Menthol

Mint

Relieves pain and freshens flavor. Used in pain relief gels, gum, toothpaste, cough drops, perfumes, and skin care. Also in insect repellents and cleaning products.

Menthol

Trilobatin

Chinese sweet tea, crabapple, Japanese knotweed

Natural sweetener ~300× sweeter than sugar, calorie-free, with benefits for blood sugar, inflammation, and cells. A newcomer: harder to source, less known and developed.

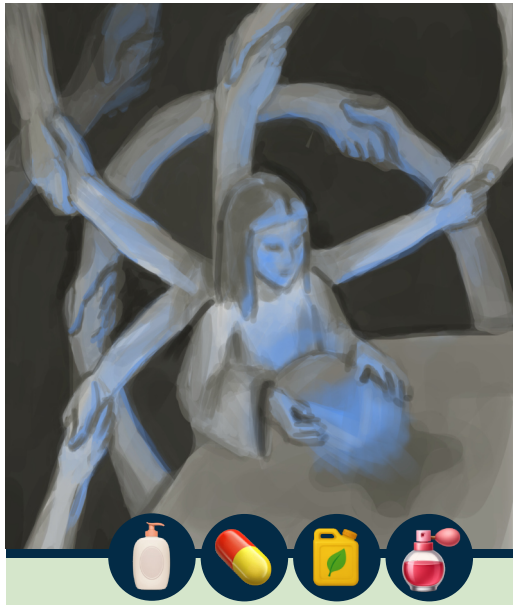
Trilobatin

Farnesene

Apple, pears, potato

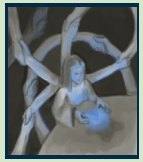
The scent of apples and pears. Used in flavors, perfumes, essential oils, and cosmetics; has antioxidant activity. Made industrially as building block for jet fuel.

Farnesene



Bisabolene

Chamomile, cubeb pepper, oregano, cedarwood



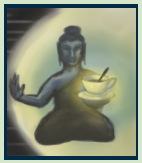
Woody, warm, spicy notes in flavors and perfumes. Studied for antimicrobial and anticancer effects, and as a building block for biofuels.

Bisabolene

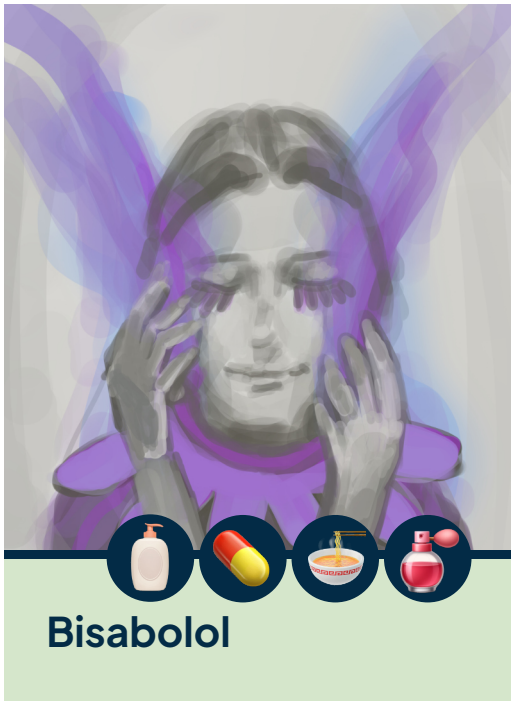
Mogrosides

Mogrosides

Monk fruit



Natural sweetener ~350× sweeter than sugar, calorie-free. With antioxidant and anti-inflammatory potential. Widely used in food, drinks, and as medicine.



