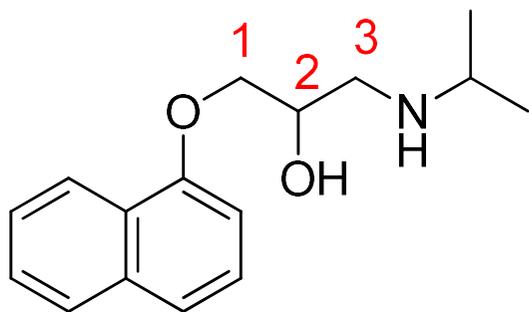# Propranolol

MOA- Propranolol is a non-selective β antagonist.
It competes with nor-epinephrine for binding to β_1 adrenergic receptor present in the heart.
This results in decrease in sympathetic stimulation of heart. Blockage of β_1 receptor reduces heart rate and arterial blood pressure.
Uses- It is used in the treatment of hypertension, angina pectoris, myocardial infraction and anxiety.
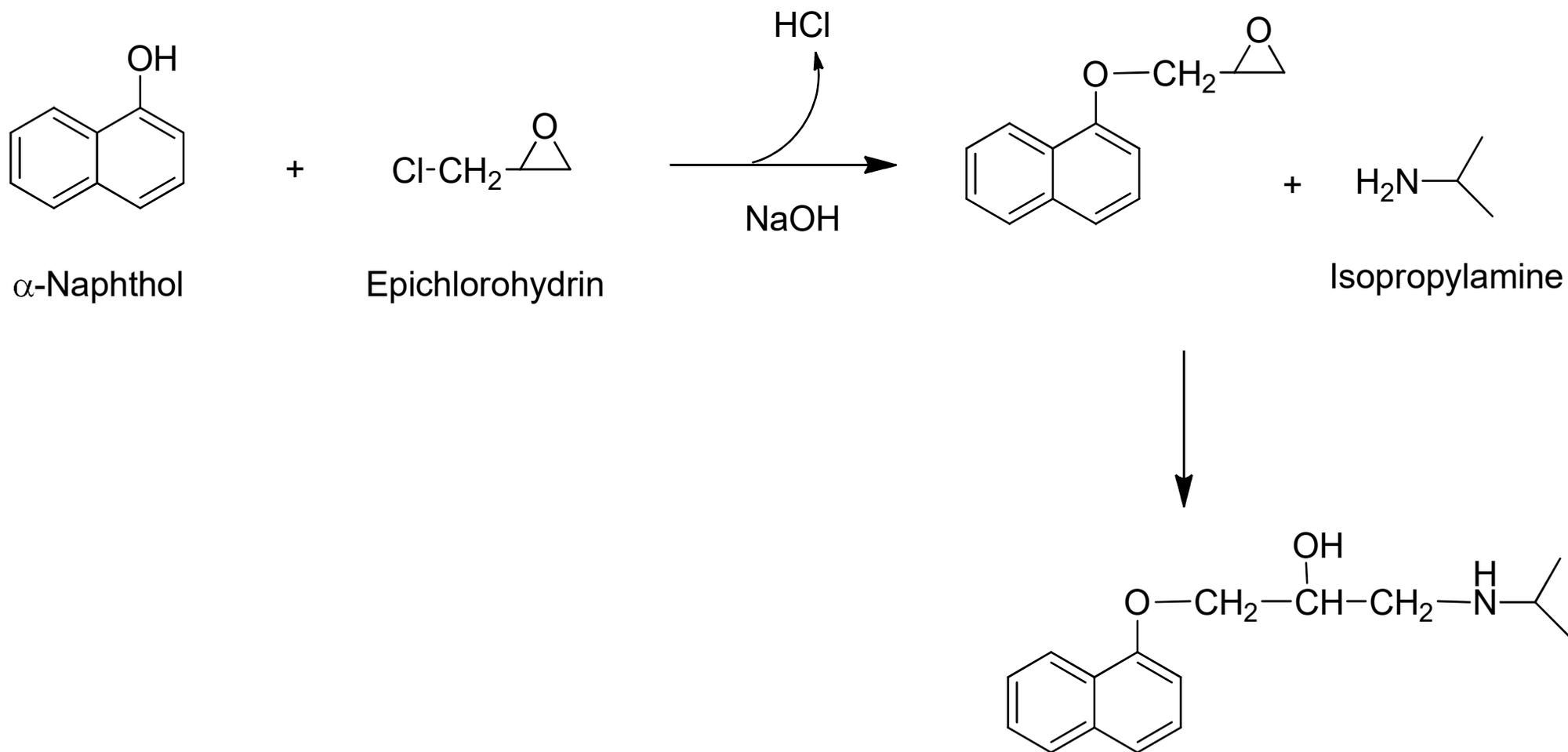
Metipranolol
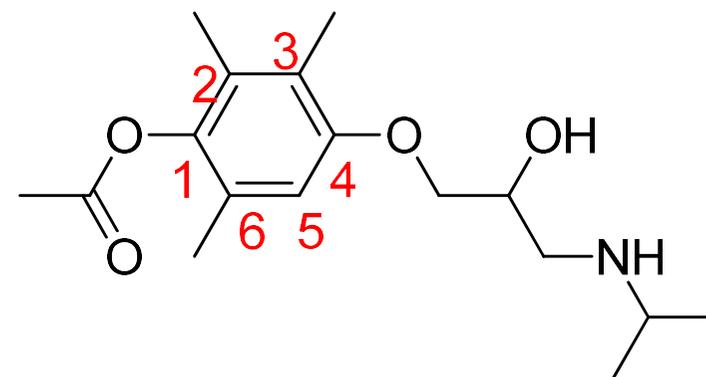
MOA- it is a β1 and β2 receptor antagonist.
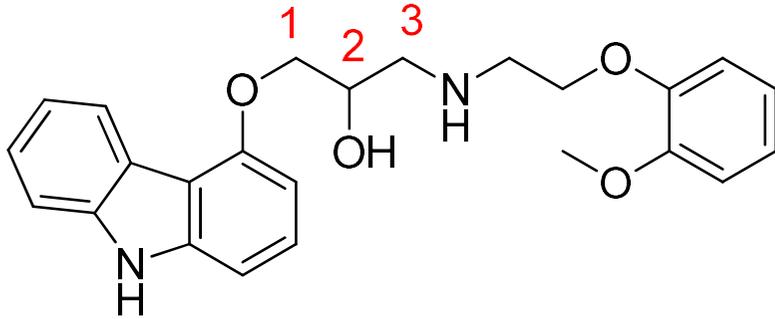It possess myocardial depressant activity and mild anesthetic activity.
It also blocks ophthalmic β receptor and reduce formation of aqueous humor.
Uses- it is used in the treatment of arrythmia, hypertension and glaucoma.

