**BIOLOGICAL ACTIVITY:**

Auranofin (SKF–39162) is a thioredoxin reductase (TrxR) inhibitor with an IC₅₀ of 0.2 μM.

IC₅₀ & Target: IC₅₀: 0.2 μM (TrxR)

*In Vitro:* Auranofin is a drug that is approved for the treatment of rheumatoid arthritis but is being investigated for potential therapeutic application in a number of other diseases including cancer, neurodegenerative disorders. Auranofin induces apoptosis in cells through a Bax/Bak–dependent mechanism associated with selective disruption of mitochondrial redox homeostasis in conjunction with oxidation of Prx3. Auranofin inhibits proliferation and survival of SKOV3 cells in a dose– and time–dependent manner. Auranofin treatment activates the pro–apoptotic caspase–3, increases protein levels of apoptosis–inducing proteins Bax and Bim and reduces the expression of the anti–apoptotic mediator Bcl–2 in SKOV3 cells. Auranofin is a lipophilic gold compound with anti–inflammatory and immunosuppressive properties. Auranofin inhibits the cell growth and induction of mitochondrial apoptosis in PC3 human prostate cancer cells. Treatment with auranofin significantly inhibits cell viability with an IC₅₀ value of 2.5 μM after 24 h. *In Vivo:* Prophylactic treatment of adjuvant–induced arthritis rats with auranofin results in a slight reduction in paw edema, a complete normalization of the depressed IL–2 production, and a reduction of the elevated IL–1 production, but has no effect on the depressed IL–3 production.

**PROTOCOL (Extracted from published papers and Only for reference)**

**Cell Assay:** Auranofin is dissolved in DMSO. Cells are treated with auranofin (0, 50, 100, 200 and 400 nM) for 72 h for the dose–dependent response assay and 100 nM of auranofin is added into the wells for 0, 24, 72 and 120 h for the time–dependent response assay. Control cultures are treated with DMSO. Cell viability is measured by the MTT assay.

**Animal Administration:** Rat: Prophylactically, auranofin (6.7 to 15 mg of gold/kg), indomethacin (2 mg/kg) or tragacanth vehicle control were administered orally at daily intervals beginning on the day of adjuvant injection. On days 16 to 17 peritoneal exudate cells or spleen cells from normal or adjuvant–injected rats were isolated and tested.

**References:**


Caution: Product has not been fully validated for medical applications. For research use only.

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