

Sulfadimidine (BAN, rINN)

Solfametzina; Sulfadimerazine; Sulfadimezinum; Sulfadimidini; Sulfadimidin; Sulfadimidina; Sulfadimidinas; Sulfadimidinum; Sulfamethazine; Sulphadimethylpyrimidine; Sulphadimidine; Sulphamethazine; Szulfadimidin. *N*-(4,6-Dimethylpyrimidin-2-yl)sulphanilamide.

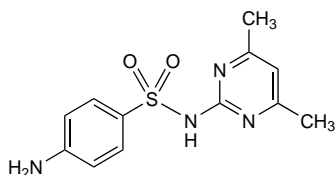
Сульфадимидин

$C_{12}H_{14}N_4O_2S = 278.3$.

CAS — 57-68-1.

ATC — J01EB03.

ATC Vet — QJ01EQ03; QP51AG01.



NOTE. Sulfadimethylpyrimidine has been used as a synonym for sulfisomidine (p.344). Care should be taken to avoid confusion between the two compounds, which are isomeric.

Pharmacopoeias. In *Eur.* (see p.vii), *Int.*, *US*, and *Viet.* Also in *BP* (*Vet*).

Ph. Eur. 6.2 (Sulfadimidine). White or almost white powder or crystals. Very slightly soluble in water; slightly soluble in alcohol; soluble in acetone. It dissolves in solutions of alkali hydroxides and in dilute mineral acids. Protect from light.

USP 31 (Sulfamethazine). White to yellowish-white, practically odourless, powder. It may darken on exposure to light. Very slightly soluble in water and in ether; slightly soluble in alcohol; soluble in acetone. Protect from light.

Sulfadimidine Sodium (BANM, rINNM)

Natrii Sulfadimidinum; Soluble Sulphadimidine; Sulfadimidina sodica; Sulfadimidine Sodique; Sulfamethazine Sodium; Sulphadimidine Sodium.

Натрий Сульфадимидин

$C_{12}H_{13}N_4NaO_2S = 300.3$.

CAS — 1981-58-4.

ATC — J01EB03.

Pharmacopoeias. In *Int.*

Profile

Sulfadimidine is a short-acting sulfonamide with properties similar to those of sulfamethoxazole (p.340).

It is well absorbed from the gastrointestinal tract and is about 80 to 90% bound to plasma proteins. Reported half-lives have ranged from 1.5 to 4 hours in fast and 5.5 to 8.8 hours in slow acetylators. Because of the relatively high solubility of the drug and its acetyl metabolite, crystalluria may be less likely than with sulfamethoxazole.

In the treatment of susceptible infections, sulfadimidine has been given orally in an initial dose of 2 g, followed by 0.5 to 1.0 g every 6 to 8 hours. It has also been given parenterally as the sodium salt.

Sulfadimidine has also been used with other sulfonamides, particularly sulfamerazine and sulfadiazine. It is also used in veterinary medicine, sometimes with baquilloprim or trimethoprim.

Because its pharmacokinetics differ in fast and slow acetylators, sulfadimidine has been used to determine acetylator status.

Preparations

USP 31: Trisulphapyrimidines Oral Suspension; Trisulphapyrimidines Tablets.

Proprietary Preparations (details are given in Part 3)

Hung.: Septosyl.

Multi-ingredient: **Hung.:** Potesept; **Indon.:** Trisulfa; **Thai.:** Sulfatril.

Sulfadoxine (BAN, USAN, rINN)

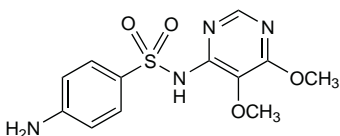
Ro-4-4393; Sulfadoksiini; Sulfadoksinas; Sulfadoxin; Sulfadoxina; Sulfadoxinum; Sulfomethoxine; Sulforthomidine; Sulphormethoxine; Sulphorthodimethoxine; Szulfadoxin. *N*-(5,6-Dimethylpyrimidin-4-yl)sulphanilamide.

