ERa36 Modulator Icaritin

National Cancer Institute

Source

National Cancer Institute. ERa36 Modulator Icaritin. NCI Thesaurus. Code C95720.

A metabolite of icariin, a principal flavonoid glycoside in Herba Epimedii (a traditional Chinese medicine herb used in treating osteoporosis) with potential antineoplastic activity. ERa36 modulator icaritin selectively binds to a novel variant of estrogen receptor alpha, a36, and mediates a membrane-initiated "nongenomic" signaling pathway, which is linked to activate signaling pathways like the MAPK/ERK and the PI3K/Akt pathways. This agent induces cell cycle arrest at G1, or G2/M arrest depending upon the dose. Consistently with G1 arrest, icaritin increases protein expressions of pRb, p27(Kip1) and p16(Ink4a), while decreasing phosphorylated pRb, Cyclin D1 and CDK4. 40% of ER-negative breast cancer tumors express high levels of ERa36, and this subset of patients is less likely to benefit from tamoxifen treatment compared with those with ERa66-positive/ERa36-negative tumors.