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 : MEDICINAL CHEMISTRY II

B.PHARM/ III YEAR

TOPIC: THIAZIDES

DESIGN THINKING STAGES IN CLASSIFICATION

Empathize: Understand the users — in this case, students, pharmacists, or researchers who use the alphabetical classification system.

Define: Clearly define the problem based on the insights from the empathize stage.

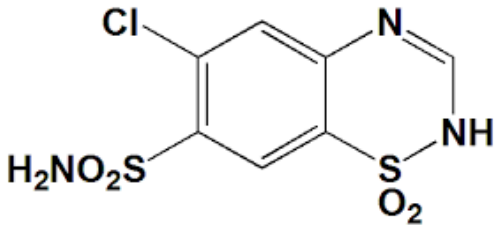
Ideate: Generate possible solutions or improvements.

Prototype: Create a tangible version of your solution

Test: Evaluate the prototype with real users.

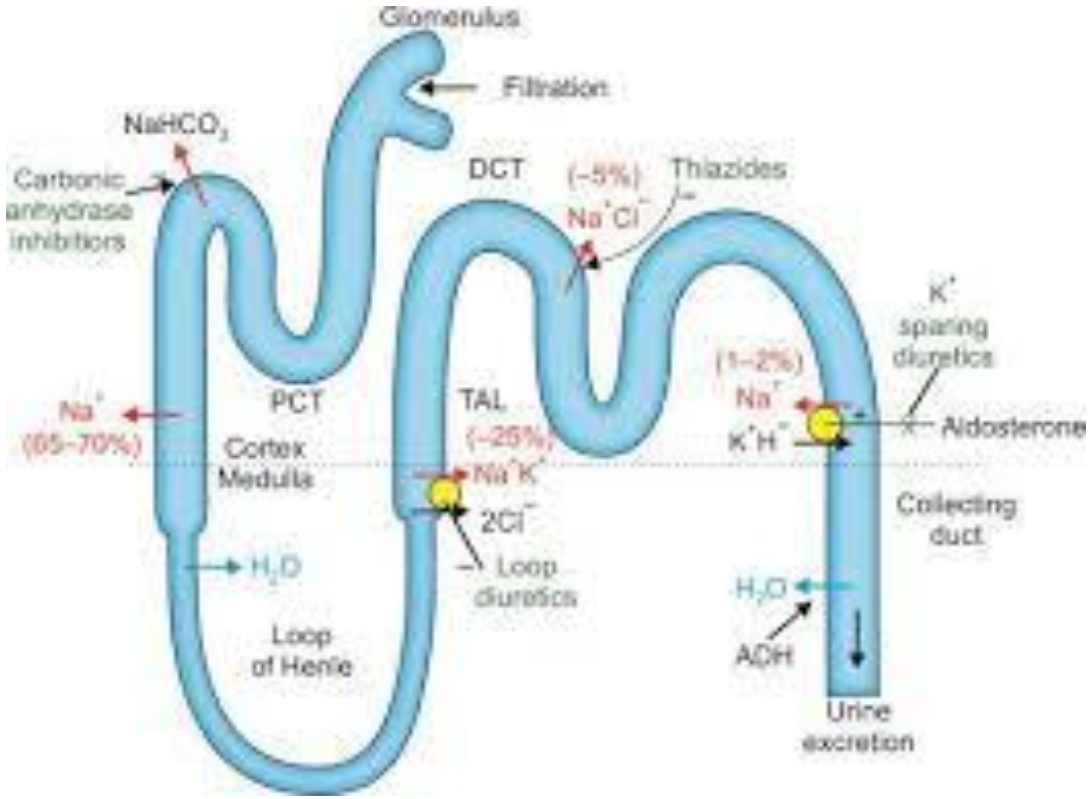
INTRODUCTION

THIAZIDES

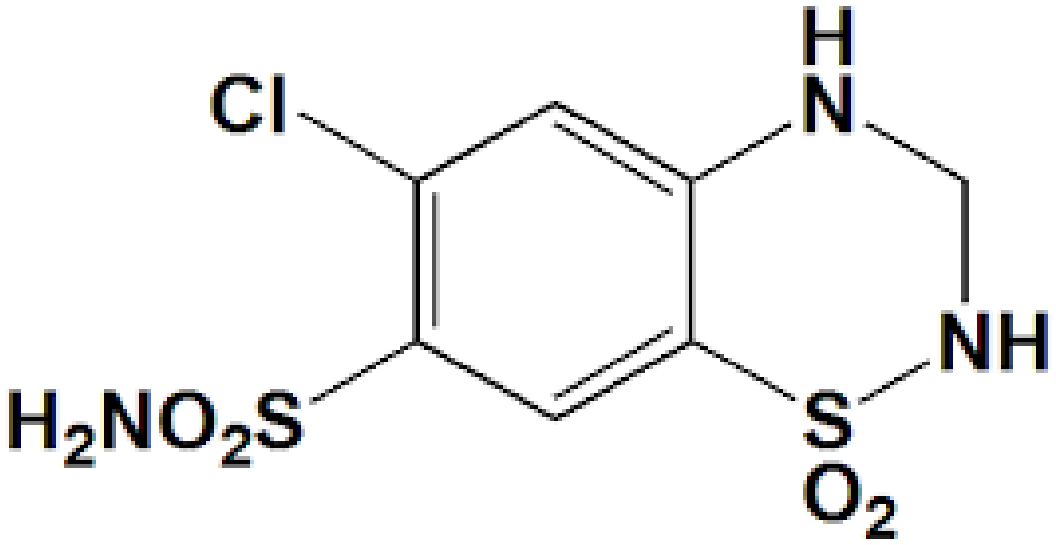


Chlorothiazide

VERAPAMIL

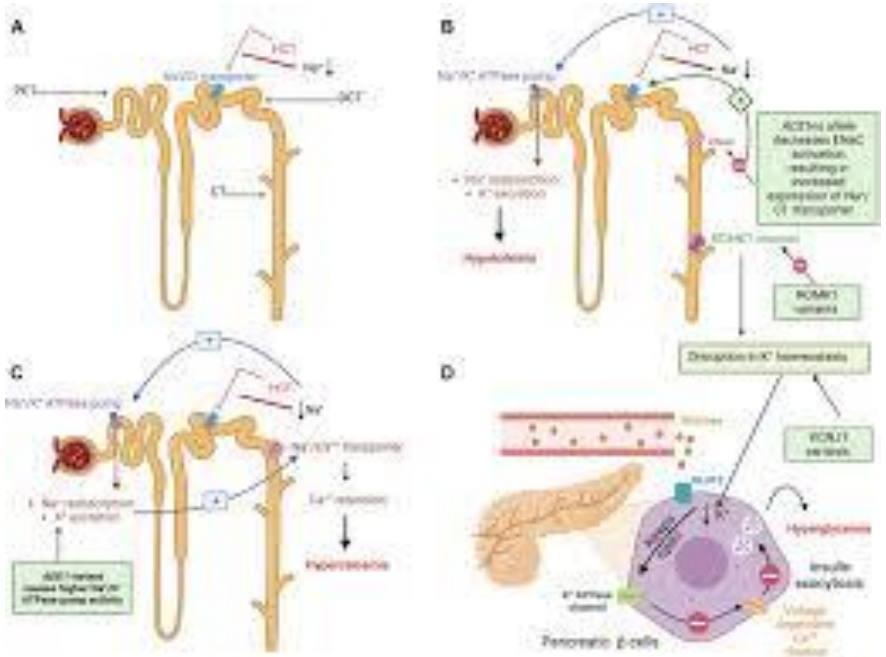

Glomerulus
Filtration
$NaHCO_3$
Carbonic anhydrase inhibitors
DCT
(~5%)
Na^+Cl^-
Thiazides
K^+ sparing diuretics
(1–2%)
Na^+
K^+H^+
Aldosterone
Na^+ (65–70%)
PCT
Cortex
Medulla
TAL
(~25%)
Na^+K^+
$2Cl^-$
Loop diuretics
Collecting duct
H_2O
Loop of Henle
H_2O
ADH
Urine excretion

