Triphala

Oxidative stress is implicated in the progression of many neurological diseases, which could be induced by various chemicals, such as hydrogen peroxide (H2O2) and acrylamide. Triphala is a well-recognized Ayurvedic medicine that possesses different therapeutic properties (e.g., antihistamine, antioxidant, anticancer, anti-inflammatory, antibacterial, and anticariogenic effects). However, little information is available regarding the neuroprotective effect of Triphala on oxidative stress.

Materials and methods: An in vitro H2O2-induced SH-SY5Y cell model and an in vivo acrylamideinduced zebrafish model were established. Cell viability, apoptosis, and proliferation were examined by MTT assay, ELISA, and flow cytometric analysis, respectively. The molecular mechanism underlying the antioxidant activity of Triphala against H2O2 was investigated dose dependently by Western blotting. The in vivo neuroprotective effect of Triphala on acrylamide-induced oxidative injury in Danio rerio was determined using immunofluorescence staining.

Results: The results indicated that Triphala plays a neuroprotective role against H2O2 toxicity in inhibiting cell apoptosis and promoting cell proliferation. Furthermore, Triphala pretreatment suppressed the phosphorylation of the mitogen-activated protein kinase (MARK) signal pathway (p-Erk1/2, p-JNK1/2, and p-p38), whereas it restored the activities of antioxidant enzymes (superoxide dismutase 1 (SOD1) and catalase) in the H2O2-treated SH-SY5Y cells. Consistently, similar protective effects of Triphala were observed in declining neuroapoptosis and scavenging free radicals in the zebrafish central neural system, possessing a critical neuroprotective property against acrylamide-induced oxidative stress.

Conclusion: In summary, Triphala is a promising neuroprotective agent against oxidative stress in SH-SY5Y cells and zebrafishes with significant antiapoptosis and antioxidant activities ¹⁾.

1)

Ning W, Li S, Tsering J, Ma Y, Li H, Ma Y, Ogbuehi AC, Pan H, Li H, Hu S, Liu X, Deng Y, Zhang J, Hu X. Protective Effect of Triphala against Oxidative Stress-Induced Neurotoxicity. Biomed Res Int. 2021 Apr 7;2021:6674988. doi: 10.1155/2021/6674988. PMID: 33898626; PMCID: PMC8052154.

From: https://neurosurgerywiki.com/wiki/ - **Neurosurgery Wiki**

Permanent link: https://neurosurgerywiki.com/wiki/doku.php?id=triphala

Last update: 2024/06/07 02:57

1/1

Triphala