SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai
Approved by Pharmacy Council of India, New Delhi.
Coimbatore -641035

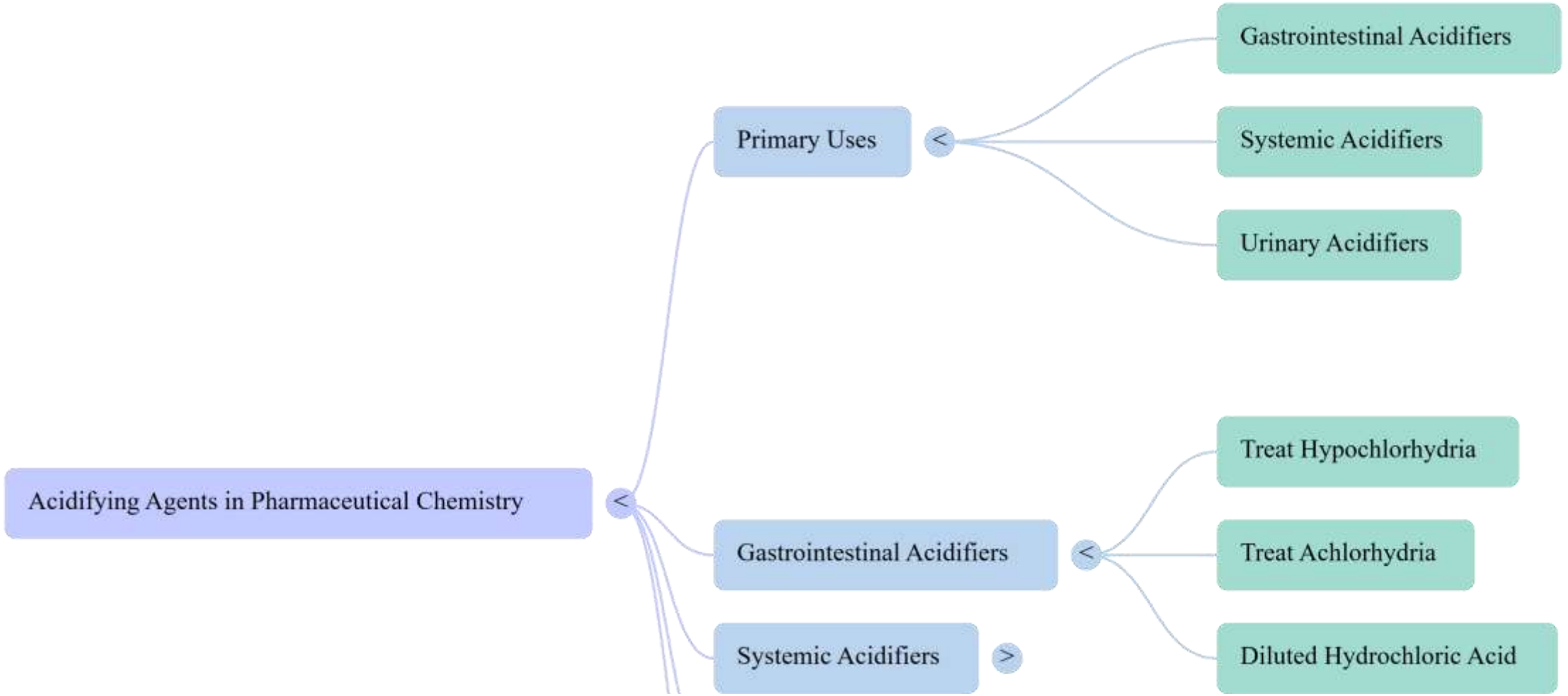
COURSE NAME: PHARMACEUTICAL CHEMISTRY

I YEAR D PHARM

TOPIC 16 :[GASTRO- INTESTINAL AGENT]

