Plumbagin is a naphthoquinone found in a variety of Plumbago species; it exhibits anticancer, anti-inflammatory, antibacterial, and anti-diabetic activities. In cellular models of cancer, plumbagin increases reactive oxygen species production, increases the Bax/Bcl-2 ratio, inhibits activation of NF-κB, and increases caspase activity, inducing apoptosis. In an in vivo model of ulcerative colitis, plumbagin decreases levels of pro-inflammatory cytokines such as TNF-α, IL-17, and IFN-γ, and also decreases colonic monocyte aggregation. This compound also inhibits the assembly and GTPase activity of FtsZ, which plays a significant role in bacterial cell division, inhibiting proliferation in vitro. Additionally, plumbagin inhibits TGF-β1-induced fibronectin and collagen IV expression in vitro and reverses diabetic nephropathy via alterations in Nox4 signaling in diabetic mice.

References


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