

E148

# EXPECTORANTS MUCOKINETIC DRUGS

K105

D142

They are used orally.

Systemic effective.

**\*They are drugs that reduce the viscosity of the sputum (mucus) that accumulates in the respiratory tract, by removing its stickiness and facilitating its expulsion with the help of cough reflex.**

**\*Patients should drink plenty of water or watery drinks.**

**\* The best expectorant is 'Water'.**

# Mechanisms of Action

- 1. Indirect Effective**
- 2. Direct Effective**
- 3. Mixed Effective**

# 1. INDIRECT EFFECTIVE EXPECTORANTS

- **Reflexive pathways increase the secretion from the mucous membranes of the respiratory tract.**
- **They irritate the stomach mucosa.**

## **2. DIRECT EFFECTIVE EXPECTORANTS**

**They are secreted into the lumen by mucosa glands in the lungs.**

**In this way, the secretion of water increases and allows the sputum to become aqueous and fluid.**

### **3. MIXED EFFECTIVE EXPECTORANTS**

**Indirect and direct effect are seen together.**

# 1-SEDATIVE EXPECTORANTS

## Salt Expectorants:

They increase the secretion of the bronchial mucosa glands with reflex and / or direct effects by irritating the gastric mucosa.

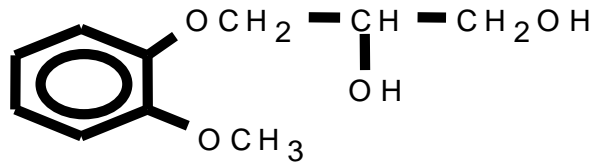
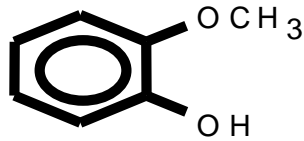


Ammonium acetate

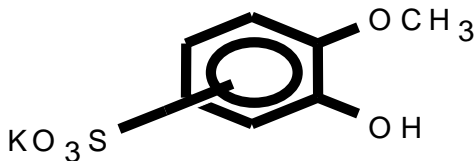
Sodium benzoate

Sodium Citrate

# 2-STIMULANT EXPECTORANTS



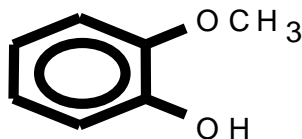
Glyceryl guaiacolate = GUAIFENESIN



Guaiacol potassium sulphonate = TIOKOL



- 1) 70-80 °C sulphonation
- 2) K<sup>+</sup> salt preparation



Increase gastric secretion.

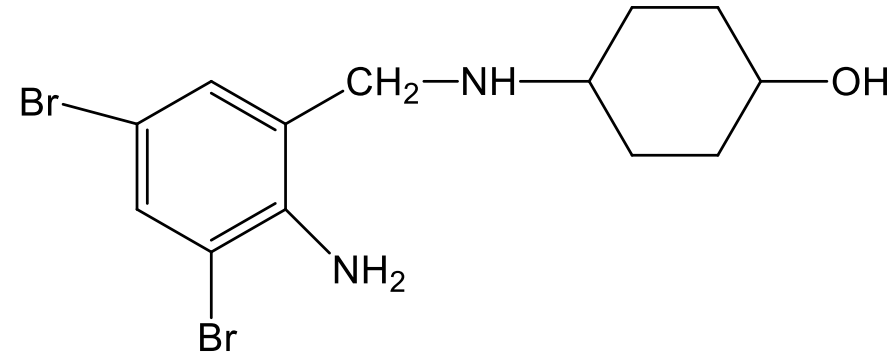
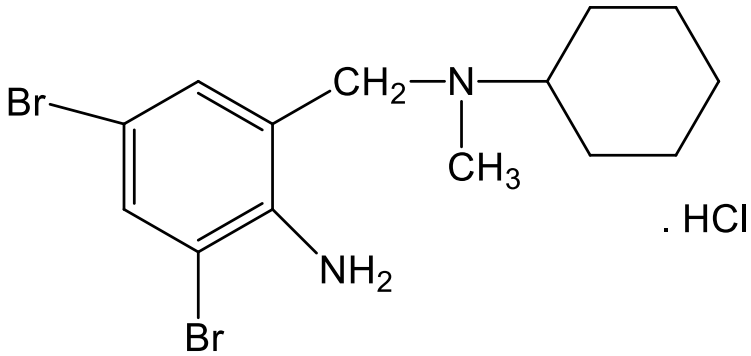
They are partially absorbed and eliminated by the pulmonary route.

With direct stimulating effect, they increase secretion in the respiratory tract.

Toxic and GIS irritant effect decreases.



# Bromhexine (BISOLVON) Ambroxol (MUKORAL)



It is similar to the Vazisin obtained from *Adhatoda vasica* grown in India.

Strong expectorant.

Increases bronchial secretion and reduces viscosity.

GIK disrupts the mucus.—> Ulcer formation.

It is the active main metabolite of bromhexine.

It is used in the treatment of respiratory diseases with excessive mucus secretion. It reduces the density and adhesion of the secretions collected in the respiratory tract.

# Synthesis of Bromhexine