ACIDIFYING AGENTS

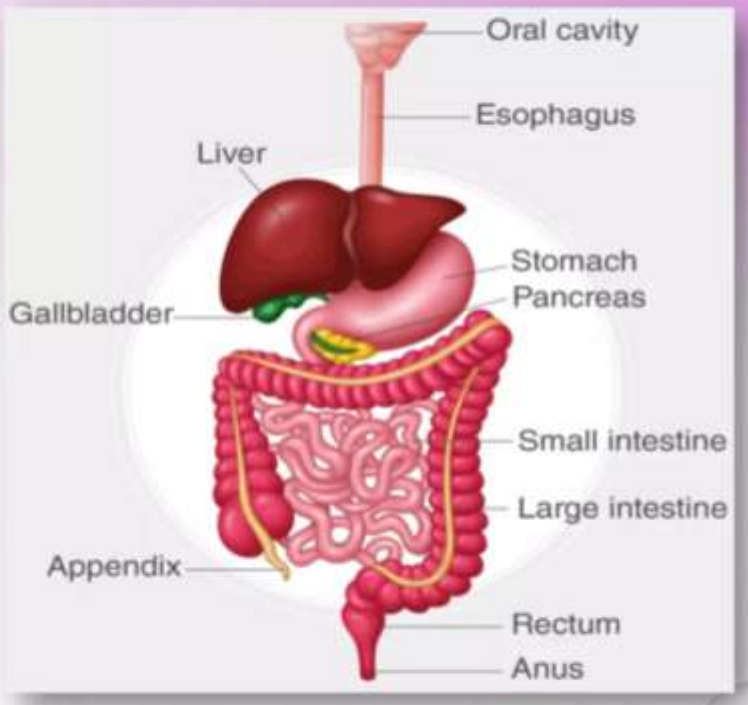
Mind Map


Acidifying Agents in Pharmaceutical Chemistry
Primary Uses
Gastrointestinal Acidifiers
Systemic Acidifiers
Urinary Acidifiers
Gastrointestinal Acidifiers
Treat Hypochlorhydria
Treat Achlorhydria
Diluted Hydrochloric Acid
Systemic Acidifiers

Gastrointestinal Agents or GIT tract

- One of the **Vital organ** Present in the body.
- Responsible for;
  1. **Consuming** and **digesting foodstuffs**,
  2. **Absorbing nutrients** and **expelling waste.**
- Effected by **Enzymatic breakdown** of complex food molecules into;

  → **Monosaccharides, Amino acids and glycerides.**
- **Dysfunction** of any one of the GIT system → **Human illness**
- The tract consists of the **stomach and intestines**, and is divided into the **upper and lower Gastrointestinal tracts.**



Classify Gastrointestinal agents:

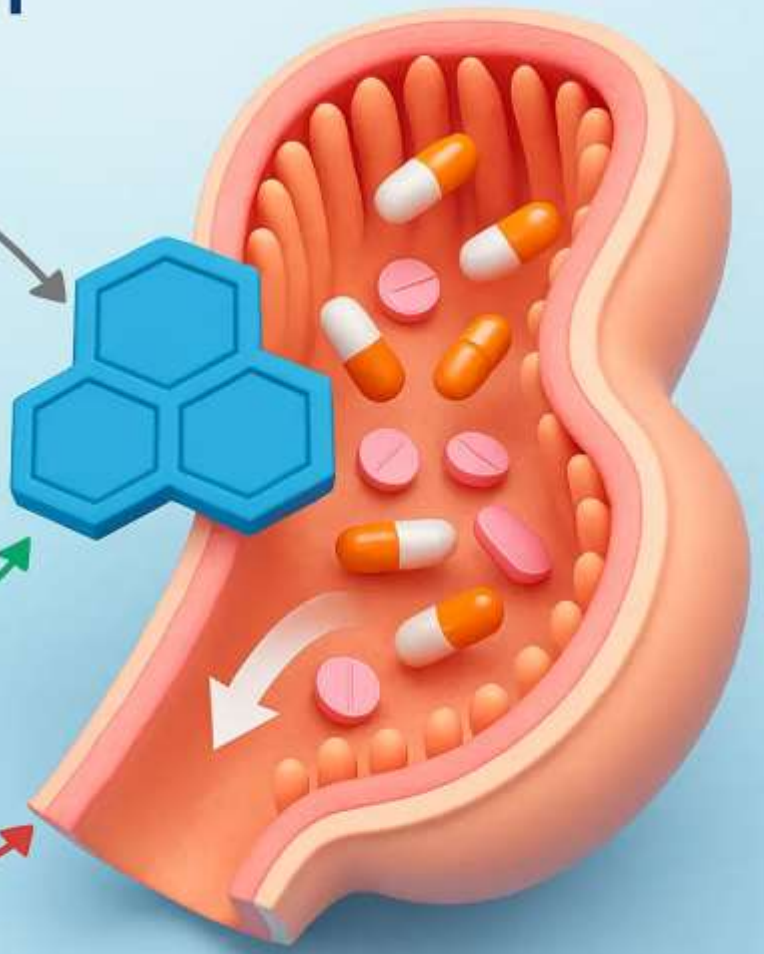
Factors Influencing Drug Absorption Through the GIT