Synthesis of Propranolol

α-Naphthol + Epichlorohydrin →(NaOH, –HCl)→ naphthyl glycidyl ether + Isopropylamine → Propranolol
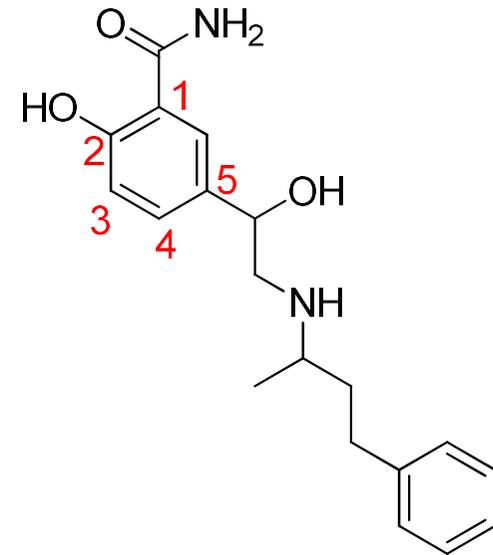
Carvedilol

MOA-It is a non-selective β receptor antagonist. It also blocks α1 adrenergic receptor.

By blocking β1 receptor it decreases heart rate, contractility and cardiac output.

By blocking α 1 receptor it decreases peripheral vascular resistance, hence causes vasodilation of blood vessel and decrease in blood pressure.
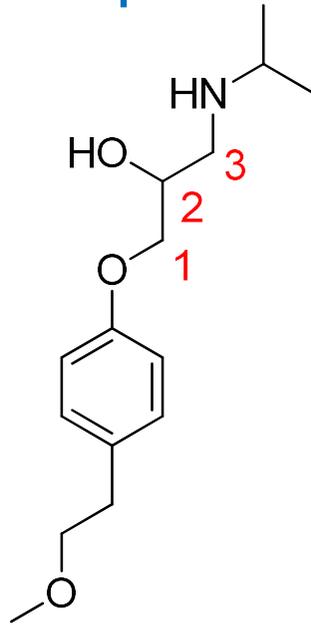
Uses- Used for high blood pressure

Labetolol

MOA- Similar to carvedilol
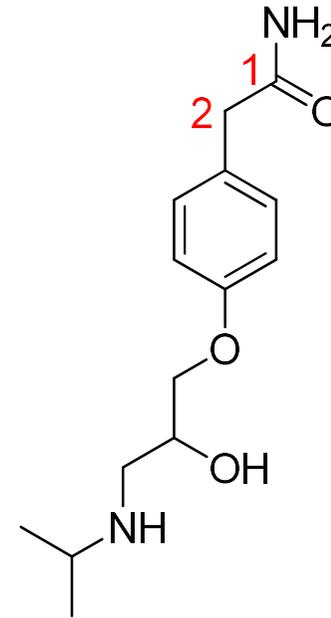
Uses- Similar to carvedilol

Metoprolol

Atenolol

MOA- It is a selective antagonist of β1 adrenergic receptor. It antagonize the action of norepinephrine and leads to decrease in heart rate, cardiac output and blood pressure

Uses- It is used to treat high blood pressure.

It is also used to treat angina pectoris
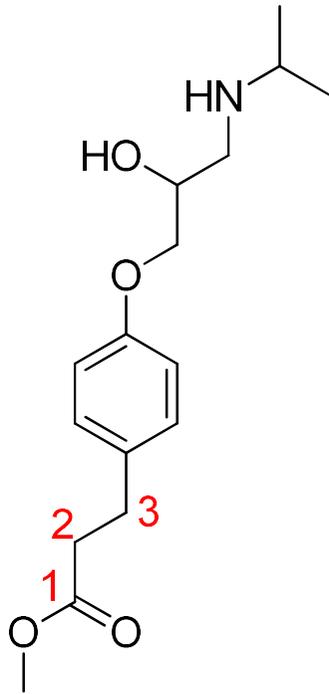
It is useful in heart attack and heart stroke

MOA- Similar to metoprolol

Uses- Similar to metoprolol

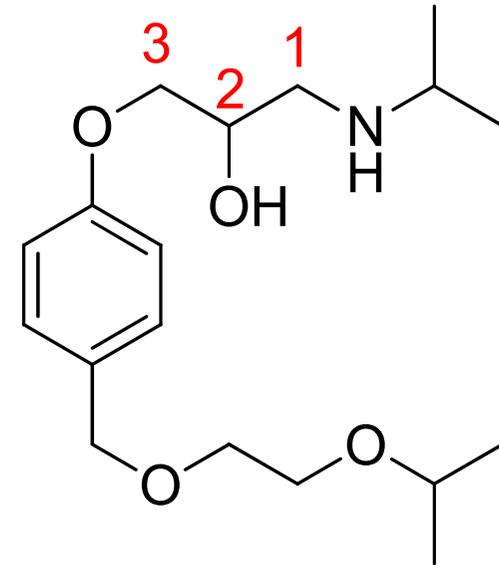# Esmolol
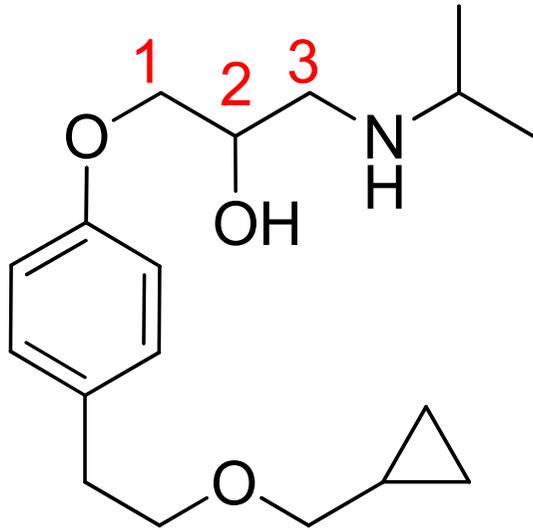

MOA- Similar to metoprolol
Uses- Similar to metoprolol

Bisoprolol

MOA- Similar to metoprolol
Uses- Similar to metoprolol

Betaxolol

MOA- Similar to metoprolol
Uses- Similar to metoprolol