

Tannin's Drug

DRUG	B.S, Family	chemical Constituent	Uses
Amla - Phyllanthus - Amalaki - goose berry	→ dried, ripened Fresh fruit of Emblica officinalis Euphorbiaceae	→ vitamin C (ascorbic a) 600-900 mg vit. C Pectin, Glucose gallic a, ellagic a Phyembin	→ Scruffy → Hair Care Pdt → 'Triphala Churna' → liver disorder → diabetes → diarrhoea → anemia → hemorrhage
Behda - Bibhitaki - Bellefic myrobalan	→ dried & ripened Fruits of Terminalia bellanica Combretaceae	20-30 % Hydrolysable tannin Gallic a, ellagic a Chebulic acid Sugar - Glucose Fructose Rhamnose Phyembin	→ Purgative → laxative → anti-diabetic → liver disorders → Triphala Churna
Hande - Haritaki - chebulic myrobalan	Terminalia chebula Combretaceae	20-40 % Hydrolysable tannin → Hydrolysis chebulic a D-galloyl glucose Gallic a, ellagic a Resin Myrobalanin Sugar → Glucose Sucrose ...	→ Purgative → dental Pdt → Triphala Churna → Treatment of.. - Chronic ulcer - wound - Piles - Gastritis

Unit 2: Natural

Ashoka Bark

→ stem bark obtained from <i>Santalum indicum</i>	Condensed tannin	→ sedative
	Ketosterol	→ as uterine tonic
	β-sitosterol	
	Sterol	→ p & w is having
Leguminosae	Catechol	<u>Oxytocic</u> activity
	→ Phlobaphene	
	→ Phenolic & non-phenolic glycoside	

Pterocarpus wood

Dried Heartwood of <i>Pterocarpus marsurium</i>	Pterostilbin	Antidiabetic
	Campusin	Hypoglycemic
	Mansurin	
	Liquiritigenin	→ made up of heartwood of <i>Pterocarpus</i>
leguminosae	→ Isoiquiritigenin	↓ treatment of diabetes
	Mansupol	
		→ antifungal
		→ prep ⁿ of ointment
		→ Astringent
		→ diarrhoea dysentery
		→ In dying of Industries

antidiabetic drug

- Vijayasar
- Biyo
- Indian kino

Bael	→ unripe or half-ripe fruits of <i>Aegle marmelos</i> Rutaceae	9.1. Condensed tanning Coumarin glycoside ↓ marmesolin marmesin marmelide Alkaloids → Aegelin Aegelinin marmelin	→ Popular drug in Ayurveda for treatment of ... - diarrhoea - dysentery → antidiabetic Epicarp
		Polysaccharide ↓ Galactose Rhamnose arabinose uronic acid	steam distillation Vol. oil → laxative → Prepⁿ of Sherbat
		→ Mucilage	→ Dashmula - nisth
Galls	Turkish Pathological out growth on twigs of oak tree <i>Quercus infectoria</i> (Fagaceae)	Turkish 40-60% Tannic acid Gallic acid, ellagic acid Jalan	→ as astringent → Prepⁿ of tannic acid
	Jalan Galls produced by <i>Rhus chinensis</i> by gall wasp <i>Cynips tinctoria</i> by laying eggs in twigs	75% Tannic acid 7-10% Gallic acid with glucose molecule	

An Cariferae

<u>Red Catechu</u>	Dried aqueous extract prepared from leaves & shoots of <u>Uncaria gambier</u> <u>Rubiaceae</u>	Condensed Tannin → Astringent 7.33% Catechin → Prep ⁿ of lozenges. 22.25% Catechu-tannic acid → Printing → dying → Betel leaves
		decomposition ↓ <u>Catechu red</u>
		Gambier Fluorescence ↓ Chlorophyll ↓ Flavone ↓ <u>Quercetin</u>

<u>Black Catechu</u>	Dried aqueous extract prepared from heartwood of <u>Albizia</u> <u>Leguminosae</u>	Acacatechin → 4.12% Catechutannic acid → 25-30% Catechu red Quercetin
<u>Catechu khadin</u>		
<u>Kattha</u>		
<u>Catechu nigrum</u>		Drum → 20-30% Chlorophyll Gambier Fluorescence ↓ <u>absent</u>