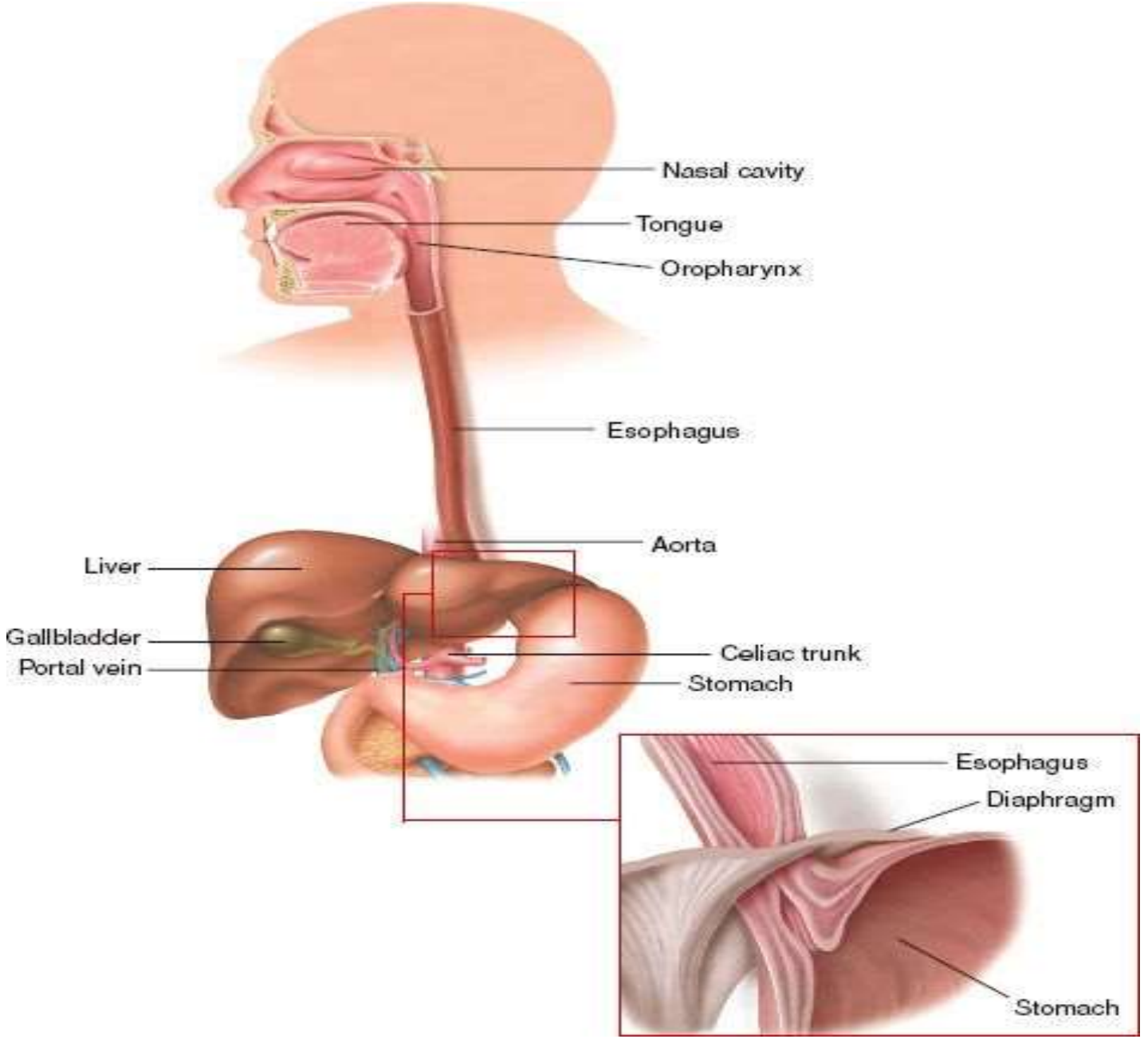
Physicochemical factors
- Solubility
- Stability
- Lipophillicity

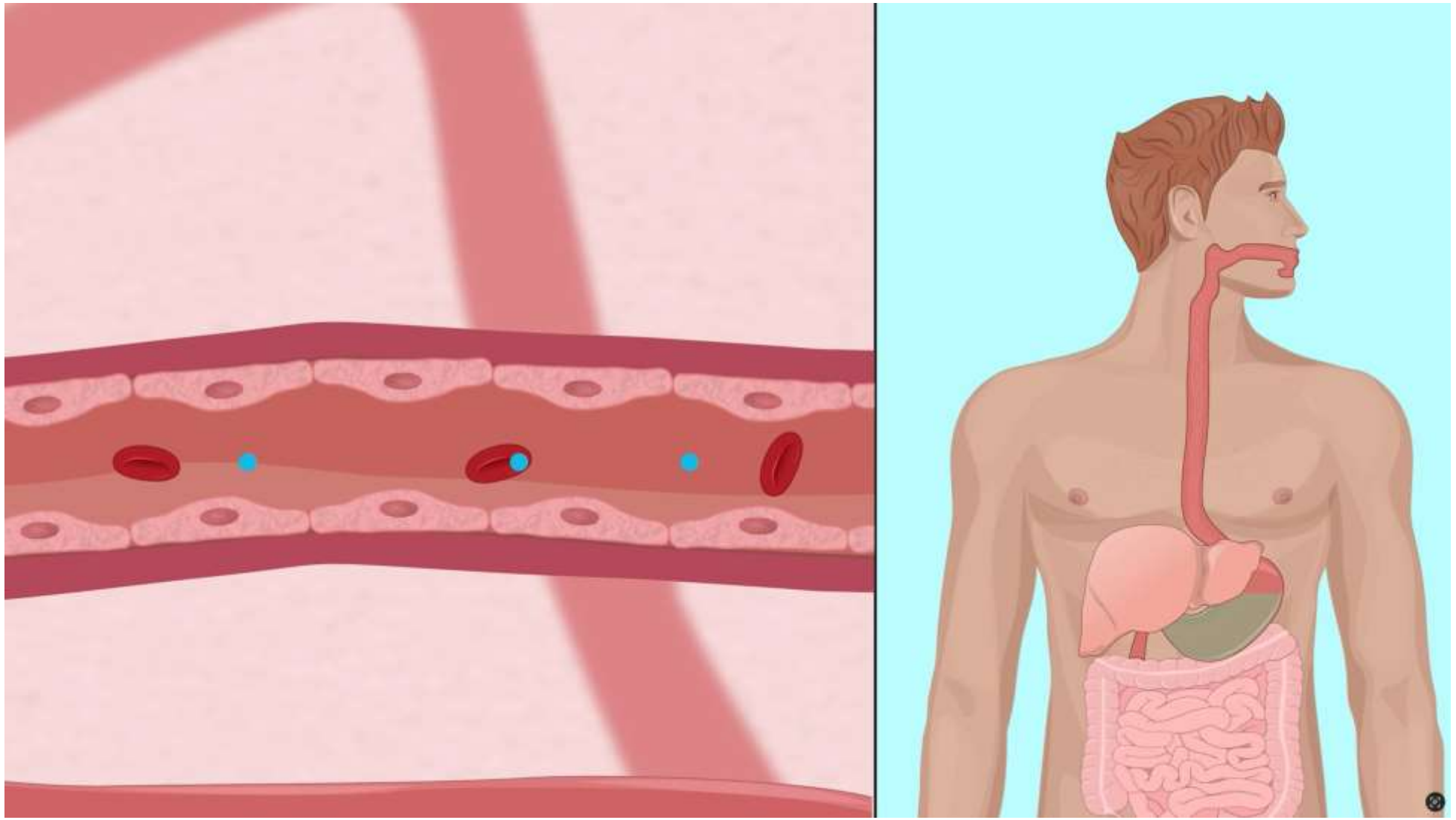
Formulation factors
- Dosage form
- Excipients