Сульфадоксин

$C_{12}H_{14}N_4O_2S = 310.3$.

CAS — 2447-57-6.

ATC Vet — QJ01EQ13.



Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Int.*, *US*, and *Viet.*

Ph. Eur. 6.2 (Sulfadoxine). White or yellowish-white crystalline powder or crystals. Very slightly soluble in water; slightly soluble in alcohol and in methyl alcohol. It dissolves in solutions of alkali hydroxides and in dilute mineral acids. Protect from light.

USP 31 (Sulfadoxine). Protect from light.

Adverse Effects, Treatment, and Precautions

As for Sulfamethoxazole, p.340. For reference to the adverse effects of a combination of sulfadoxine and pyrimethamine, see Pyrimethamine, p.610.

If adverse effects occur, sulfadoxine has the disadvantage that several days are required for elimination from the body.

Interactions

As for Sulfamethoxazole, p.341.

Antimicrobial Action

As for Sulfamethoxazole, p.341. Synergy exists between sulfadoxine and pyrimethamine, which act against folate metabolism at different points of the metabolic cycle.

Resistance to the combination of sulfadoxine and pyrimethamine in plasmodia, first noted in Thailand in the late 1970s, has become widespread in many malarious areas of the world. For further details of resistance to antimalarial drugs, see p.594.

Pharmacokinetics

Sulfadoxine is readily absorbed from the gastrointestinal tract. High concentrations in the blood are reached in about 4 hours; the half-life in the blood is about 4 to 9 days. About 90 to 95% is reported to be bound to plasma proteins.

Sulfadoxine is widely distributed to body tissues and fluids; it passes into the fetal circulation and has been detected in low concentrations in breast milk. Sulfadoxine is excreted very slowly in urine, primarily unchanged.

Uses and Administration

Sulfadoxine is a long-acting sulfonamide that has been used in the treatment of various infections but is now rarely used alone.

It is given as a fixed-dose combination of 20 parts sulfadoxine with 1 part pyrimethamine (*Fansidar, Roche*) in the treatment of falciparum malaria resistant to other therapies (p.594), usually after a course of quinine. Although the combination has been used in the prophylaxis of malaria, the risk of toxicity is now generally considered to outweigh its value.

In the treatment of malaria, the usual oral dose is 1.5 g of sulfadoxine with 75 mg of pyrimethamine as a single dose; this should not be repeated for at least 7 days. Oral doses for children are: 5 to 10 kg body-weight, 250 mg sulfadoxine with 12.5 mg pyrimethamine; 11 to 20 kg, 500 mg sulfadoxine with 25 mg pyrimethamine; 21 to 30 kg, 750 mg sulfadoxine with 37.5 mg pyrimethamine; 31 to 45 kg, 1 g sulfadoxine with 50 mg pyrimethamine.

Sulfadoxine with pyrimethamine has also been given intramuscularly.

Sulfadoxine with pyrimethamine has also been tried in the treatment of actinomycetomas (see Mycetoma p.180), and for prophylaxis of pneumocystis pneumonia in immunocompromised patients (see p.521 for the more usual prophylactic regimens).

A mixture of 5 parts of sulfadoxine with 1 part trimethoprim is used in veterinary medicine.

Preparations

USP 31: Sulfadoxine and Pyrimethamine Tablets.

Proprietary Preparations (details are given in Part 3)

Malaysia: Fansidar.

Multi-ingredient: **Austral.:** Fansidar; **Belg.:** Malastop; **Braz.:** Fansidar; **Canada.:** Fansidar; **Denm.:** Fansidar; **Fr.:** Fansidar; **India:** Artermal; Laridox; Pyralin; Rimodar; **Indon.:** Fansidar; Suldox; **Ir.:** Fansidar; **Israel:** Fansidar; **Malaysia:** Madomine; **Philipp.:** Fansidar; **S.Afr.:** Fansidar; **Singapore:** Madomine; **Switz.:** Fansidar; Fansimeff; **Thai.:** Vivaxine; **UK:** Fansidar; **USA:** Fansidar.

