

PHILOSOPHY and HISTORY DRUG and MEDICATION



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PHILOSOPHY of DRUG and MEDICATION

Life being → healthy
 → ill

“ Curing their selves ”

Animal → **instinct** → for their selves

Example:

- Chicken eat Calcium
- Cat eat grass

Human being → mind → for their selves and environmental

- Human being know the natural substance as food
- Human being eat soil (Ferrum mineral)
- Human being by generations know the traditional drug (plant / animal) → standarisasi → manufacturing

HISTORY of DRUG DEVELOPMENT

1. Experienced Origin Drug (plant, animal, mineral) → Simplisia

- Plant

Herba (intact crop)
Radix (root)
Rhizoma (bar in the ground)
Cortex (bar husk)
Folia (leaf)

Fructus (fruit)
Cortex Fructus (fruit husk)
Flores (flower)
Semen (seed)
Oleum (volatile oil / fat)

Examples : Folia Menthae piperitae, Oleum Cocos

- **Animal**

Pancreas (Trypsine, Insuline)

Liver / Hepar (Ferrum / Fe)

Testis (Hormone)

Honey

- **Mineral**

Sulphur (reducing itching)

Ferrum / Fe (from land)

Mineral salt (sea water, zam-zam water, mud)

2. Drug development process

1. "Roughage" from nature

2. Extraction from "roughage"

Greek scientist : Galen

(year 130-200 ac)

Arabian scientist : Ibnu Sina

/Avicenna (year 980-1037ac)

3. Determination of active substances

4. Isolation of active substances

5. Purification of active substances

1. Cortex of Ephedra species (China : Ma Huang)

2. Extract of Ephedra species

3. Alkaloid

4. Alkaloid

5. Ephedrine (pure alkaloid)

6. Determination of chemical Formula
7. Salt forming
8. Making syntheticly
9. Making Derivative (better from original substances)
10. Exploration of monoclonal antibody

6. Ephedrine : $C_{10} H_{15} NO$
7. Ephedrine Hydrochloridum, Ephedrine Sulfas
8. Ephedrine synthetic
9. Naphazoline Nitrate, Phenylephrine Hydrochloridum
10. Abciximab (antiagregasi platelet)

Thank you