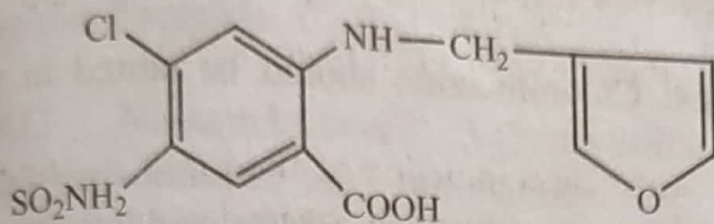


19.1.3.1. Furosemide

Furosemide is a benzoic-sulfonamide-furan with fast onset and short duration of action. It is used for treating oedema and chronic renal insufficiency.

Chemical Structure



Furosemide

Molecular Formula: C₁₂H₁₀ClN₂O₅S

IUPAC
sulfamoylbenzoic acid

Nomenclature:

4-chloro-2-(furan-2-ylmethylamino)-5-

Properties: Furosemide occurs as a white to slight yellow crystalline powder with almost no odour and taste. It is slightly soluble in water, chloroform, and ether; soluble in acetone, methanol, and DMF; and less soluble in ethanol.

Uses: Furosemide is used for the treatment of oedema related to congestive heart failure, liver cirrhosis, and renal disease. It is also used either alone or with other antihypertensive agents for the management of hypertension.

Stability and Storage Conditions: Furosemide should be stored at 15-30°C temperature and protected from light. Yellow coloured **furosemide injections** should not be used. **Furosemide tablets** on exposure to light lose their colour, and these discolored tablets should be discarded.

Types of Pharmaceutical Formulations: Tablet, injection, and solution.

Brand Names: Diucontin-k, Fursimide, and Lasix.

19.1.3.2. Chlorothiazide

Chlorothiazide is a short-acting, benzothiadiazine sulfonamide derivative and prototypical thiazide diuretic. It gets excreted via kidneys in unchanged form.

Molecular Formula: C₇H₆ClN₃O₄S₂

IUPAC Nomenclature: 6-chloro-1,1-dioxo-4H-1 λ ⁶,2,4-benzothiadiazine-7-sulfonamide

Properties: Chlorothiazide occurs as white coloured crystalline powder with no odour. It is soluble in water, dimethyl formamide, and dimethyl sulphoxide; slightly soluble in methanol and pyridine; and insoluble in ether, benzene, and chloroform.

Uses: Chlorothiazide is used as an adjunct in oedema related to congestive heart failure, hepatic cirrhosis, and corticosteroid and estrogen therapy. It is also used in the management of hypertension either alone or in combination with other antihypertensive drugs in the more severe forms of hypertension.

Stability and Storage Conditions: Chlorothiazide should be stored in well-closed containers away from light.

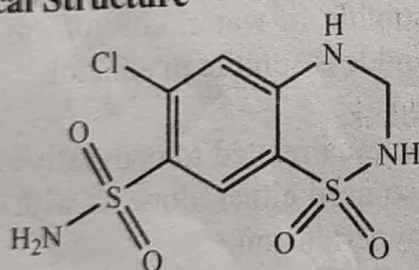
Types of Pharmaceutical Formulations: Suspensions, tablets, and injections.

Brand Names: Diuril, Diuril sodium, Aldoclor, and Diupres.

19.1.3.3. Hydrochlorothiazide

Hydrochlorothiazide is a thiazide diuretic, which reduces the reabsorption of electrolytes from the renal tubules. This increases the excretion of water and electrolytes, including sodium, potassium, chloride, and magnesium.

Chemical Structure



Hydrochlorothiazide

Molecular Formula: C₇H₈ClN₃O₄S₂

IUPAC Nomenclature: 6-chloro-1,1-dioxo-3,4-dihydro-2H-1 λ ⁶,2,4-benzothiadiazine-7-sulfonamide

Properties: Hydrochlorothiazide occurs as white crystalline powder with no odour and slightly bitter taste. It is soluble in dilute ammonia, sodium hydroxide, methanol, ethanol, and acetone.

Uses: Hydrochlorothiazide reduces sodium and water retention in preeclampsia during pregnancy. It is also used for the management of hypertension, and as an adjunct in oedema related to congestive heart failure, hepatic cirrhosis, and corticosteroid and estrogen therapy.

Stability and Storage Conditions: Hydrochlorothiazide should be stored in well-closed containers at temperature less than 40°C (preferably at 15-30°C). Its oral solution should not be frozen.

Types of Pharmaceutical Formulations: Tablets and capsules.

Brand Names: Aquazide, Hydride, Bpzide, Klorzide, and Xenia.