

**PHB**



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**Course Name : D. Pharm**  
**Year : First Year**  
**Subject Name : Pharmaceutical Chemistry**  
**Topic Name : Antipsychotics**

Antipsychotics, also known as **neuroleptics**, are a class of psychotropic medication primarily used to manage psychosis, principally in schizophrenia but also in a range of other psychotic disorders.

### Chemical Classification of antipsychotic drugs:

#### A. Phenothiazines:

1. **Aliphatic side chain:** Chlorpromazine Hydrochloride
2. **Piperidine side chain:** Thioridazine
3. **Piperazine side chain:** Trifluoperazine, fluphenazine

#### B. Butyrophenones:

Haloperidol, Trifluoperidol

#### C. Rauwolfia Alkaloids:

Reserpine

#### D. Benzamide Derivative:

Sulpiride

#### E. Thioxanthenes:

Flupenthixol

#### F. Atypical antipsychotics:

Quetiapine, Clozapine, Olanzapine, Lurasidone, Risperidone,

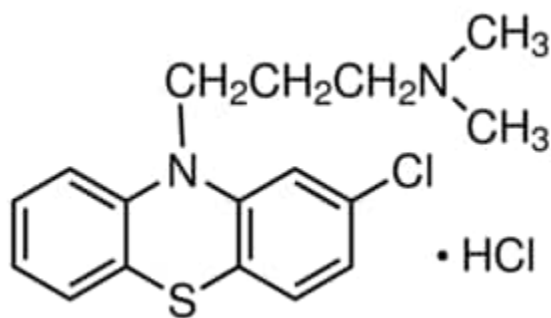
#### G. Other heterocyclics:

Pimozide, Loxapine

### Drug Mechanism of action:

S. No.	Drug	Mechanism
1.	Chlorpromazine Hydrochloride	combined blockade of histamine H1, dopamine D2, and muscarinic M1 receptors in the vomiting center.
2.	Haloperidol	block postsynaptic dopamine (D2) receptors in the mesolimbic system of the brain.
3.	Sulpiride	acts selectively as a dopamine receptor antagonist in the brain,
4.	Quetiapine	acting on various neurotransmitter receptors, such as the serotonin and dopamine receptors.
5.	Risperidone	Serotonin and norepinephrine reuptake inhibition
6.	Olanzapine	exerts its action primarily on dopamine and serotonin receptors.
7.	Lurasidone	a full antagonist at dopamine D2 and serotonin 5-HT <sub>2A</sub> and 5-HT <sub>7</sub> receptors.

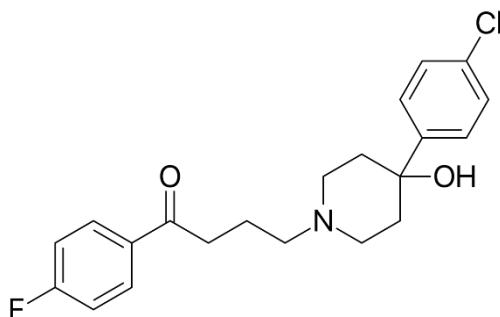
## Chlorpromazine



3-(2-chloro-10H-phenothiazin-10-yl)-N, N-dimethylpropan-1-amine

- ❖ Chlorpromazine is a psychiatric medication that belongs to the class of drugs called phenothiazine antipsychotics.
- ❖ It works by helping to restore the balance of certain natural substances in the brain.
- ❖ Chlorpromazine is also used to control nausea/vomiting, relieve prolonged hiccups, relieve restlessness/anxiety before surgery, and help treat tetanus.

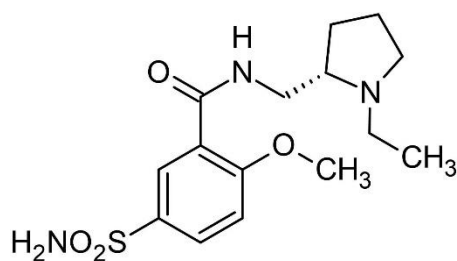
## Haloperidol



4-[4-(4-Chlorophenyl) – 4 – hydroxy -1-piperidiny]-1-(4-fluorophenyl)-1-butanone

- ❖ Haloperidol is an antipsychotic medicine that is used to treat schizophrenia.
- ❖ Haloperidol is also used to control motor and speech tics in people with Tourette's syndrome.

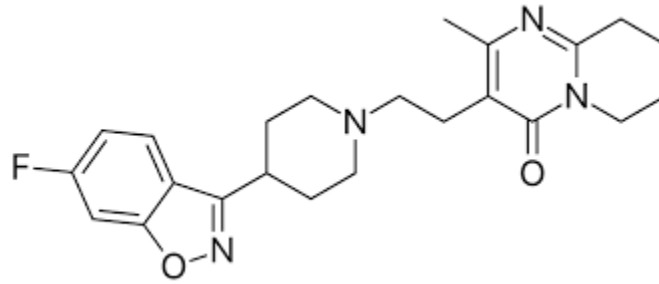
## Sulpiride



N-[(1-ethylpyrrolidin-2-yl) methyl]-2-methoxy-5-sulfamoylbenzamide

- ❖ Sulpiride is a member of the class of benzamides obtained from formal condensation between the carboxy group of 2-methoxy-5-sulfamoylbenzoic acid and the primary amino group of (1-ethylpyrrolidin-2-yl) methylamine.
- ❖ It has a role as an antidepressant, an antiemetic, an antipsychotic agent and a dopaminergic antagonist.

## Risperidone



3-[2-[4-(6-fluoro-1,2-benzoxazol-3-yl)piperidin-1-yl]ethyl]-2-methyl-6,7,8,9-tetrahydropyrido[1,2-a]pyrimidin-4-one

- ❖ Risperidone is a second-generation antipsychotic medication used to treat a number of mental health disorders including schizophrenia, bipolar mania, psychosis, or as an adjunct in severe depression.
- ❖ Risperidone is thought to reduce this overactivity through inhibition of dopaminergic D2 receptors and serotonergic 5-HT<sub>2A</sub> receptors in the brain.