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Pterostilbene

National Cancer Institute

Source

National Cancer Institute. *Pterostilbene*. NCI Thesaurus. Code C153353.

: A naturally-derived stilbenoid structurally related to resveratrol, with potential antioxidant, anti-inflammatory, pro-apoptotic, antineoplastic and cytoprotective activities. Upon administration, pterostilbene exerts its anti-oxidant activity by scavenging reactive oxygen species (ROS), thereby preventing oxidative stress and ROS-induced cell damage. It may also activate the nuclear factor erythroid 2-related factor 2 (Nrf2)-mediated pathway and increase the expression of various antioxidant enzymes, such as superoxide dismutase (SOD). In addition, pterostilbene is able to inhibit inflammation by reducing the expression of various inflammatory mediators, such as interleukin (IL) 1beta, tumor necrosis factor alpha (TNF-a), inducible nitric oxide synthase (iNOS), cyclooxygenases (COX), and nuclear factor kappa B (NF-kB). It also inhibits or prevents the activation of many signaling pathways involved in carcinogenesis, and increases expression of various tumor suppressor genes while decreasing expression of certain tumor promoting genes. It also directly induces apoptosis in tumor cells.