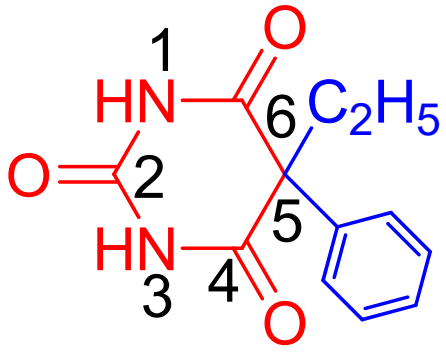
Phenobarbital



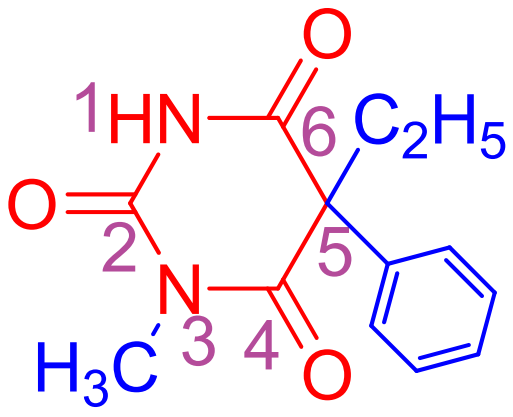
MOA

- It acts as a nonselective central nervous system depressant. Phenobarbital acts on GABA A receptors-chloride channel complex
- It potentiate the GABA ergic inhibition by increasing the life time of chloride ion channel opening induced by GABA.
- It has the effect on elevating seizure threshold and reduce the the spread of seizure activity from a seizure focus.
- Phenobarbital may also inhibit calcium channels, resulting in a decrease in excitatory transmitter release.

Uses

For the treatment of all types of epilepsy except absence seizures.

Mephenobarbital

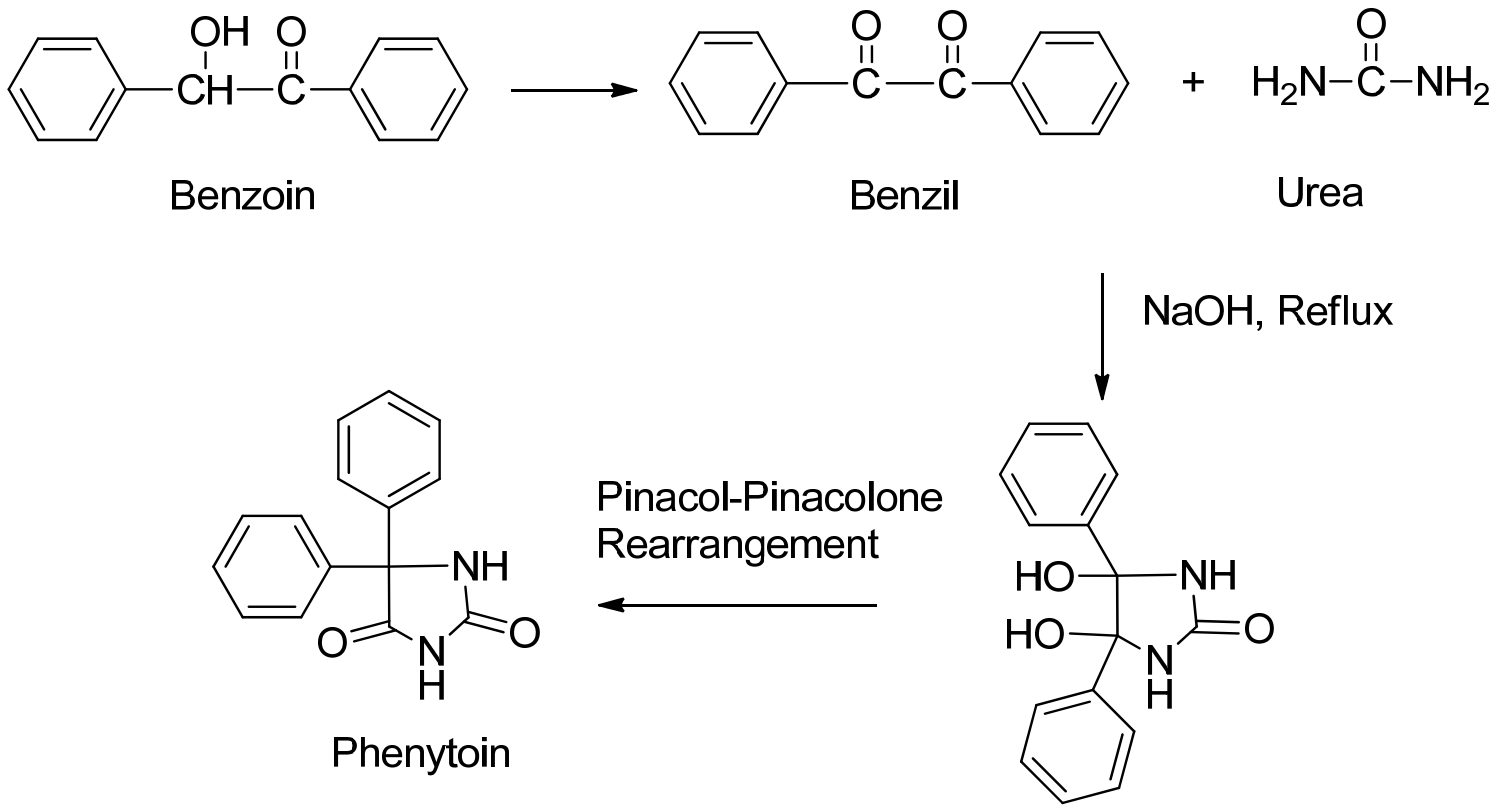


MOA: Similar to phenobarbital

Uses

For the relief of anxiety, tension, and apprehension, also used as an anticonvulsant for the treatment of epilepsy.

