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Polypodium leucotomos Extract

National Cancer Institute

Source

National Cancer Institute. *Polypodium leucotomos Extract*. NCI Thesaurus. Code C129595.

A nutritional supplement composed of an aqueous extract derived from the leaves of the tropical fern belonging to the Polypodiaceae family, *Polypodium leucotomos* (PL; *Phlebodium aureum*), with potential photoprotective, skin protective, anti-inflammatory, immunomodulating and antioxidant activities. This extract contains many phenolic compounds, such as ferulic, caffeic, coumaric and vanillic acid, which are mainly responsible for this extract's effects. Upon administration, *Polypodium leucotomos* extract (PLE) exerts antioxidant activity by scavenging free radicals and inhibiting the generation and release of reactive oxygen species (ROS), thereby preventing ultraviolet (UV)-induced as well as ROS-induced DNA damage. In addition, the chemicals in this extract protect antioxidant enzymes and modulate expression of cancer and inflammation-related genes, including the induction of the expression of tumor suppressor genes and the inhibition of the expression of pro-inflammatory cytokines and inflammatory enzymes, thereby inhibiting the activation of signal transduction pathways involved in carcinogenesis and inflammation, respectively. PLE also stimulates tissue inhibitors of metalloproteinases (TIMPs) and inhibits matrix metalloproteinases (MMPs).