Perillyl alcohol is a monoterpene found in various plant and fruit sources. Perillyl alcohol exhibits neuroprotective, antioxidative, anti-inflammatory, anti-asthma, anti-allergic, immunomodulatory, anticancer chemotherapeutic, and chemopreventive activities. In animal models of stroke, perillyl alcohol inhibits neurological deficits, improves motor coordination, increases levels of glutathione, catalase, glutathione reductase, and glutathione peroxidase, decreases infarct volume, and suppresses expression of IL-1β, TNF-α, IL-6, COX-2, INOS, and NF-κB. Perillyl alcohol inhibits farnesyl transferase, geranylgeranyl transferase, telomerase, and Na+/K+ ATPases. In animal models of OVA-induced allergy, perillyl alcohol suppresses proliferation of antigen-stimulated immune cells, decreasing the allergic response. This compound shows clinical benefit in the treatment of glioblastoma and induces G1 phase cell cycle arrest and increases expression of p15 and p21 in cellular models of cancer. Additionally, perillyl alcohol prevents UV- and DMBA-induced development of skin cancer in vivo.

References


Stratton SP, Alberts DS, Einspahr JG, et al. A phase 2a study of topical perillyl alcohol cream for chemoprevention of skin