property associated with the suppression of the key pro-inflammatory NF-κB pathway. The protective effect of cynaropicrin against oxidative stress and neuroinflammation during CIR injury through the modulation of NF-κB pathway was studied in the current investigation. The experimental rats split into 5 groups sham-operated control group (group 1), middle cerebral artery occlusion (MCAO)-induced rats (group 2), and MCAO rats treated with cynaropicrin (diluted in saline) immediately 2 h after MCAO with 5, 10, and 25 mg/kg administration orally were designated as groups 3, 4, and 5, respectively. In MCAO-induced animals, the severity of ischemic was evident by the elevated level nitrate, MDA, MMPs, inflammatory mediators, Bax, caspase-3, and NF-κB. The level of Nrf-2, antioxidant enzymes, Bcl-2, and IL-10 was reduced in the MCAO-induced animals. Treatment with cynaropicrin in dosage-based manner increased the level of antioxidant enzymes, IL-10, Nrf-2, and Bcl-2 in the animals which indicates the antioxidative effect of cynaropicrin. The level of nitrate, MDA, MMPs, proinflammatory cytokines, inflammatory mediators, Bax, caspase-3, and NF-κB was reduced in the rats treated with cynaropicrin in a dosage-based manner. Experimental animals treated with cynaropicrin in a dosage-dependent way showed a defensive mechanism against oxidative stress and neuroinflammation by inhibiting the NF-κB pathway [1)].

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Jin T, Leng B. Cynaropicrin Averts the Oxidative Stress and Neuroinflammation in Ischemic/Reperfusion Injury Through the Modulation of NF-kB. Appl Biochem Biotechnol. 2022 Jul 15. doi: 10.1007/s12010-022-04060-x. Epub ahead of print. PMID: 35838888.