Bisabolol

Bisabolol

Candeia tree, chamomile

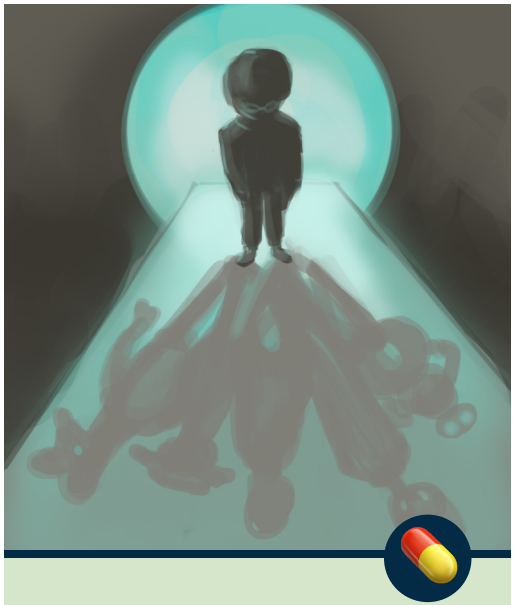
Known for soothing and healing. Anti-inflammatory, antimicrobial, used in skincare, perfumes, and gentle flavors.

Artemisinin

Artemisinin

Sweet wormwood

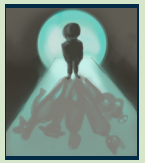
Used worldwide as the frontline combination malaria treatment, also studied for anticancer and antiviral effects.



Germacrene A acid

Germacrene A acid

Sunflower, Asteraceae

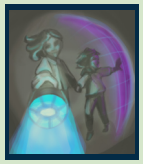


Precursor for powerful plant medicines like artemisinin (antimalarial) and compounds studied for cancer, inflammation, and infections.

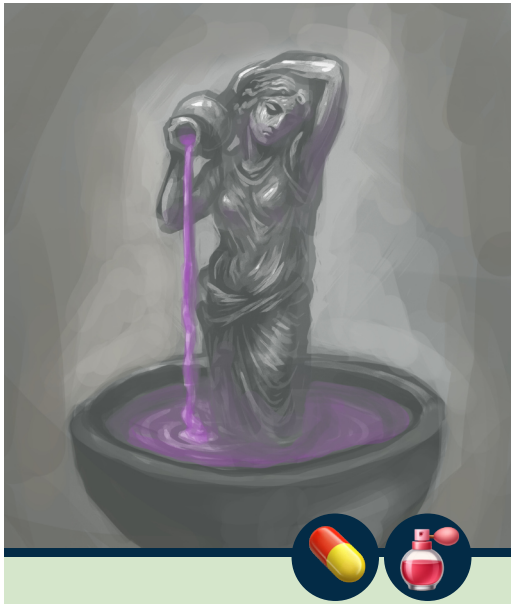
Vitamin A & E

Vitamin A & E

Carrots, fish liver, sunflower, palm, soybean



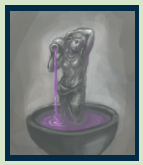
Essentials for life. Vitamin A supports vision and immunity; Vitamin E protects cells as a strong antioxidant. Used in supplements, fortified foods, and skincare.



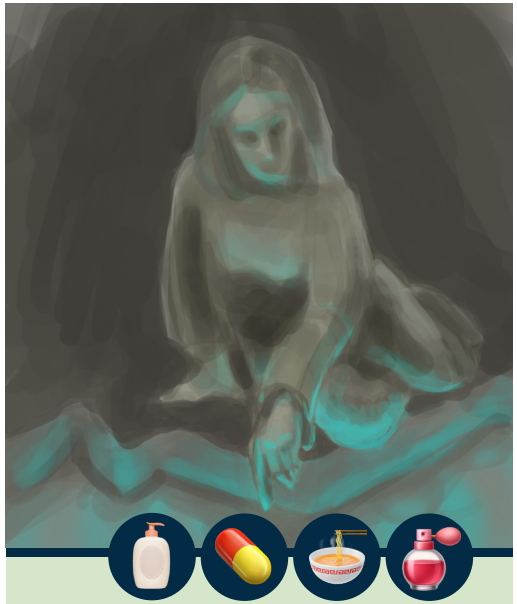
Costunolide

Costunolide

Chicory, Asteraceae



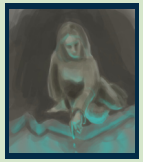
Not a commercial drug, but a great research lead for anticancer, anti-inflammatory, and antimicrobial activity.



