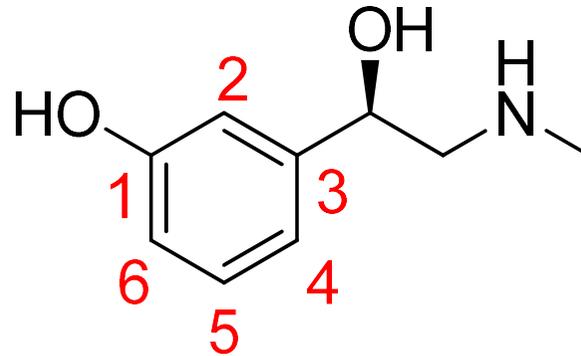


# Phenylephrine



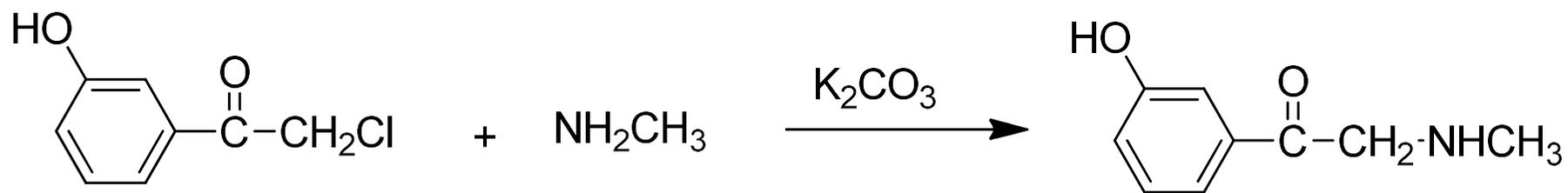
## MOA

Phenylephrine is a sympathomimetic drug having pharmacological similarities to norepinephrine. Phenylephrine selectively binds to alpha-1 receptors and causes constriction of blood vessels. Although phenylephrine increases the contractibility of blood vessels, in practical terms it is not considered a cardiostimulant.

## Uses

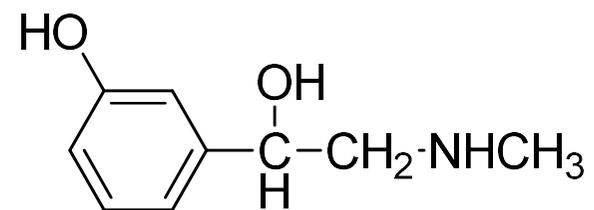
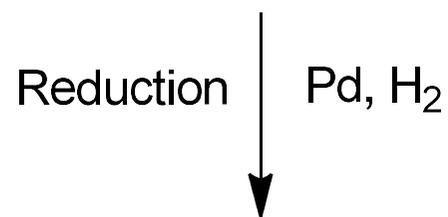
Phenylephrine is a medication primarily used as a decongestant, to dilate the pupil, to increase blood pressure, and to relieve hemorrhoids.

Phenylephrine is used in hypotension, and shock. It is also used locally, particularly in the form of nasal spray, for relieving edema.

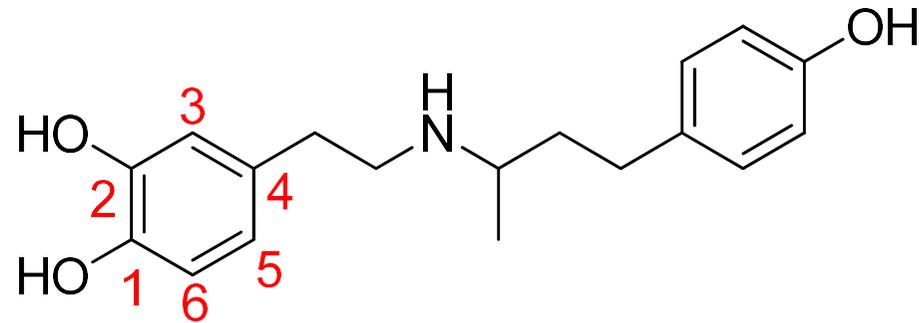


$\alpha$ -Chloro-3-hydroxy  
acetophenone

Methylamine



# Dobutamine



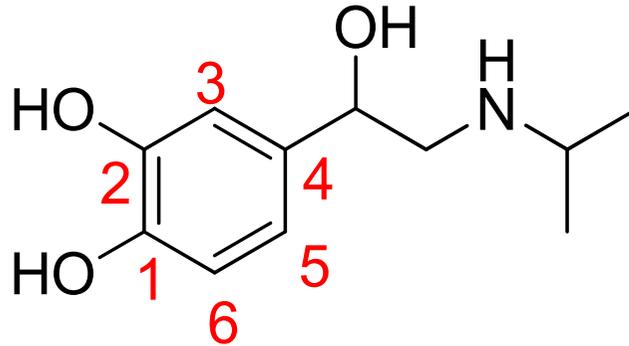
## MOA

Dobutamine acts primarily on beta-1 adrenergic receptors, with negligible effects on beta-2 or alpha receptors. Dobutamine directly stimulates beta-1 receptors of the heart to increase myocardial contractility and resulting in increased cardiac output.

