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Gold Sodium Thiomalate

National Cancer Institute

Source

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The sodium salt of gold thiomalic acid, an organogold compound with antirheumatic and potential antineoplastic activities. Gold sodium thiomalate (GST) appears to inhibit the activity of atypical protein kinase C ι (PKC ι) by forming a cysteinyl-aurothiomalate adduct with the cysteine residue Cys-69 within the PB1 binding domain of PKC ι . This prevents the binding of Par6 (Partitioning defective protein 6) to PKC ι , thereby inhibiting PKC ι -mediated oncogenic signaling, which may result in the inhibition of tumor cell proliferation, the promotion of tumor cell differentiation, and the induction of tumor cell apoptosis. Atypical PKC ι , a serine/threonine kinase overexpressed in numerous cancer cell types, plays an important role in cancer proliferation, invasion, and survival; Par6 is a scaffold protein that facilitates atypical PKC-mediated phosphorylation of cytoplasmic proteins involved in epithelial and neuronal cell polarization.