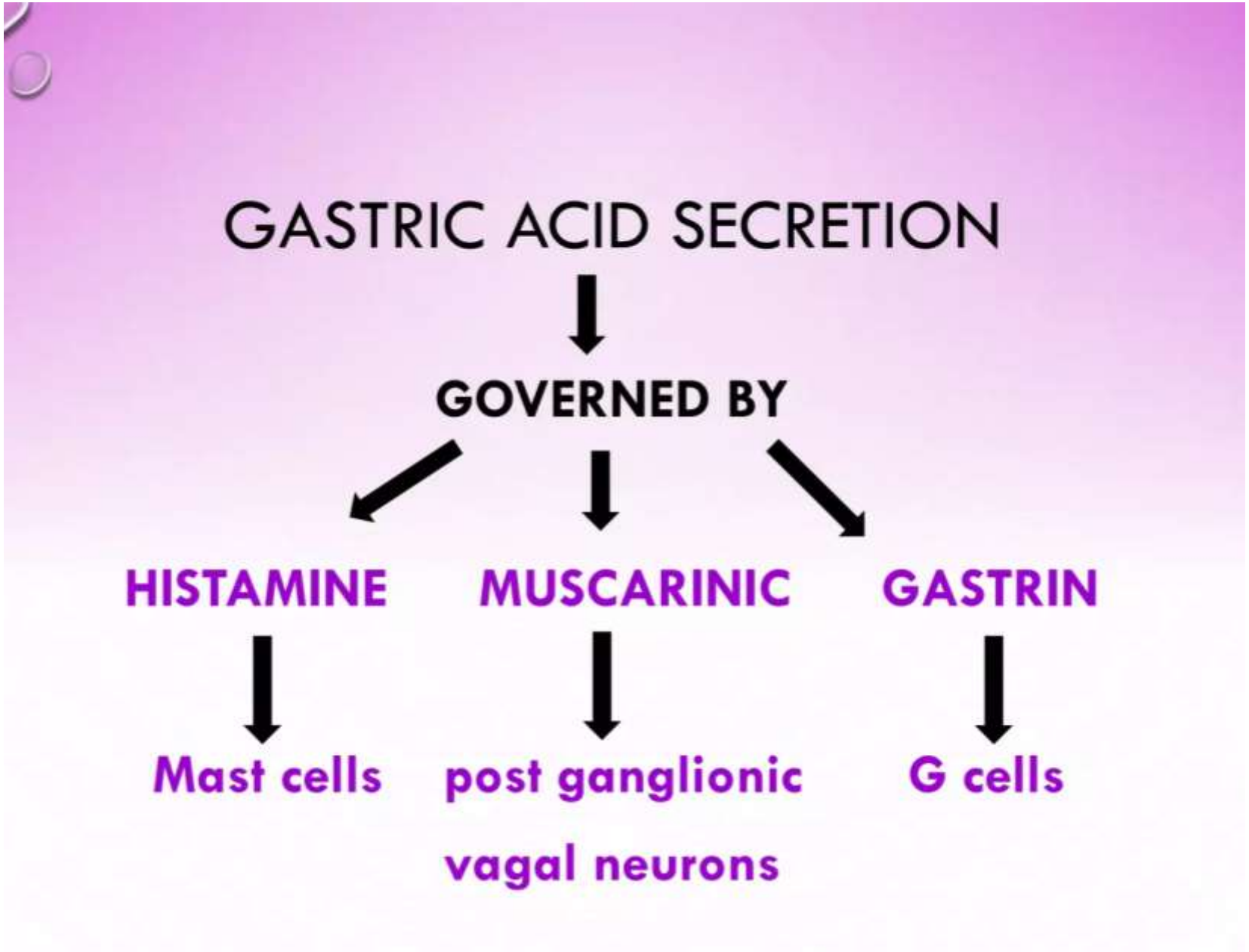
Physiological factors
- pH
- Gastric emptying time
- Intestinal motility