Sulfafurazole (BAN, pINN)

Sulfafuratsoli; Sulfafurazol; Sulfafurazolas; Sulfafurazolium; Sulfisoxazole; Sülfizoksazol; Sulphafuraz; Sulphafurazole; Szulfafurazol. *N*-(3,4-Dimethylisoxazol-5-yl)sulphanilamide.

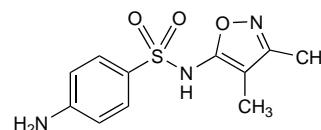
Сульфазуразол

$C_{11}H_{13}N_3O_3S = 267.3$.

CAS — 127-69-5.

ATC — J01EB05; S01AB02.

ATC Vet — QJ01EQ05; QS01AB02.



Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Jpn.*, and *US*.

Ph. Eur. 6.2 (Sulfafurazole). White or yellowish-white, crystalline powder or crystals. Practically insoluble in water; sparingly soluble in alcohol; slightly soluble in dichloromethane. It dissolves in solutions of alkali hydroxides and in dilute mineral acids. Protect from light.

USP 31 (Sulfisoxazole). A white to slightly yellowish, odourless crystalline powder. Soluble 1 in 7700 of water and 1 in 10 of boiling alcohol; soluble in 3N hydrochloric acid. Store in airtight containers. Protect from light.

Acetyl Sulfafurazole

Acetilsulfafurazol; Acetyl Sulphafurazole; Sulfisoxazole Acetyl. *N*-(Acetyl Sulphafurazole; *N*-(3,4-Dimethylisoxazol-5-yl)-*N*-sulphanilylacetylamine.

$C_{13}H_{15}N_3O_4S = 309.3$.

CAS — 80-74-0.

ATC — J01EB05; S01AB02.

ATC Vet — QS01AB02.

NOTE. Acetyl sulfafurazole is to be distinguished from the *N*⁴-acetyl derivative formed from sulfafurazole by conjugation in the body.

Compounded preparations of acetyl sulfafurazole may be represented by the following name:

- Co-erynsulfisox (*PEN*)—acetyl sulfafurazole and erythromycin ethyl succinate.

Pharmacopoeias. In *US*.

USP 31 (Sulfisoxazole Acetyl). A white or slightly yellow crystalline powder. Practically insoluble in water; soluble 1 in 176 of alcohol, 1 in 35 of chloroform, 1 in 1064 of ether, and 1 in 203 of methyl alcohol. Store in airtight containers. Protect from light.

Sulfafurazole Diolamine (pINNM)

NU-445; Sulfafurazol diolamina; Sulfafurazol, Diolamine de; Sulfafurazol Diolaminum; Sülfizoksazol Diethanolamin; Sulfisoxazole Diolamine (*USAN*); Sulphafurazole Diethanolamine; Sulphafurazole Diolamine. The 2,2'-iminobisethanol salt of sulphafurazole.

Сульфазуразола Диоламин

$C_{11}H_{13}N_3O_3S \cdot C_4H_{11}NO_2 = 372.4$.

CAS — 4299-60-9.

ATC — J01EB05; S01AB02.

ATC Vet — QS01AB02.

Adverse Effects, Treatment, and Precautions

As for Sulfamethoxazole, p.340.

Sulfafurazole and its acetyl derivative are relatively soluble in urine and the risk of crystalluria is generally slight, but nevertheless adequate fluid intake is recommended.

Breast feeding. A study¹ in 6 women who received sulfafurazole concluded that the amount of drug secreted into breast milk poses no risk to the healthy infant beyond the immediate newborn period, but potential risk in breast-fed infants with jaundice or G6PD deficiency, or who are ill, stressed, or premature, was more difficult to evaluate. Based on this evidence, the American Academy of Pediatrics² has stated that sulfafurazole is usually