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Realgar-Indigo naturalis Formulation

National Cancer Institute

Source

National Cancer Institute. *Realgar-Indigo naturalis Formulation*. NCI Thesaurus. Code C117289.

An orally bioavailable, traditional Chinese medicine (TCM)-based formulation composed of Realgar-Indigo naturalis formula (RIF) with potential antineoplastic activity. The main constituents in RIF are realgar, Indigo naturalis, and Salvia miltiorrhiza, with tetraarsenic tetrasulfide (As₄S₄), indirubin and tanshinone IIA as the main active ingredients, respectively, which appear to exert synergistic effects on cancer cells. Tetraarsenic tetrasulfide specifically induces the ubiquitination and degradation of promyelocytic leukemia retinoic acid receptor alpha (PML-RARalpha) oncoprotein. In addition, the active ingredients in the Realgar-Indigo naturalis formulation enhance the expression of myeloid differentiation genes, and induce G(1)/G(0) cell cycle arrest. PML-RARalpha, an acute promyelocytic leukemia (APL)-specific fusion gene, inhibits differentiation and promotes survival of myeloid precursor cells