Pathological factors
- disease state




Nasal cavity
Tongue
Oropharynx
Esophagus
Aorta
Liver
Gallbladder
Portal vein
Celiac trunk
Stomach
Esophagus
Diaphragm
Stomach




GASTRIC ACID SECRETION
GOVERNED BY
HISTAMINE
MUSCARINIC
GASTRIN
Mast cells
post ganglionic
vagal neurons
G cells

HCL

↓

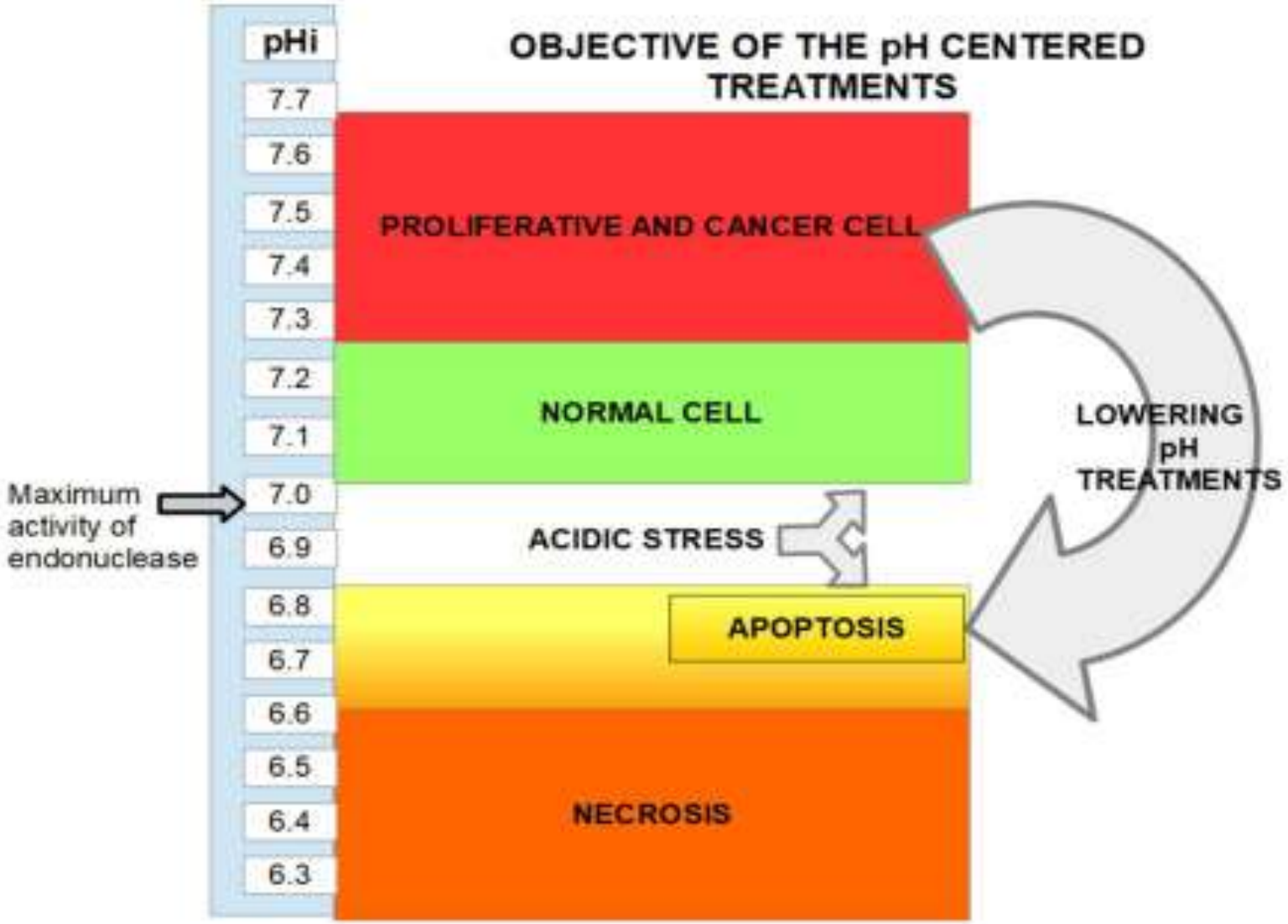
Secreted By **Oxyntic (parietal) Cells**

↓

Secretion under the control of;

↙ ↓ ↘

Acetylcholine **Histamine** **Gastrin**


OBJECTIVE OF THE pH CENTERED TREATMENTS
pHi
7.7
7.6
7.5
7.4
7.3
7.2
7.1
7.0
6.9
6.8
6.7
6.6
6.5
6.4
6.3
PROLIFERATIVE AND CANCER CELL
NORMAL CELL
APOPTOSIS
NECROSIS
ACIDIC STRESS
Maximum activity of endonuclease
LOWERING pH TREATMENTS

