



Unit 5

Expectorants, Emetics, Haematinics, Poison and Antidote



ANALYSIS



ACCURACY



QUALITY



RELIABILITY



ERRORS



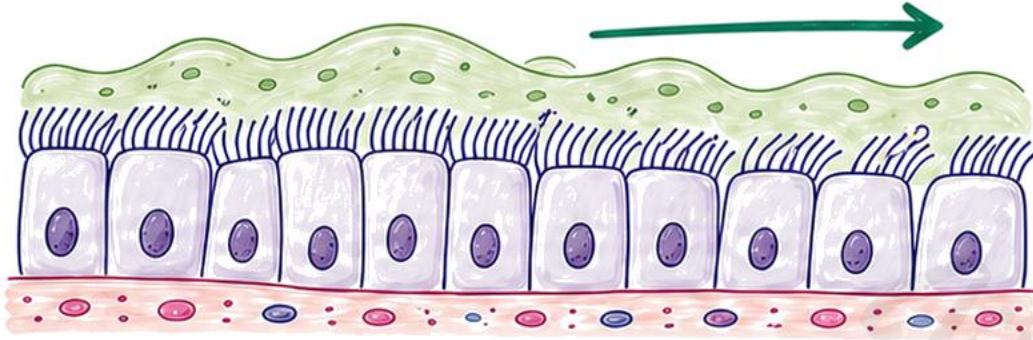
PRECISION



IMPURITIES

EXPECTORANTS & COUGH

Expectorant: helps mobilize bronchial secretions so sputum is easier to expel.
Useful mainly in a productive cough; hydration also helps mucus clearance.



TEACHING CLASSIFICATION

Secretolytic / reflex action:
gastric irritation may increase respiratory secretions — ammonium chloride, citrate salts (historical/simple inorganic examples).

Mucus-hydrating / mucolytic action:
guaifenesin increases secretion hydration; bromhexine reduces mucus viscosity.

COUGH BY DURATION

- Acute: <3 weeks
- Subacute: 3–8 weeks
- Chronic: >8 weeks

Also describe it as productive or dry.
Nocturnal cough may suggest asthma, upper-airway cough syndrome, or reflux.

Pertussis causes paroxysmal coughing and is especially dangerous in infants.

POTASSIUM IODIDE — KI

PREPARATION (HOT CONCENTRATED ALKALI)



PROPERTIES

- White crystalline ionic solid; freely soluble in water.
- Melting point about 681°C.
- Light, air, and moisture promote oxidation; yellow colour indicates liberated iodine.

USES

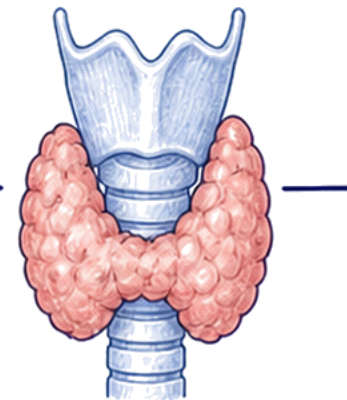
- Iodide source in deficiency states, under clinical guidance.
- Expectorant in some preparations.
- Thyroid blockade in a radiation emergency.

SAFETY PEARL

KI blocks thyroid uptake of radioactive iodine only. It does not protect the whole body or against other radionuclides; take it only when public-health authorities advise.

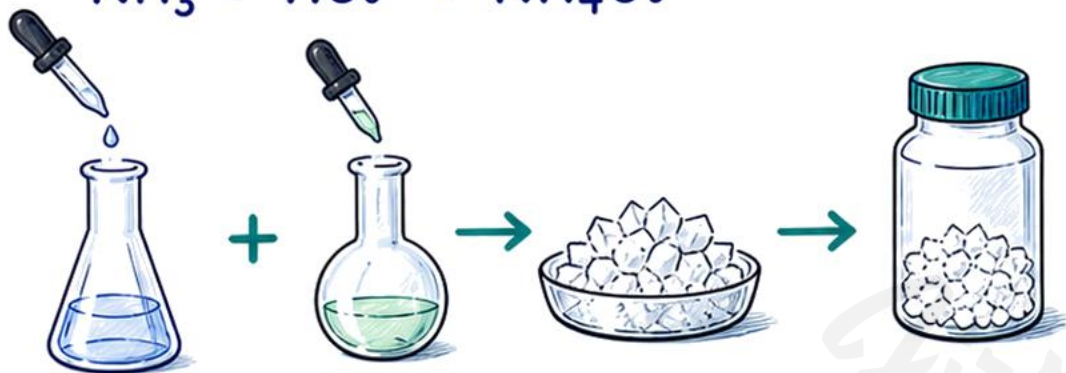
STORAGE

- Well-closed, protected from light and moisture; avoid oxidants.



AMMONIUM CHLORIDE – NH₄Cl

PREPARATION



PROPERTIES

- White, odourless crystalline salt; freely soluble in water.
- Dissolution is endothermic, producing a cooling saline sensation.
- Aqueous solution is acidic because NH₄⁺ hydrolyses.
- Sublimes/dissociates near 338°C; do not describe this as ordinary melting.

PHARMACEUTICAL ROLES



Saline expectorant in older/simple formulations.



Systemic or urinary acidifier only under medical supervision.



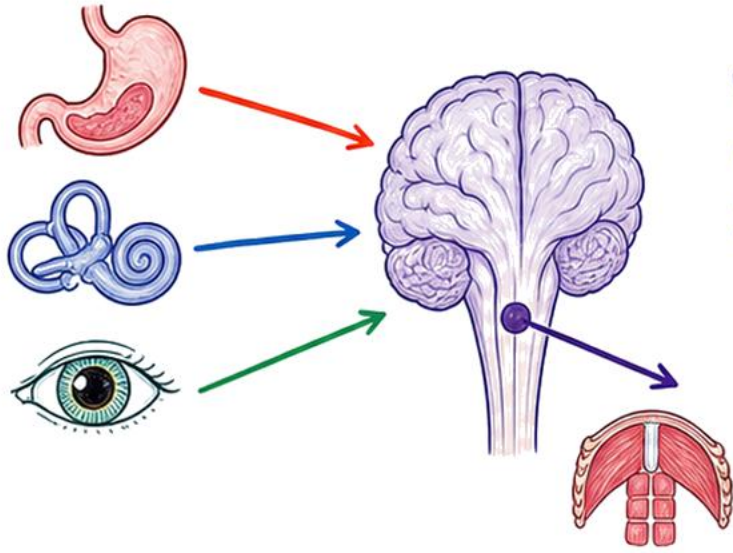
Reagent and component of ammonia/ammonium buffer systems.

STORAGE

Well-closed container in a dry place;
avoid strong bases, which release ammonia:



EMETICS — HISTORICAL CONCEPT, MODERN CAUTION



Vomiting is coordinated by the medullary vomiting network.

Inputs arise from:

- gastrointestinal vagal afferents,
- vestibular and higher centres,
- the area postrema / chemoreceptor trigger zone.



Do not induce vomiting routinely after poisoning. Syrup of ipecac is no longer recommended.

Never induce emesis after corrosives or high-aspiration-risk hydrocarbons, or in a drowsy, convulsing, or airway-unprotected patient.

HISTORICAL AGENTS



Ipecac: gastric irritation plus central action.



Apomorphine: dopamine-receptor agonist acting centrally.



Copper sulfate: obsolete as an emetic because it is toxic.



EMERGENCY RESPONSE

Protect airway/breathing/circulation, remove ongoing exposure, and call emergency services or a poison centre immediately.

Do not induce vomiting unless a poison specialist explicitly directs it.



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