## Uses

Dobutamine is a medication used in the treatment of cardiogenic shock and severe heart failure. It may also be used in certain types of cardiac stress tests.

# Isoproterenol / Isoprenaline

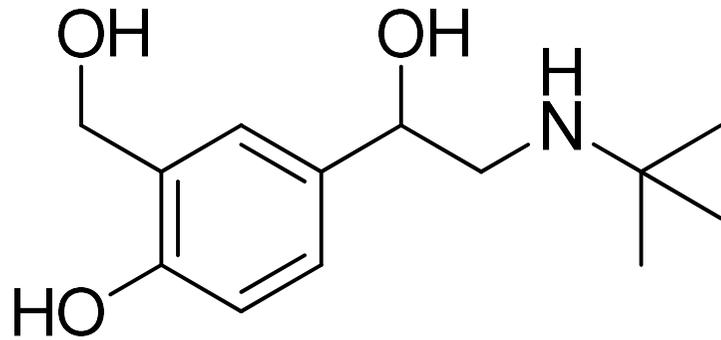


## MOA

Isoproterenol is a beta-1 and beta-2 adrenergic receptor agonist resulting in the Increased heart rate, Increased heart contractility, Relaxation of bronchial, gastrointestinal, and uterine smooth muscle.

**Uses** It is used for the treatment of bradycardia (slow heart rate). Heart block and rarely for asthma.

## Salbutamol



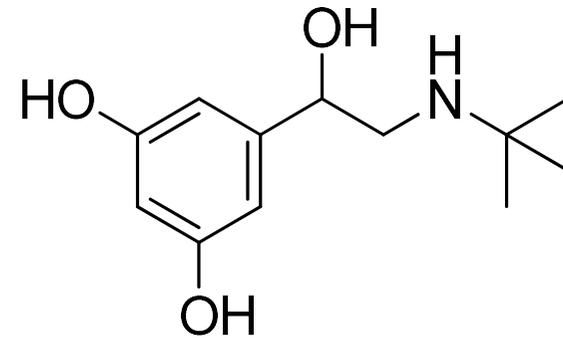
### MOA

Salbutamol is a short-acting, selective beta 2-adrenergic receptor agonist used in the treatment of asthma and COPD. It is more selective for beta 2 receptors than beta 1 receptors giving it higher specificity for pulmonary beta receptors versus beta 1-adrenergic receptors located in the heart.

### Uses

Used in the treatment of asthma and COPD (chronic obstructive pulmonary disease)