MECHANISM OF ACTION

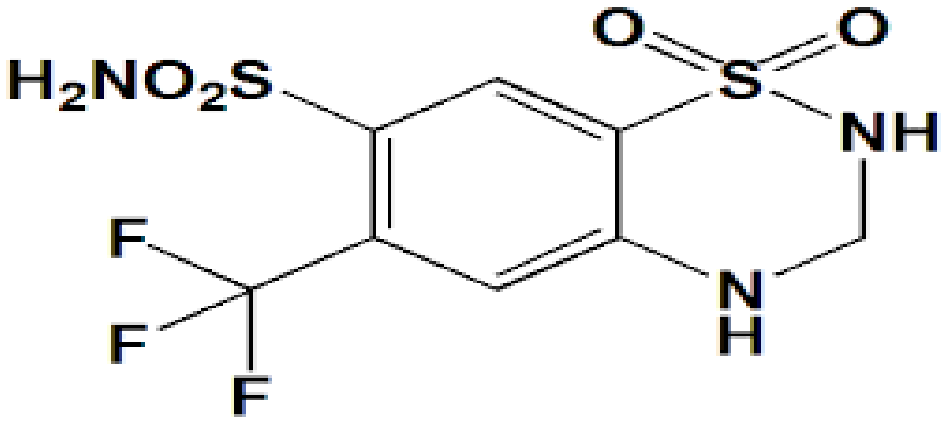


Hydrochlorothiazide

MECHANISM OF ACTION

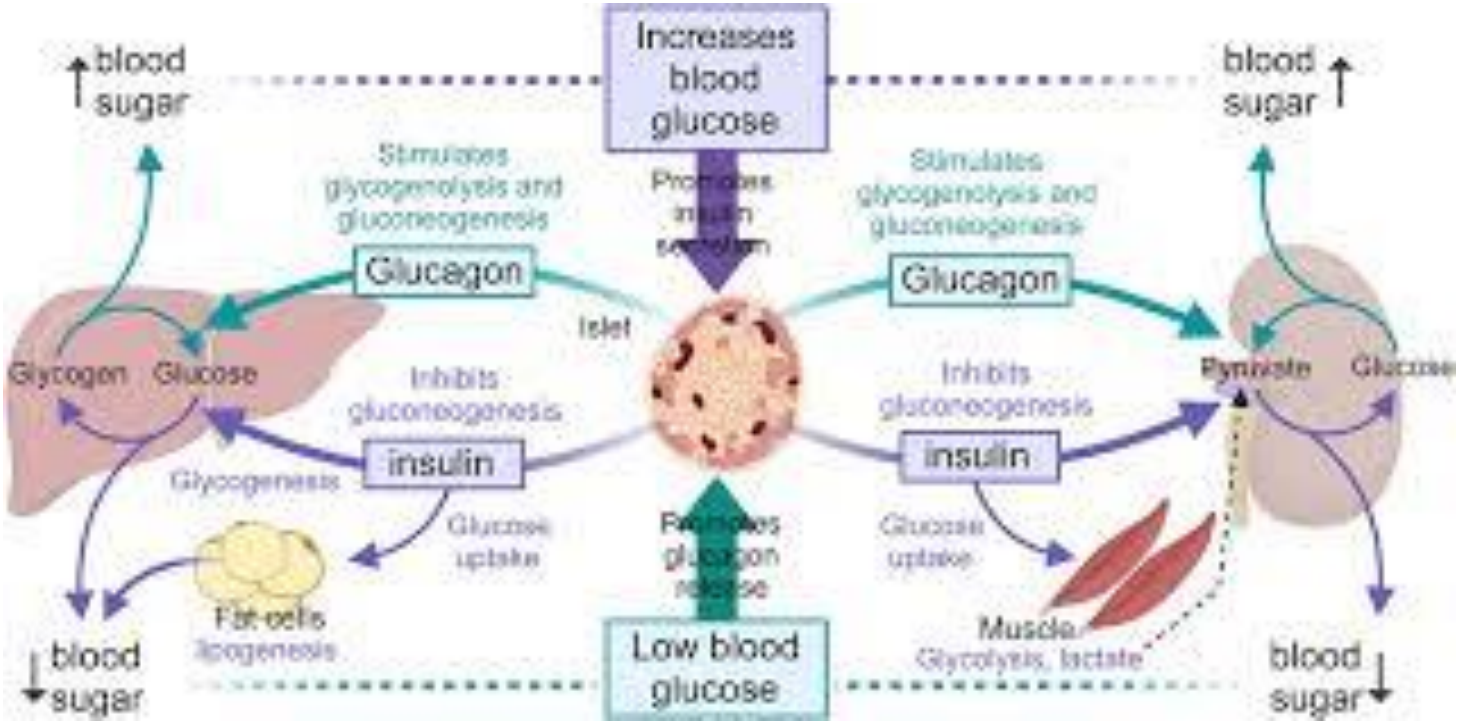


HYDROFLUMETHIAZIDE

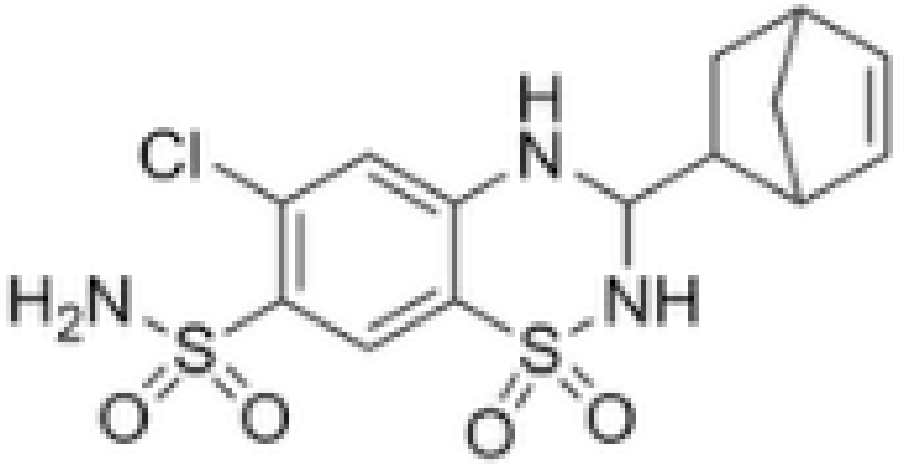


hydroflumethiazide

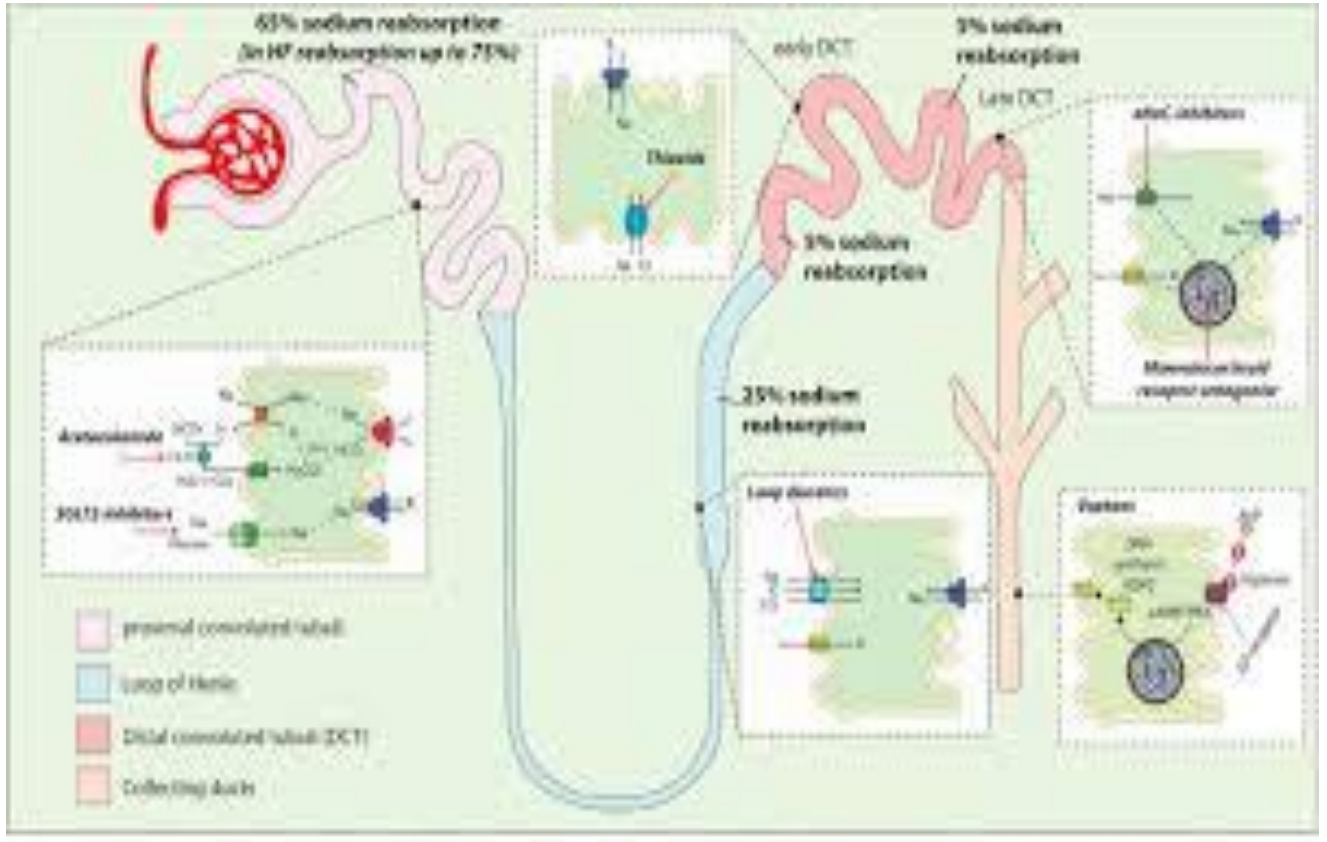
MECHANISM OF ACTION



CYCLOTHIAZIDE



MECHANISM OF ACTION



ASSESMENT

1. Which of the following calcium channel blockers is most selective for cardiac tissue?

A) Nifedipine
B) Verapamil
C) Amlodipine
D) Felodipine

2. Which calcium channel blocker is primarily used to prevent cerebral vasospasm after subarachnoid hemorrhage?

A) Nicardipine
B) Nimodipine
C) Diltiazem
D) Nifedipine

3. Which of the following is a dihydropyridine calcium channel blocker?

A) Verapamil
B) Diltiazem
C) Amlodipine
D) Bepridil

4. The main mechanism of action of calcium channel blockers in angina is:

A) Increasing calcium influx into cardiac cells

B) Blocking L-type calcium channels → ↓ myocardial oxygen demand

C) Stimulating beta-adrenergic receptors

D) Increasing heart rate

REFERENCES

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2. Wilson, C.O., Gisvold, O., and Block, J.H. *Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry*, 12th Edition, Lippincott Williams & Wilkins.

3. Patrick, G.L. *An Introduction to Medicinal Chemistry*, 7th Edition, Oxford University Press.

4. Thomas, G. *Fundamentals of Medicinal Chemistry*, John Wiley & Sons.

5. Singh, H. and Kapoor, V.K. *Medicinal and Pharmaceutical Chemistry*, Vallabh Prakashan, New Delhi.


Thank You