

INTRODUCTION TO PHARMACOLOGY : PHARMACOKINETICS  
PHARMACODYNAMICS

GENERAL PHARMACOLOGY

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• Drug: A drug is a chemical with a known structure, that alters the pathophysiology for therapeutic gain.

• Drug sources :

1) Chemicals:

- a) Natural
  - Plants: Morphine, digoxin, quinine, reserpine
  - Animals: Insulin
  - Micro organisms: Antibiotics

b) Semi-synthetic: Morphine → acetylation → Heroin (Diacetyl morphine)

c) Synthetic: Using "Rational drug designing"; MC source for drugs.

2) Genetic engineering:

• Gene → cell line → product [Drug]

Eg: Human insulin gene → cell line → "regular insulin"

• Advantages:

- Unlimited source → cheap
- Lesser hypersensitivity
- Change in gene → change in product

Eg: Change in amino acid sequence:

- Gululisine
- Lispro
- Aspart

→ Duration of action ↓  
Onset of action - faster

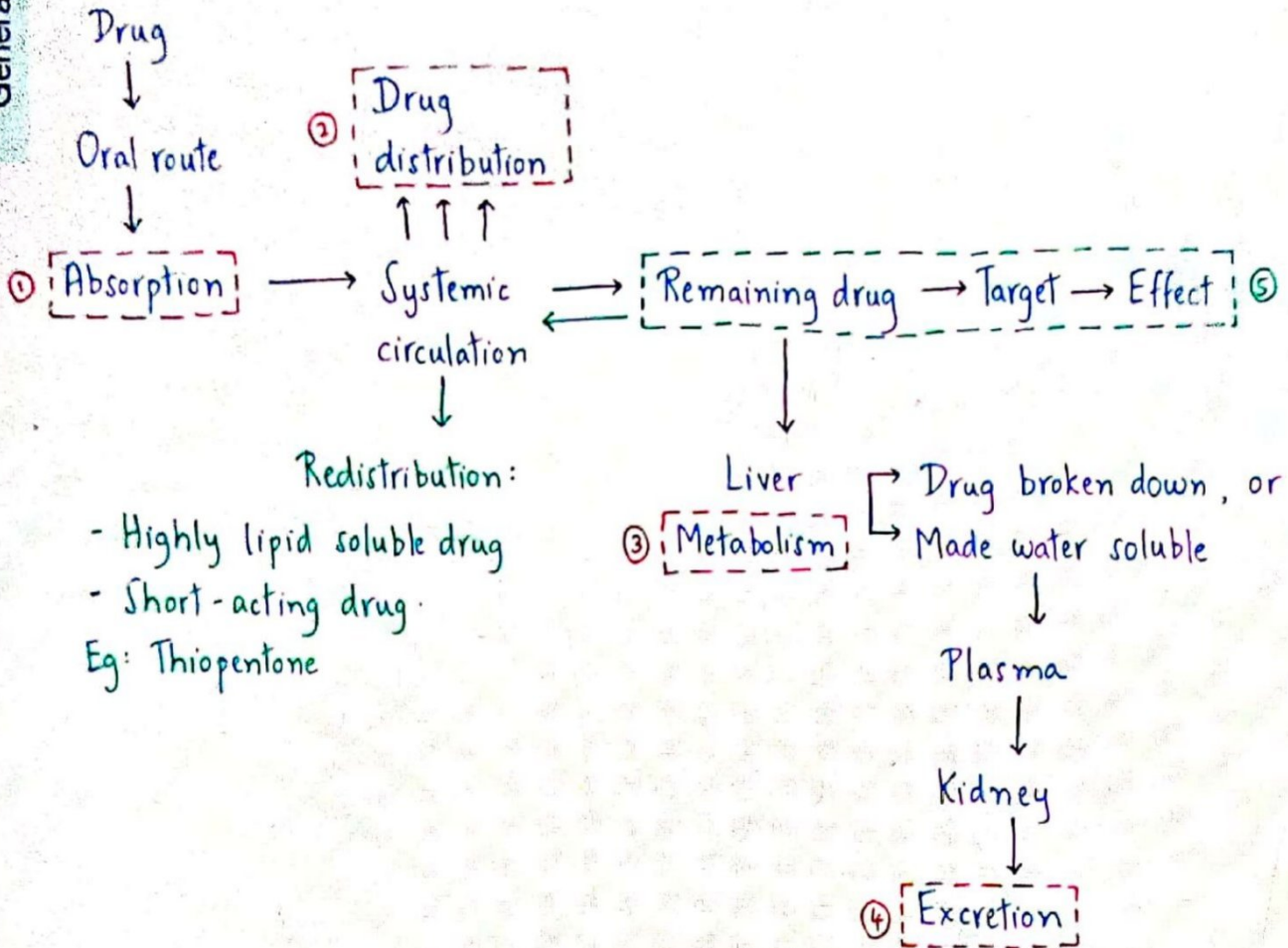
PHARMACOKINETICS | PHARMACODYNAMICS

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General Pharmacology

Pharmakon - Drug } Pharmacokinetics : Movement of drug in body  
 Kinetikos - movement }

Pharmakon - Drug } Pharmacodynamics : Change a drug can bring about  
 Dynamos - Change } in body



① + ② + ③ + ④ [ADME] : → Pharmacokinetics

⑤ : → Pharmacodynamics