## Terbutaline



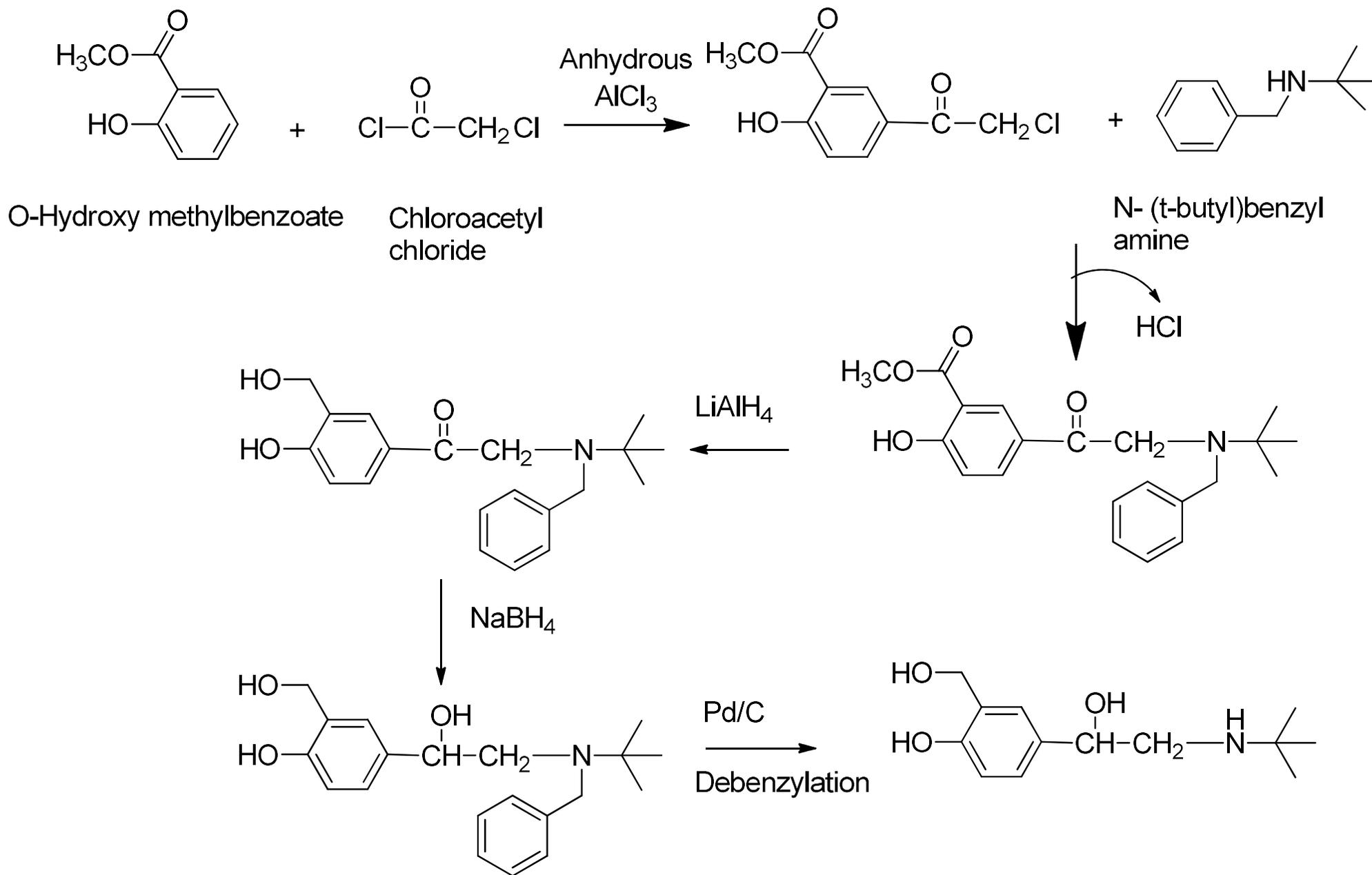
### MOA

Similar to salbutamol

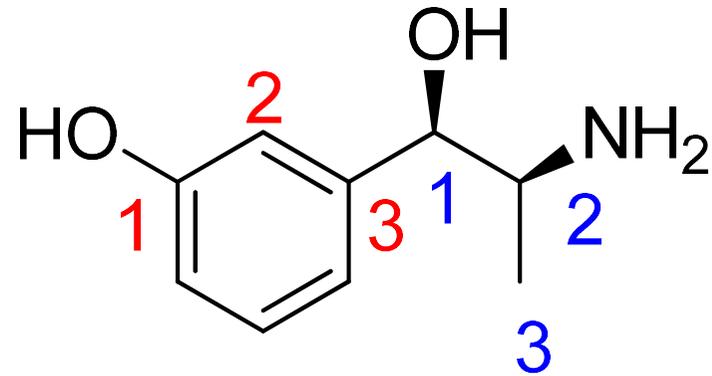
### Uses

Similar to salbutamol

## Synthesis of salbutamol



# Metaraminol



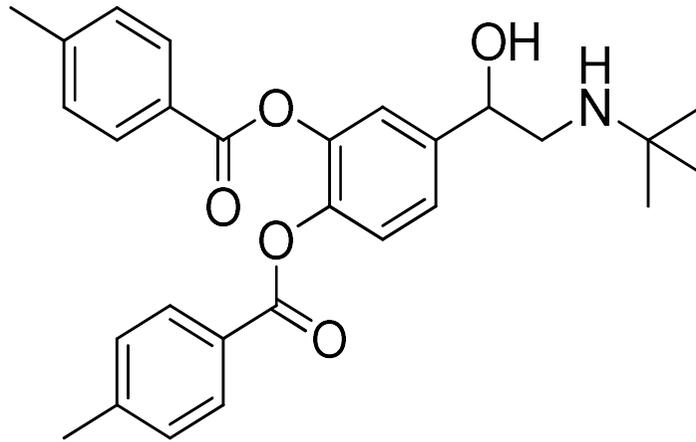
## MOA

Metaraminol is a selective  $\alpha_1$  adrenergic receptor agonist. It binds with peripheral  $\alpha_1$  adrenergic receptor and results in peripheral vasoconstriction, that leads to increase in blood pressure.

## Uses

Metaraminol is used for the prevention and treatment of acute hypotensive state.

# Bitolterol



## MOA

Bitolterol is a prodrug of colterol. Bitolterol is a short-acting  $\beta_2$  adrenergic receptor agonist. It causes relaxation of smooth muscle found principally in bronchi.

## Uses

used in the treatment of asthma and COPD (chronic obstructive pulmonary disease).