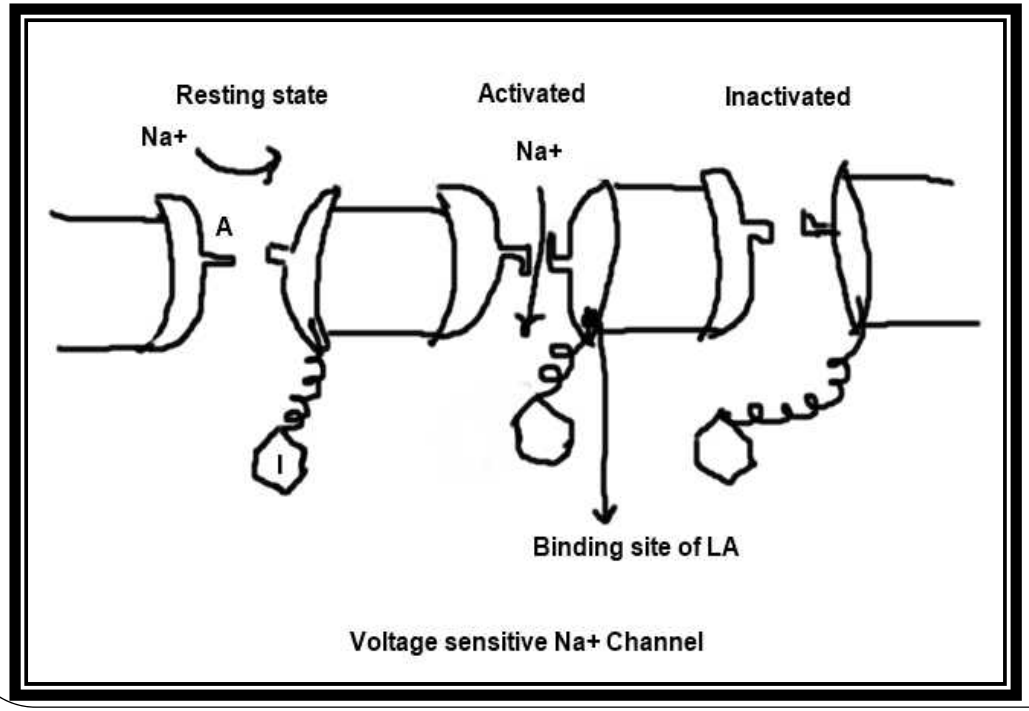
Phenytoin


OH
O
CH
C
Benzoin
O
O
C
C
Benzil
+
O
H2N
C
NH2
Urea
NaOH, Reflux
HO
NH
HO
O
N
H
Pinacol-Pinacolone
Rearrangement
NH
O
O
N
H
Phenytoin

Mechanism of action

✓ Phenytoin prolong the inactivated state of voltage sensitive neuronal Na^+ Channel.

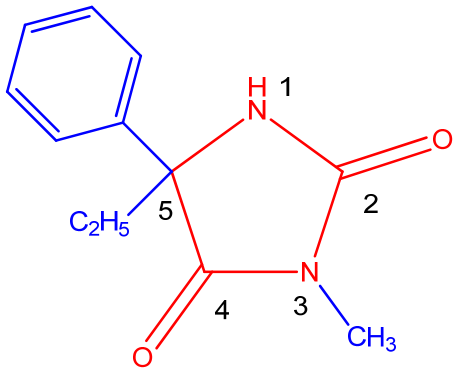
✓ It binds with the inactivated state of Na^+ Channe and inhibit high frequency action potential with little effect on low frequency action potential.



Voltage sensitive Na+ Channel

Uses-It is used to treat tonic-clonic and complex partial seizures in people with epilepsy.

Mephenytoin

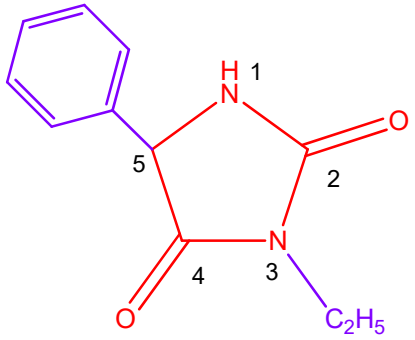


Mephenytoin

MOA: Similar to Phenytoin

Uses: Mephenytoin is usually reserved for seizure conditions that have not responded to other less toxic antiseizure medicines.

Ethotoin



Ethotoin

MOA: Similar to Phenytoin

Uses: It is an anticonvulsant drug used in the treatment of epilepsy.