ranofin and monthly thereafter; licensed product information advises that auranofin should be withdrawn if the platelet count falls below 100 000 cells/mm^3 or if signs and symptoms suggestive of thrombocytopenia, leucopenia or aplastic anaemia occur. US licensed product information states that baseline renal and liver function levels should also be established before starting auranofin therapy. Auranofin should be used with caution in patients with inflammatory bowel disease.

Porphyria. Auranofin has been associated with acute attacks of porphyria and is considered unsafe in porphyric patients.

Interactions
As for Sodium Aurothiomalate, p.123.

Pharmacokinetics
Auranofin is incompletely absorbed from the gastrointestinal tract, only about 25% of the gold being absorbed. Gold from auranofin is bound to plasma proteins as well as to red blood cells. After 2 to 3 months of treatment the steady-state concentration of gold in the blood is reported to be about 0.7 micrograms/mL. The average terminal plasma half-life of gold at steady state is about 26 days while the biological half-life is 80 days. Tissue retention and total gold accumulation in the body are less than with intramuscular gold. Gold from auranofin penetrates into synovial fluid.

Most of a dose of auranofin appears in the faeces due to its poor absorption. About 60% of the absorbed gold from auranofin is excreted in the urine and the remainder in the faeces.

◊ Reviews.

1. Blocka KLN, *et al*. Clinical pharmacokinetics of oral and injectable gold compounds. *Clin Pharmacokinet* 1986; **11:** 133–43.
2. Benn HP, *et al.* Pharmacokinetics of auranofin: a single dose study in man. *J Rheumatol* 1990; **17:** 466–8.

Uses and Administration
Auranofin is a gold compound with a gold content of about 29%; it has similar actions and uses to those of sodium aurothiomalate (p.123). It is given orally in active progressive rheumatoid arthritis (below); such oral treatment is less toxic than intramuscular gold but is also much less effective. The usual initial dose of auranofin is 6 mg daily given in two divided doses at first, then, if tolerated, as a single dose. Treatment should be continued for at least 6 months to assess the response; the dose may be increased after 6 months, if the response is inadequate, to 3 mg three times daily. If the response is still inadequate after 3 months at this dosage, then treatment should be stopped.

Asthma. A systematic review[1] found that oral or parenteral gold compounds reduced corticosteroid requirements in the management of asthma (p.1108); however, it was considered that the effect was probably of limited clinical significance and, given the adverse effects and monitoring requirements of gold compounds, their use in asthma could not be recommended.

1. Evans DJ, *et al*. Gold as an oral corticosteroid sparing agent in stable asthma. Available in The Cochrane Database of Systematic Reviews; Issue 4. Chichester: John Wiley; 2000 (accessed 25/10/06).

Lupus. Since the introduction of less toxic drugs gold compounds are now rarely used in the treatment of SLE, however, there have been anecdotal reports suggesting that auranofin may still be of use in patients with discoid lupus erythematosus[1] or cutaneous lupus erythematosus[2] refractory to conventional treatment.

1. Dalziel K, *et al*. Treatment of chronic discoid lupus erythematosus with an oral gold compound (auranofin). *Br J Dermatol* 1986; **115:** 211–16.
2. Farrell AM, Bunker CB. Oral gold therapy in cutaneous lupus erythematosus (revisited). *Br J Dermatol* 1996; **135** (suppl 47): 41.

Pemphigus. A patient with long-standing pemphigus foliaceus being treated with prednisolone and hydroxychloroquine had healing of his lesions within 6 months of auranofin being substituted for the hydroxychloroquine.[1]

1. Bagheri MM, *et al*. Pemphigus foliaceus presenting as eruptive seborrheic keratosis and responding to oral gold treatment. *J Drugs Dermatol* 2002; **1:**333–4.

Psoriasis. Although topical auranofin has been shown in a placebo-controlled study[1] to be effective in the treatment of plaque-type psoriasis (p.1583) the high incidence of adverse skin reactions, such as contact dermatitis, was thought to outweigh any benefit.

1. Helm KF, *et al*. Topical auranofin ointment for the treatment of plaque psoriasis. *J Am Acad Dermatol* 1995; **33:** 517–19.

