Benzyl isothiocyanate (BITC) is an isothiocyanate originally found in cruciferous vegetables that exhibits immunomodulatory, anti-parasitic, antibiotic, antioxidative, anti-atherosclerotic, anti-angiogenic, anti-metastatic, anticancer chemotherapeutic, and chemopreventive activities. BITC inhibits IL-13 expression in basophils. BITC induces phase II enzymes, increasing levels of heme oxygenase 1 (HO-1), glutathione, and glutamate cysteine ligase; it also decreases levels of ROS, activation of NF-κB, adhesion of monocytes, and expression of ICAM-1, VCAM-1, and E-selectin. This compound inhibits growth of Trypanosoma and displays antibacterial efficacy against Campylobacter by disrupting metabolic processes. In vitro and in vivo, BITC decreases high fat diet-induced tumor growth and multiplicity, also inhibiting macrophage migration and lipid droplet accumulation. This compound inhibits squamous cell carcinoma cell invasion and migration and induces apoptosis and autophagy in prostate cancer cells. In various animal models, BITC inhibits development of mammary gland tumors and decreases activation of STAT3 and secretion of VEGF, MMP-2, and HIF-1α.

References


Caution: This product is intended for laboratory and research use only. It is not for human or drug use.