Coptisine is an isoquinoline alkaloid originally found in a variety of sources, including species of Fumeria and Papavera. Coptisine exhibits a wide variety of beneficial properties, including cardioprotective, anti-inflammatory, neuromodulatory, antibacterial, and anticancer activities. Coptisine attenuates mitochondrial respiratory dysfunction, inhibits expression of RhoA and/or Rho-associated kinase (ROCK), and decreases myocardial apoptosis. Coptisine also inhibits proliferation of vascular smooth muscle cells, potentially through upregulation of Gadd45a and Rgc32 genes. Coptisine induces cell cycle arrest in vascular smooth muscle cells as well, decreasing levels of cyclin D1 and potentially inhibiting microtubule polymerization. In heart tissue, this compound inhibits expression of IL-6, TNF-α, and IL-1β, displaying cardioprotective benefit in animal models of ischemia/reperfusion. Coptisine inhibits proliferation in cancer cell lines. This compound also inhibits monoamine oxidase A (MAO-A) and exhibits antibiotic activity against gram negative bacteria Escherichia coli.

**References**


