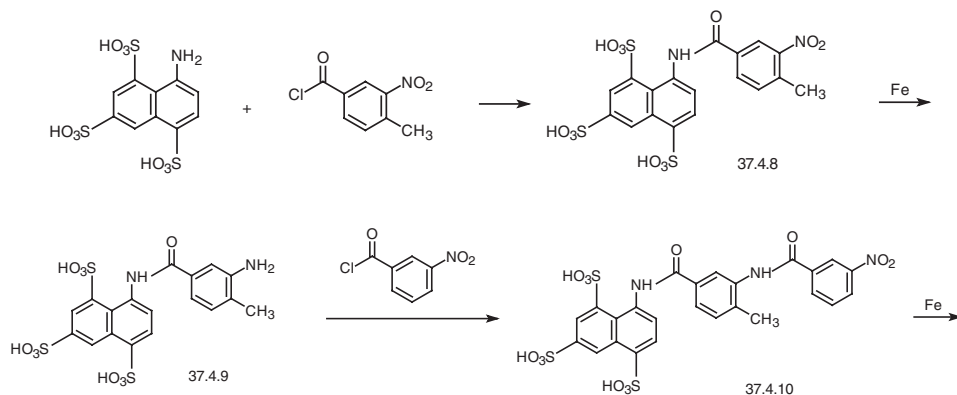
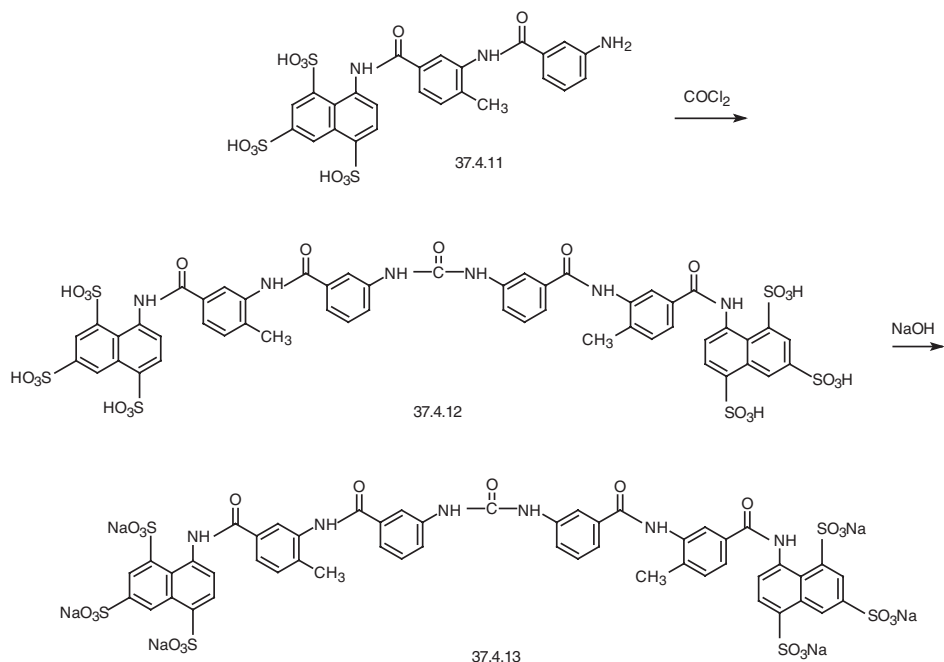


Nifurtimox is the drug of choice for acute forms of the South American form of trypanosomiasis (Chagas disease). It is believed that the drug acts by forming a reactive radical (superoxide, hydroperoxide, hydroxyl) in the parasite, which leads to a loss of catalysis and glutathione peroxidase, and an increase in sensitivity to hydrogen peroxide, which alters its normal vital activities. Synonyms of this drug are lampit and others.

Suramin: Suramin, a hexasodium salt of [8,8' carbonyl-*bis*-[imino-3,1-phenylencarbonylimino(4-methyl-3,1-phenyl)carbonylimino]]-*bis*-1,3,5-naphthalinetrisulfonic acid (37.4.13), can be made by reacting 1-aminonaphthalene-3,6,8-trisulfonic acid with 4-methyl-3-nitrobenzoyl chloride to make a nitrobenzoic derivative (37.4.8). The nitro group in this compound is reduced by activated iron to an amino derivative (37.4.9), which is acylated by *m*-nitrobenzoylchloride to make a new nitroderivative, *m*-nitrobenzoyl-(4-methyl-3-aminobenzoyl)-1-aminonaphthalene-3,6,8-trisulfonic acid (37.4.10). This is once again reduced to the amine (37.4.11) in the same manner. Reacting the resulting product with phosgene makes [8,8'-carbonyl-*bis*-[imino-3,1-phenylencarbonylimino(4-methyl-3,1-phenyl)-carbonylimino]-*bis*-1,3,5-naphthalenetrisulfonic acid (37.4.12), which upon being treated with sodium hydroxide gives suramin [60–63].





Suramin is a very old drug that was made in the 1920s, while researching toxins and dyes (Trypan Red and Blue, Afridol Purple) as drugs with trypanosocidal activity. The exact mechanism of action of this drug is not known. However, it is believed that suramin is absorbed in trypanosomes, where it is possible that it reversibly binds with proteins. Currently, it is rarely used for treating early forms of sleeping sickness. Synonyms of this drug are antipol, natrimin, germanin, and others.

37.5 DRUGS FOR TREATING OTHER PROTOZOAN INFECTIONS

Lambliosis, which is treated with quinacrine, is also considered a protozoan infection. In some cases, metronidazole and furazolidone are used for lambliosis. Metronidazole and tinidazole are used for treating trypchomonadiasis, another communicable protozoan infection. Sulfanilamides and chloridin are used for treating toxoplasmosis.

REFERENCES

1. H. Andersag, S. Breitner, H. Jung, U.S. Pat. 2.233.970 (1941).
2. H. Andersag, S. Breitner, H. Jung, Ger. Pat. 683.692 (1937).
3. N.L. Drake, H.J. Creech, J.A. Garman, S.T. Haywood, R.M. Peck, J.O. Van Hook, E. Walton, J. Am. Chem. Soc., 68, 1214 (1946).
4. Ch.C. Price, R.M. Roberts, J. Am. Chem. Soc., 68, 1204 (1946).