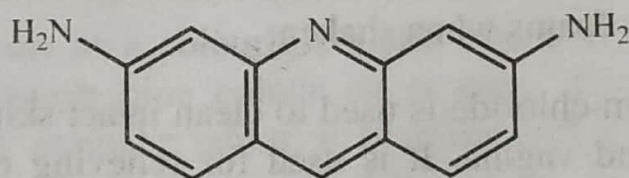


2.1.3.1. Proflavine

Proflavine is an acriflavine derivative having bacteriostatic action against many gram-positive bacteria.

Chemical Structure



Proflavine

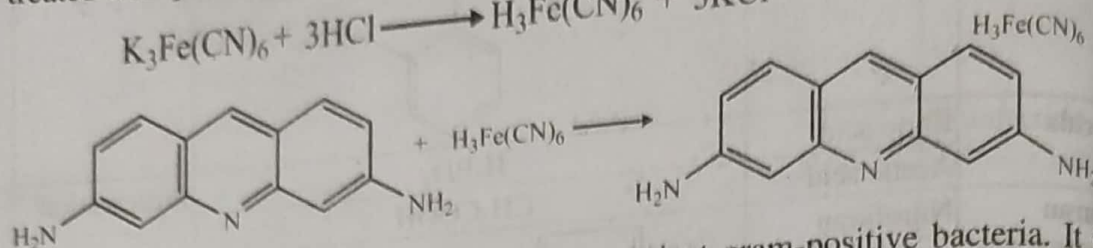
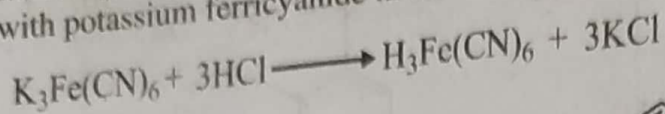
Molecular Formula: C₁₃H₁₁N₃

IUPAC Nomenclature: Acridine-3,6-diamine

Chemistry: Proflavine belongs to the acridine class of organic compounds. They comprise of an acridine moiety and a linear tricyclic heterocycle containing two benzene rings attached with a pyridine ring.

Physical Properties: Proflavine occurs as orange-red to brown-red crystalline powder. It is soluble in water and ethanol; and practically insoluble in benzene and ether.

Chemical Properties: Proflavine precipitate as its ferricyanide salt on being treated with potassium ferricyanide in a mildly acidic medium.



Uses: Proflavine is used as a bacteriostatic against gram-positive bacteria. It is used for treating local infection of mouth, throat, and ear. It is effective in the treatment of infected wounds, burns, and skin infections.

Stability and Storage Conditions: Proflavine is hygroscopic and sensitive to light, thus is stored in tightly-closed light-resistant containers.

Types of Pharmaceutical Formulations: Proflavine cream.

Brand Names: Isoflav Base, Pro-Gen, Proflavin, Profoliol, Profoliol-B, Proformiphen, Profundol, Profura, Progarmed, and Progesic.

2.1.3.2. Benzalkonium Chloride

Benzalkonium chloride is found in household cleaning products and is used as a surfactant and antibacterial agent.

Molecular Formula: $\text{C}_6\text{H}_5\text{CH}_2\text{N}(\text{CH}_3)_2\text{RCl}$

IUPAC Nomenclature: Benzyl-dimethyl-tridecyl-azanium chloride

Chemistry: Benzalkonium chloride comprises of alkyl benzyl dimethyl ammonium chloride. It contains 8-18 carbon atoms, i.e., $\text{R} = -\text{C}_8\text{H}_{15}$ to $-\text{C}_{18}\text{H}_{37}$

Properties: Benzalkonium chloride occurs as a white to pale yellow gel with aromatic odour and bitter taste. It is miscible with water. Its aqueous solution is alkaline and creates foams when shaken.

Uses: Benzalkonium chloride is used to clean intact skin. It is used for irrigating bladder, urethra, and vagina. It is used for relieving pain due to infections of mouth and throat. It is added as a preservative in eye-drops.

Stability and Storage Conditions: Benzalkonium chloride decomposes by alkali hydroxides. It also gets affected by light, thus is stored in tightly-closed light-resistant containers.

Types of Pharmaceutical Formulations: Solutions and lozenges.

Brand Names: Merthiolate, Neosporin Wound Cleanser, and CureChrome.

2.1.3.3. Cetrimide

Cetrimide is topically used for cleaning wounds and for treating certain skin disorders as it is an antiseptic and disinfectant.

Molecular Formula: $C_{17}H_{39}BrN^+$

IUPAC Nomenclature: Trimethyl(tetradecyl)azanium

Chemistry: Chemically, cetrimide is cetyl trimethyl ammonium bromide, and contains dodecyl and hexadecyl trimethyl ammonium bromide in smaller proportions.

Properties: Cetrimide occurs as a white or creamy white powder having a faint and characteristic odour. It is freely soluble in water; soluble in alcohol; and insoluble in ether.

Uses: Cetrimide is used for treating burns and wounds. It is used for removing scabs. It is also used for disinfecting utensils, vessels, etc. It is used as a preservative. It is used as an emulsifying agent to make o/w creams.

Stability and Storage Conditions: Cetrimide shows incompatibility with strong oxidising agents. It also gets affected by sunlight and moisture, thus is stored in well-closed containers.

Types of Pharmaceutical Formulations: Cream, emulsifying ointment, emulsifying wax, and solution.

Brand Names: Savlon, Dentakind Gum Astringent, Dermogard, Septol, Scabine, and Savolin.

2.1.3.4. Phenol

Phenol is an organic compound which contains a hydroxyl group ($-OH$) attached with a carbon atom that is a part of an aromatic ring.

Molecular Formula: C_6H_5OH

IUPAC Nomenclature: Phenol

Properties: Phenol occurs as a colourless liquid which is soluble in water and alcohol. It attains a pinkish blue colour on storage. It is caustic and has a characteristic or slightly aromatic odour. It is miscible in glycerin, and forms a clear solution when 15 parts of water is added to 1 part of it.

Uses: Phenol acts as a bactericidal and germicidal. It is used for dressing small wounds. Due to its anaesthetic property, phenol is used for relieving itching. It is used in dentistry as an analgesic. It is used in mouth ulcers and tonsillitis as an antiseptic and analgesic. It is used for treating boils in ears.

Stability and Storage Conditions: Phenol crystals deposit on storing phenol below $4^\circ C$ temperature. It is stored in tightly-closed light-resistant containers.

Types of Pharmaceutical Formulations: Gel, cream, lotions, lozenges, paste, ointment, injection (intradermal, percutaneous, and subcutaneous), powder, and spray.

Brand Names: Chloraseptic Sore Throat Spray, Cepastat, Castellani Paint, and Ungentine Original Formula.