Volatile oil Containing Drugs 3

Mentha	Fresh or dried leaves of	1.3 % Vol. oil	→ stimulant
Piperment	Mentha piperata	American	→ Antiseptic
	<u>Labiatae</u>	50-78 % menthol	→ Carminative
		Japanese	→ Flavouring agent
		70-90 % menthol	→ as spice
		→ acetic a	
		→ Valeric a	
		→ 2-acetyl 4-isobutyryl Pyridine	
		↓ few	
		→ minty odour	
		→ Menthofuran	
		→ Pulegone	
Clove	→ dried flowering buds of	15-20 % Vol. oil	aromatic
Lavina	Eugenia	13 % Cinnolonic a	Carminative
	Caryophyllus		stimulant
Dental analgesic		Caryophyllene	→ as spice
	<u>Myrtaceae</u>	85-90 % Eugenol	→ antibacterial
		→ acetyl Eugenol	→ dental Pdt.
		→ vanillin	
		→ methyl Furfural	→ Eugenol ↓
		→ dimethyl Furfural	local anaesthetic action
		Anemol → due to methyl amyl ketone	

Fennel

Varigali

Saunph

dried ripe
fruits of
*Foeniculum
vulgare*

4-5% vol. oil

50-60% Anthole

18-20% Fenchone

Umbelliferae
One variety of
fennel (ooty)

anthole absent
methyl chavicol
Present

Expectorant
Stimulant
Carminative

Flavouring
agent in
cough syrup

Imp of
mouthwash
& dental etc

Coriander

Dhena

dried fruit
of *Coriandrum
Sativum*

0.8-1% vol. oil

90% Linalool

(Umbelliferae)

Pinene
terpinene

Limonene

cymene

vit. A

Aromatic

Carminative

Stimulant

Flavouring
agent

use to
treat
digestion
problems

Cumin

Jiru
Fructus Cumin

dried fruits of
*Cuminum
cuminum*

3-4% vol. oil

terpinene
cymene

Umbelliferae

Cuminic aldehyde

cuminyl alcohol

hydrocumine
aldehyde

Flavouring
agent

Expectorant

Carminative

as spice

<u>Cummin</u>	dried fruits of ...	3-7 % vol. oil	<u>Cumminative</u>
<u>Shahjira</u>	<u>Cuminum</u> <u>Cuvi</u>	50-60 % <u>Carvone</u> 40-50 % <u>Carvol</u>	Expectorant
<u>Fructus Carvi</u>	<u>Umbelliferae</u>	→ <u>Limonene</u> → <u>Dihydro Carvone</u> → <u>Dihydro Carvol</u>	Stimulant → as spice

<u>Dill</u>	dried ripe fruits of	3-4 % vol. oil	→ used in gastric Prob. in infants
<u>European dill</u>	<u>Anethum graveolens</u>	50-60 % <u>Carvone</u> <u>Dihydro Carvone</u> absent	→ Prep ⁿ of gripe water
<u>Anethum</u>	<u>Umbelliferae</u>	→ <u>Limonene</u> → α - <u>Phellandrene</u> → <u>Flavonoids</u> → <u>Kempferol</u>	

<u>Indian Dill</u>	dried ripe fruits of	→ <u>Dillapiol</u> (toxic)	→ <u>Dillapiol</u> ↓ toxic
<u>Sowa, suwa</u>	<u>Anethum sowa</u>	<u>Flavonoids</u> → <u>Kempferol</u> → <u>Quercetine</u>	→ 50 Indian dill not officia in T.P
	<u>Umbelliferae</u>		

variety	vol. oil	Carvone	dihydro Carvone	Limonene	Dillapiol	LD ₅₀ value
Ghoda	3-4	36	15	15	12	very less
Vizag	4-6	46	8	46	-	dill oil is not Harmful
Pale varigali	4-6	42	-	39	14	→ Prep ⁿ of gripe water
mk varigali	2-3	22	-	22	15	

Cinnamon

Ceylon

Dalchini

dried barks of shoots of coppiced tree of Cinnamomum Zeylanicum

Laurel

0.5 - 1 % vol. oil

50-75 % cinnamic aldehyde

5-10 % Eugenol

Phellandrene

Caryophyllene

Phlobatannin

Mucilage

Starch

Calcium oxalate

→ Carminative

→ expectorant

→ anesthetic

→ as spice

→ antiseptic

Cassia

Chinese cinnamon

Taj Mahal

Cinnamomum

Cassia

Laurel

1-2 % vol. oil

75-90 % cinnamic aldehyde

Methyl o-cumin

Caryophyllene

Tannin

Mucilage

Starch

Calcium oxalate

→ mild astringent

→ To prevent infection

→ Nausea

→ vomiting

→ diarrhoea

Vol. oil (↑)
Mucilage (↓)