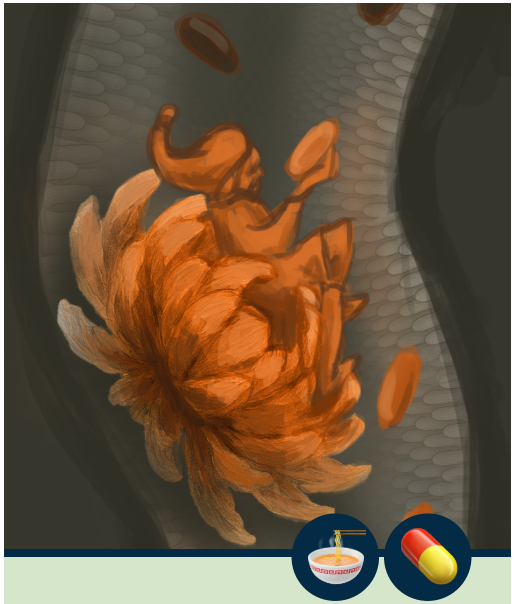
Cannabidiol (CBD)

Cannabidiol (CBD)

Hemp



Non-psychoactive compound from hemp. Proven in epilepsy treatment, also used for pain relief and calming anxiety. Found in foods, supplements, and cosmetics.

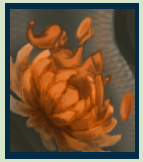


Chrysanthemin

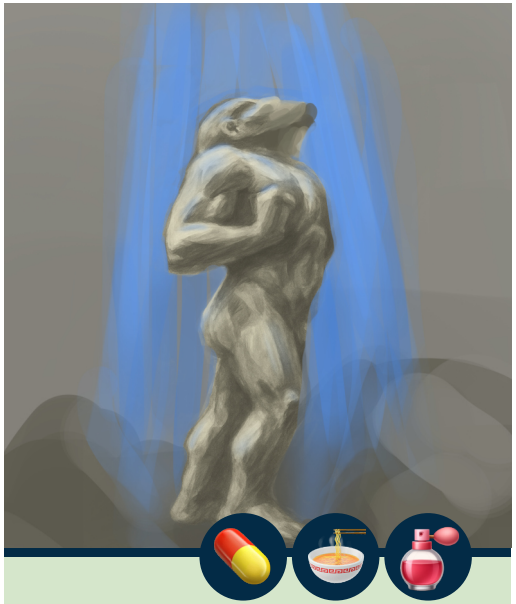
Chrysanthemin

(Cyanidin-3-glucoside)

Berries, cherries



The red-purple pigment in berries, cherries, and flowers. A strong antioxidant, linked to heart and metabolic health. Also used as a natural food dye.



Zingiberene

Zingiberene
Ginger

Adds flavor and fragrance, also shows antioxidant, antimicrobial and anticancer effects. Shows potential as natural pesticide (whiteflies).

Natural rubber

Natural rubber
(Latex)
Rubber tree

Flexible, elastic, heat-resistant and durable: a key material for tires, gloves, adhesives, electric insulation and more.

Legend:

I. Applications:

Health (medicine, nutraceuticals)

Cosmetics

Food additives (flavours, colours)

Fragrance

Materials (industrials, textiles)

Biofuels

II. Statistics (1–5):

Demand
How much a compound is needed and used. More symbols = higher demand.

Yield from plants
How much end product can be obtained from natural raw material. More symbols = more yield.

Environmental damage
How much conventional production harms nature: land use, biodiversity loss, toxicity etc. More symbols = worse for the environment.

Difficulty
How challenging it is to produce the compound with microbes. More symbols = more difficult.

Lab to market
How hard it is to scale up from smallscale lab work to industrial production. More symbols = easier upscaling.