
Product Data Sheet

Product Name: Aurothioglucose

Cat. No.: GC35431

Chemical Properties

Cas. No. 12192-57-3

SMILES O[C@@H]1[C@](O[Au+][SH-]2)([H])C2O[C@H](CO)[C@H]1OFormula $C_6H_{11}AuO_5S$ M.Wt 392.18

Solubility Water: 125 mg/mL (318.73 mM); DMSO: 6 mg/mL (15.30 mM) Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available sizes: ship with RT, or blue ice upon request.

Structure **Background**

Aurothioglucose is an inhibitor of thioredoxin reductase (TrxR; $IC_{50} = 0.065 \mu M$ for the human placental enzyme).¹ It is selective for TrxR over glutathione reductase and glutathione peroxidase (GPX; $IC_{50}s = >100$ and $80 \mu M$, respectively). Aurothioglucose ($100 \mu M$) inhibits IL-1 β -induced production of IL-6 and IL-8 in isolated human rheumatoid synovial fibroblasts.² It reduces HIV-1 replication induced by TNF- α in OM10.1 cells latently infected with HIV-1 when used at concentrations of 10 and 25 μM .³ Aurothioglucose (25 mg/kg) improves survival in a mouse model of acute respiratory distress syndrome (ARDS) induced by LPS and hyperoxia.⁴ It induces obesity and increases food intake and blood glucose levels in genetically diabetic KK mice.⁵ Formulations containing aurothioglucose have previously been used in the treatment of rheumatoid arthritis.

1. Gromer, S., Arscott, L.D., Williams, C.H., Jr., et al. Human placenta thioredoxin reductase. Isolation of the selenoenzyme, steady kinetics, and inhibition by therapeutic

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

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gold compounds]. *J. Biol. Chem.* 273(32):20096-20101(1998) 2. Yoshida, S., Kato, T., Sakurada, S., et al. Inhibition of IL-6 and IL-8 induction from cultured rheumatoid synovial fibroblasts by treatment with aurothioglucose. *Int. Immunol.* 11(2):151-158(1999) 3. Traber, K.E., Okamoto, H., Kurono, C., et al. Anti-rheumatic compound aurothioglucose inhibits tumor necrosis factor- α -induced HIV-1 replication in latently infected OM10.1 and Ach2 cells. *Int. Immunol.* 11(2):143-150(1999) 4. Britt, R.D., Jr., Velten, M., Locy, M.L., et al. The thioredoxin reductase-1 inhibitor aurothioglucose attenuates lung injury and improves survival in a murine model of acute respiratory distress syndrome. *Antioxid. Redox Signal.* 20(17):2681-2691(2014) 5. Matsuo, T., and Shino, A. Induction of diabetic alterations by goldthioglucose-obesity in KK, ICR and C57BL mice. *Diabetologia* 8(6):391-397(1972)

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