- ***Acidifying agent***
- Definition:Used in liquid preparations to provide acidic medium for product stability
- Examples:

  Citric acid

  Acetic acid

  Fumaric acid

  Hydrochloric acid

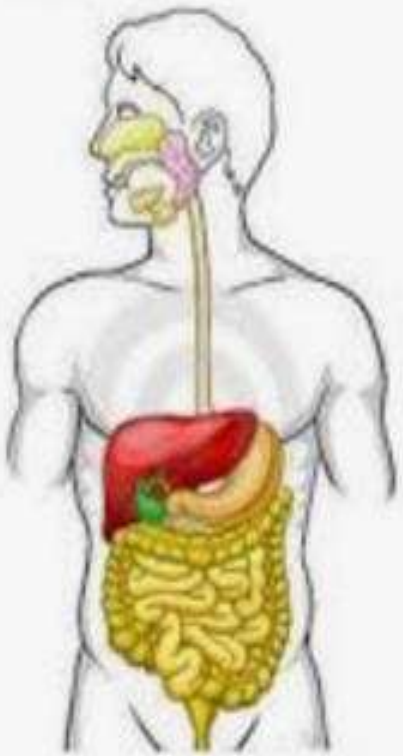
  Nitric acid

ACIDIFYING REAGENTS OR ACIDIFIERS

These are the drug which are able to increase the acidity in GIT.

- ✓ Gastric acidifiers
- ✓ Urinary acidifiers
- ✓ Systemic acidifiers
- ✓ Acids

GIT agents: Acidifiers

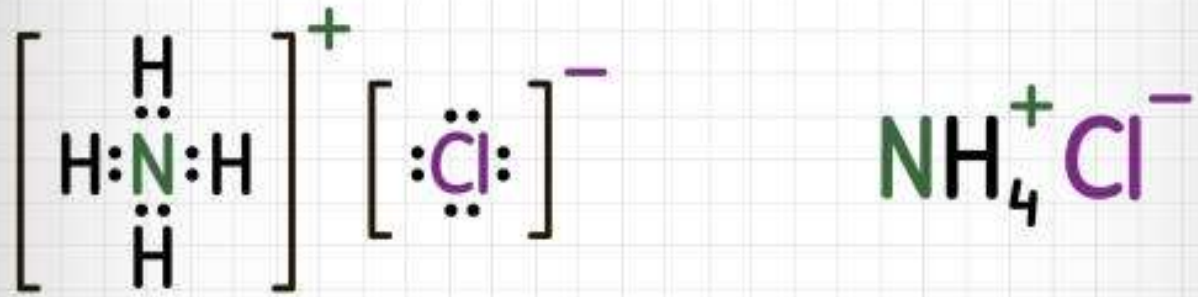


hydrogen chloride

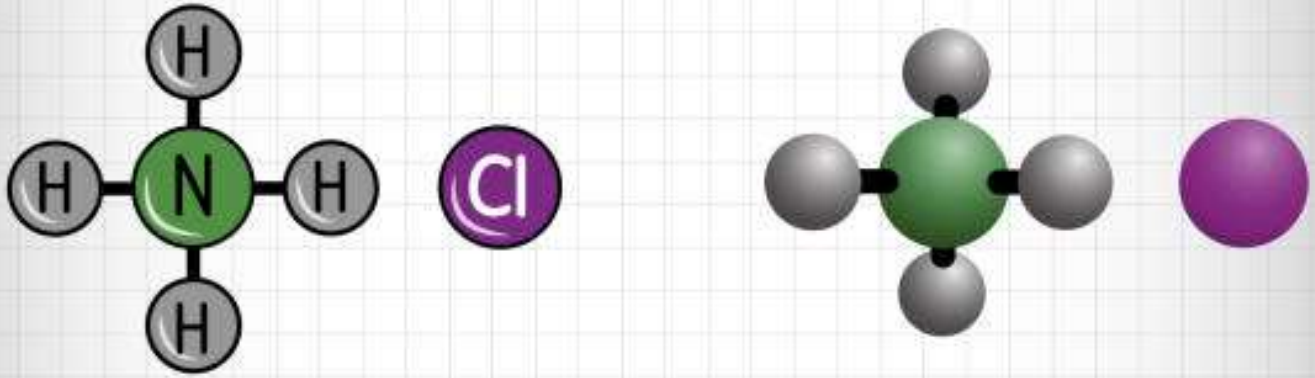
NH_4Cl


CALCIUM CHLORIDE
(Dihydrate)
CAS 10035-04-8
$CaCl_2.2H_2O$ F. Wt. 147.01
Code 024
Qty. 500 gm
ISO 9001:2015
CALCIUM CHLORIDE
(Dihydrate)
CAS 10035-04-8
$CaCl_2.2H_2O$ F. Wt. 147.01
Code 024
Qty. 500 gm
ISO 9001:2015