Rheumatic disorders. Gold compounds are among the disease-modifying antirheumatic drugs (DMARDs) that may be used in the treatment of rheumatoid arthritis (p.11). Oral gold is less toxic than intramuscular gold but is also much less effective. Gold compounds may also be of benefit in psoriatic arthritis (see under Spondyloarthropathies, p.13) and have been used in juvenile idiopathic arthritis (p.10).

References.

1. Suarez-Almazor ME, *et al.* Auranofin versus placebo in rheumatoid arthritis. Available in The Cochrane Database of Systematic Reviews; Issue 2. Chichester: John Wiley; 2000 (accessed 09/05/05).

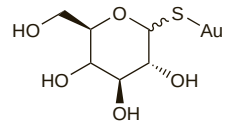
Preparations
Proprietary Preparations (details are given in Part 3)
Austral.: Ridaura; ***Austria:*** Ridaura; ***Belg.:*** Ridaura; ***Braz.:*** Ridaura†; ***Canad.:*** Ridaura†; ***Denm.:*** Ridaura†; ***Fin.:*** Ridaura; ***Fr.:*** Ridauran; ***Ger.:*** Ridaura; ***Gr.:*** Ridaura; ***Hong Kong:*** Ridaura; ***India:*** Goldar; ***Irl.:*** Ridaura; ***Israel:*** Ridaura; ***Ital.:*** Ridaura; ***Neth.:*** Ridaura; ***Norw.:*** Ridaura; ***NZ:*** Ridaura; ***Port.:*** Ridaura; ***Rus.:*** Auropan (Ауропан); ***S.Afr.:*** Ridaura; ***Spain:*** Ridaura; ***Swed.:*** Ridaura†; ***Switz.:*** Ridaura; ***UK:*** Ridaura; ***USA:*** Ridaura.

Aurothioglucose

1-Aurothio-D-glucopyranose; Aurotioglucosa; (D-Glucosylthio)-gold; Gold Thioglucose. (1-Thio-D-glucopyranosato)gold.

Ауротиоглюкоза

$C_6H_{11}AuO_5S$ = 392.2.
CAS — 12192-57-3.
ATC — M01CB04.
ATC Vet — QM01CB04.



Pharmacopoeias. In *US.*
USP 31 (Aurothioglucose). A yellow odourless or practically odourless powder. An aqueous solution is unstable on long standing. It is stabilised by the addition of a small amount of sodium acetate. pH of a 1% solution in water is about 6.3. Freely soluble in water; practically insoluble in alcohol, in acetone, in chloroform, and in ether. Store in airtight containers. Protect from light.

Adverse Effects, Treatment, and Precautions
As for Sodium Aurothiomalate, p.122.

Effects on the blood. Thrombocytopenia developed in 2 patients treated with intramuscular aurothioglucose.[1]

1. Levin M-D, *et al*. Two patients with acute thrombocytopenia following gold administration and five-year follow-up. *Neth J Med* 2003; **61:** 223–5.

Interactions
As for Sodium Aurothiomalate, p.123.

Pharmacokinetics
As for Sodium Aurothiomalate, p.123; absorption is slower and more irregular.

Uses and Administration
Aurothioglucose is a gold compound with a gold content of about 50%; it has similar actions and uses to those of sodium aurothiomalate (p.123). It is used in the treatment of active rheumatoid arthritis (p.11) and juvenile idiopathic arthritis (p.10). Aurothioglucose is given intramuscularly as a suspension in oil in an initial weekly dose of 10 mg increasing gradually to up to 50 mg weekly. Therapy is continued at weekly intervals until a total dose of 0.8 to 1 g has been given; if improvement has occurred with no signs of toxicity 50 mg may then be given at intervals of 3 to 4 weeks. Children aged 6 to 12 years have been given one-quarter the adult dose, to a maximum of 25 mg per dose.

◊ For comment on the relative efficacy and tolerability of aurothioglucose and aurothiomalate see Rheumatic Disorders, under Sodium Aurothiomalate, p.124.

Preparations
USP 31: Aurothioglucose Injectable Suspension.

Proprietary Preparations (details are given in Part 3)
Canad.: Solganal†; ***Israel:*** Solganal; ***Neth.:*** Auromyose†; ***USA:*** Solganal.

