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Colloidal Gold-Bound Tumor Necrosis Factor

National Cancer Institute

Source

National Cancer Institute. *Colloidal Gold-Bound Tumor Necrosis Factor*. NCI Thesaurus. Code C62538.

A nanoparticle delivery system for recombinant human tumor necrosis factor (TNF) consisting of recombinant TNF bound to pegylated colloidal gold nanoparticles with potential antineoplastic activity. Upon intravenous administration, colloidal gold-bound recombinant human TNF travels through the bloodstream, avoiding immune detection and uptake by the reticuloendothelial system because of nanoparticle pegylation. Due to their size, the colloidal gold nanoparticles exit the circulatory system only at hyperpermeable tumor neovasculature sites; TNF then binds to and activates tumor cell TNF receptors, which may result in an increase in tumor cell apoptosis and a reduction in tumor cell proliferation. Compared to the administration of unbound TNF, colloidal gold-bound TNF may improve the efficacy and safety of TNF administration by delivering TNF specifically to tumor tissue.