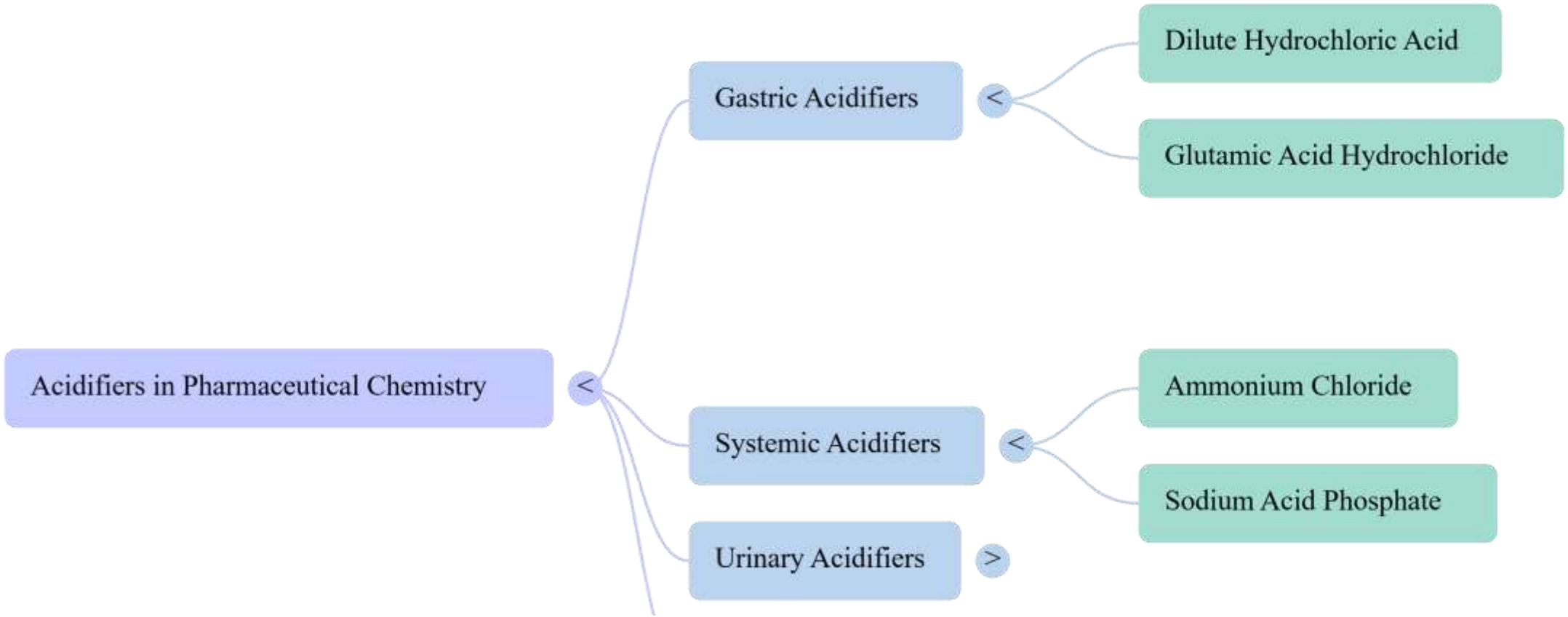
Ammonium chloride



$NH_4^+Cl^-$



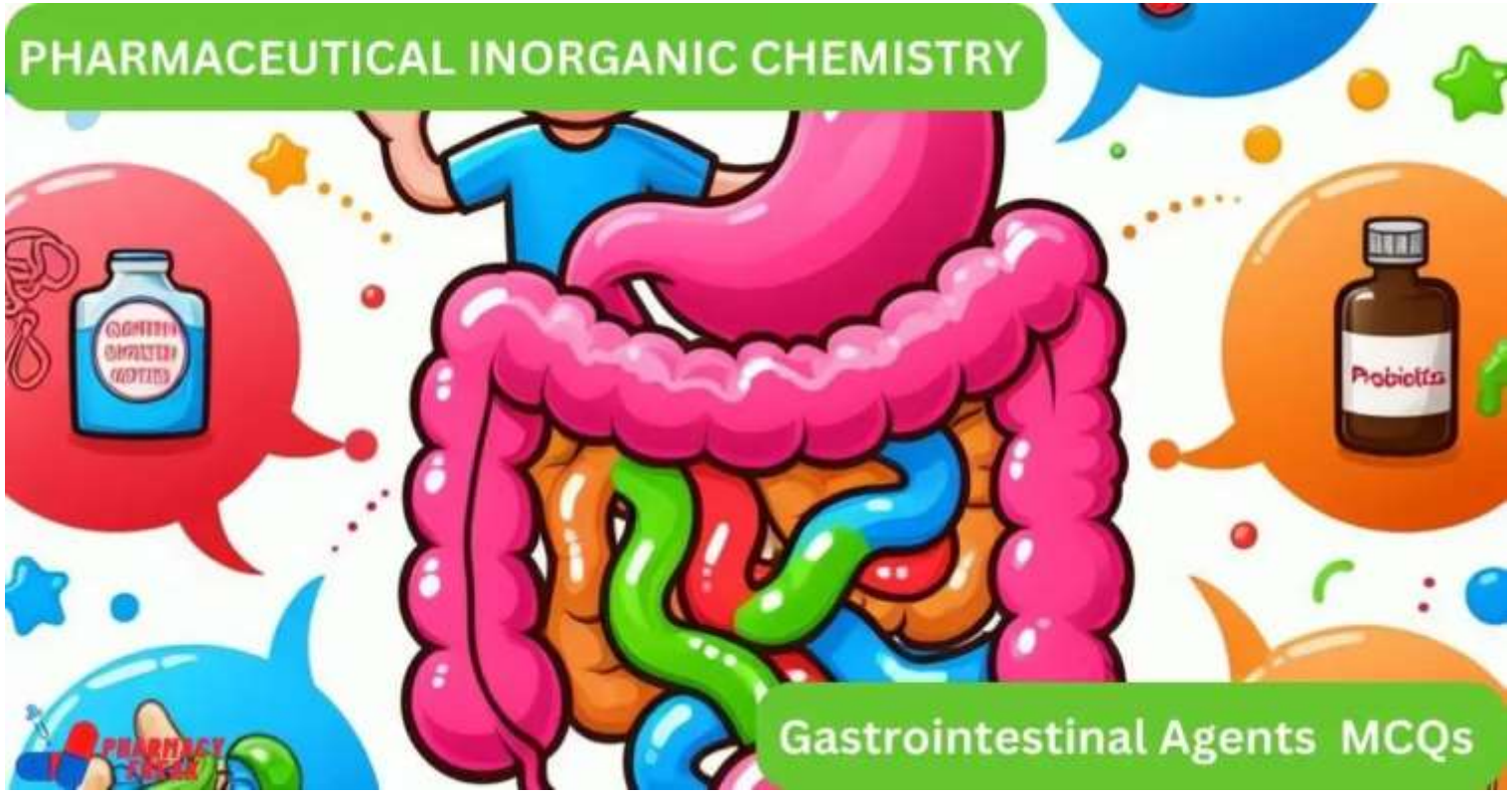
SUMMARY


Acidifiers in Pharmaceutical Chemistry
Gastric Acidifiers
Dilute Hydrochloric Acid
Glutamic Acid Hydrochloride
Systemic Acidifiers
Ammonium Chloride
Sodium Acid Phosphate
Urinary Acidifiers

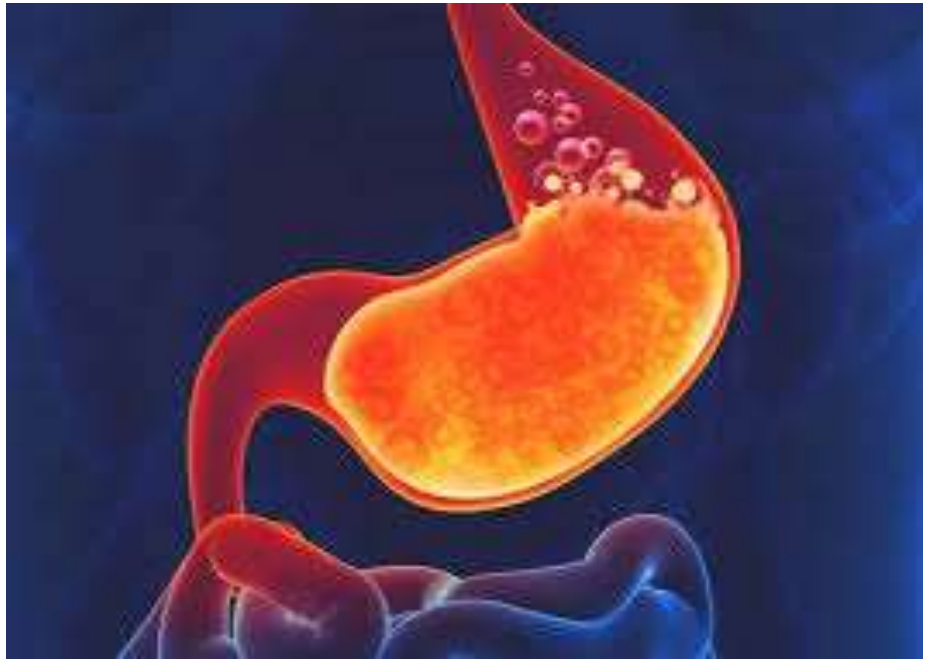
ASSESMENTS

1. Write a note on ammonium chloride?

2. Classify gastrointestinal agents?



3. Define acidifiers ?



REFERENCES

•***Pharmaceutical Inorganic Chemistry*** (for B.Pharm/D.Pharm):By **Dr. K. S. Jain & Dr. P. B. Miniyar** (Nirali Prakashan).

•By **Dr. Rajesh J. Oswal & Dr. Naresh Singh Gill & Dr. Mukesh Kumar Kumawat** (Thakur Publication).

•By **Dr. Udit Jain & Ms. Parul Srivastava** (R. Narain Publishers).

•By **Dr. Ajay D. Kshirsagar** (Shashwat Publication)


thank you