Aurotioprol

Sodium 3-aurothio-2-hydroxypropane-1-sulphonate.

Ауротиопрол

$C_3H_6AuNaO_4S_2$ = 390.2.
CAS — 27279-43-2.
ATC — M01CB05.
ATC Vet — QM01CB05.

Profile
Aurotioprol is a gold compound with a gold content of about 50%; it has similar actions and uses to those of sodium aurothiomalate (p.122). It is given by intramuscular injection for the treatment of rheumatoid arthritis (p.11). The initial dose is 25 mg weekly, increased to 50 to 100 mg weekly, until a total dose of 1.2 to 1.5 g has been given. If improvement has occurred with no signs of toxicity, this may be followed by a dose of 50 to 100 mg intramuscularly every month.

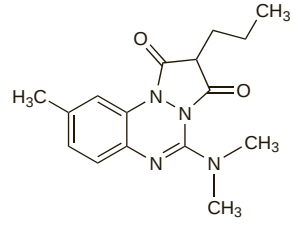
Preparations
Proprietary Preparations (details are given in Part 3)
Belg.: Allochrysine†; ***Fr.:*** Allochrysine.

Azapropazone *(BAN, rINN)*

AHR-3018; Apazone *(USAN)*; Atsapropatsoni; Azapropazon; Azapropazona; Azapropazonum; Mi85; NSC-102824. 5-Dimethylamino-9-methyl-2-propylpyrazolo[1,2-*a*][1,2,4]benzotriazine-1,3(2*H*)-dione.

Азапропазон

$C_{16}H_{20}N_4O_2$ = 300.4.
CAS — 13539-59-8.
ATC — M01AX04.
ATC Vet — QM01AX04.



Pharmacopoeias. *Br.* includes the dihydrate.
BP 2008 (Azapropazone). The dihydrate is a white to pale yellow crystalline powder. Very slightly soluble in water and in chloroform; soluble in alcohol; dissolves in solutions of alkali hydroxides.

Profile
Azapropazone is an NSAID (see p.96), structurally related to phenylbutazone (p.117). It also has uricosuric properties. Because azapropazone appears to be associated with a higher incidence of adverse effects than with some other NSAIDs, its use has been restricted to the treatment of rheumatoid arthritis, ankylosing spondylitis, and acute gout in patients for whom other NSAIDs have been ineffective.

Azapropazone is used as the dihydrate and doses are expressed in terms of this hydrated form. For the treatment of rheumatoid arthritis or ankylosing spondylitis the usual oral dose was up to 1.2 g daily in 2 divided doses. Patients *over 60 years of age* have been given 300 mg twice daily. Reduced doses were also recommended in patients with renal impairment, see below.

Administration in renal impairment. In the treatment of *rheumatoid arthritis* or *ankylosing spondylitis* in patients with reduced renal function the usual dose was reduced according to creatinine clearance (CC) as follows:

- CC 50 to 75 mL/minute: reduce usual dose (see above) by one-third to one-half
- CC less than 50 mL/minute: reduce usual dose by one-half to two-thirds

Breast feeding. Small quantities of azapropazone are excreted into breast milk.[1] However, the American Academy of Pediatrics[2] states that there have been no reports of any clinical effect on the infant associated with the use of azapropazone by breast-feeding mothers, and that therefore it may be considered to be usually compatible with breast feeding.

1. Bald R, *et al*. Excretion of azapropazone in human breast milk. *Eur J Clin Pharmacol* 1990; **39:** 271–3.
2. American Academy of Pediatrics. The transfer of drugs and other chemicals into human milk. *Pediatrics* 2001; **108:** 776–89. Correction. *ibid.*; 1029. Also available at: http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b108/3/776 (accessed 01/11/07)

Effects on the blood. Auto-immune haemolytic anaemia, occasionally fatal, often with pulmonary infiltration, allergic alveolitis, pulmonary fibrosis, or fibrosing alveolitis, has been reported in patients receiving azapropazone.[1-3]

1. Chan-Lam D, *et al*. Red cell antibodies and autoimmune haemolysis after treatment with azapropazone. *BMJ* 1986; **293:** 1474.