↓ compared to

Cinnamon

Queen of spices

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Candamom	dried, ripe fruits of	2-8 % vol. oil	→ formation of compound
Eleichi	Eletharia	50 % cineole	Tricthure
	Candamomum	→ Borneol	
	Zingiberaceae	→ terpineol	
	(minuscule)	→ terpinene	
		→ Fixed oil	
		→ Starch	
		→ Protein	
Ajowan	dried, ripe fruits of	→ Phenol type vol. oil	→ use in lack of appetite
Ajma	Trachyspermum	↓ 2-4 %	
Bishop's weed	ammi	Thymol	→ antifungal
		→ p-cymene	antioxidant
	Umbelliferae	→ α-pinenes	antimicrobial
	(Apiaceae)	→ α-γ terpinene	anti anthelmintic
		→ Camphene	
		→ myrcene	
		→ starch, Protein, fat	→ Treatment of acidity, migraine
			Cold
Lemon Peel	Fresh or dried pericarp (rind) of Citrus medica	2.5 % vol. oil	→ Flavouring agent
		4 % Citral	
		90 % Limonene	→ as Perfume
Cortex limonis	var. Limonum	→ Citronellal	
	Rutaceae	→ Geranyl acetate	→ Stomachic
		→ Hydroperidin	→ Insect repellent
		→ Pectin	
		→ Glycosides	

Lemon Grass

Meissa oil

fresh leaves of
Cymbopogon
Flescuus

1-2 % Vol. oil

kenesol → 70-80%
citral

→ Antifungal
→ lanicidal
activity

Cineol

Terpinen → 24%
citral

→ synthesis of
(β -ionene)
(vit-A)

→ Cineol

→ linal

→ citronellal

→ Herbal tea

→ citronellol

→ Antioxidant

→ citronellyl acetate

→ geranyl acetate

Valerian

Eupolein

drug contains

Valerianol

used in

Hepatosarcoma

dry rhizomes
& roots of

Valeriana
officinalis

Valerianaceae

0.5-1 % Vol. oil

Esters

Borneol formate

Borneol isobutyrate

Terpene

limonene

Camphene

Sesquiterpene

Valerianol

Valerianone

Valtrate

Valerianol

Sedative

Spasmolytic

Transquilizing

→ insomnia

→ Cytotoxic

→ Treatment

of

Hepatosarcoma

Indian Valerian Tagar Bililotan	Rhizomes, roots & stolons of Valerian walluchi	10% vol. oil 2% Valerianol	→ similar to European Valerianol
[Vaj]	dried rhizomes of Aconitum	2-6% vol. oil	→ sedative
Calamus	Calamus - asarone rich in β -asarone		→ Tranquillizing Property
Rhodavaj vaccha	Anaceae	Bitter glycoside ↓ Calamine	→ use in depression & anxiety
Sedative Tranquillizing		starch mucilage traces of tannin	→ spasmolytic → Antiseptic
		2n } → contains An } Isoeugenol	→ used to clear voice
	A. Calamus (3n) → European		
	A. americanus (2n) → american		
	A. angustata (4n) → Indian		
	α - asarone	β - asarone	
	2% into 20% vol. oil	8% → 80%	
		Carcinogenic	

Tulsi

Holy Basil

fresh & dried leaves of 'Ocimum Sanctum'

Labiata

10.7 % vol. oil

70 % Eugenol

- Carvacrol
- methyl Eugenol
- Caryophyllene
- alkaloids
- irygosides
- tannins
- vit. C

→ Treatment of Cough, Cold, gastric prob.
→ Antiseptic
→ spasmolytic

Eucalyptus

Nitgini

Whole and cut dried leaves of Eucalyptus globulus

Myrtaceae

1-3 % vol. oil

70-85 % cineole

Terpenes

Pinene
Camphene

- Valerene
- butyric
- Carboxylic aldehyde

Antiseptic
diaphoretic
diuretic
Expectorant

→ used in Inhaler
→ as Counter Irritant

Nutmeg

Jayfal

Myristica

dried kernels of Myristica fragrance devoid of seed coat & arillus (mace)

Myristicaceae

5-15 % vol. oil

4 % Myristicin

alcohol → terpinol
cinnamyl
benzyl

→ Carminative
→ to Central diarrhoea

Psychotropic
hallucinogenic
activity

	30 - 40 % fat	
	oleic acid	→ Spasmodic
	Palmitic acid	→ antiemetic
	Myristic acid	→ Counter Irritant
	Saffrole	
	Apiole	→ Abso
	Elemicin	→ Abortifacient activity

Mace	anillus of 25 % Vol. oil	flavouring agent
Javanthi	Seed of 20 % fixed oil	Carminative
	2-hydroxy diiso Eugenol	
	5-methoxy dihydro diiso Eugenol	
	Amylodextrin	

Saffron	Stigma & pistil of Crocus Sativus	Protocrocin (Triterpenoid glycoside)	→ as spice
Kesar	<u>Indicaeae</u>	drying	→ Flavouring, colouring agent
			→ sedative
			→ Spasmodic
		Crocin → Picrocrocin	
	α -Pinene	diterpenoid	
	Sinanol	monoterpenoid	
	0.4 - 1.3 % Vol. oil	Glucobiose	
		Saffranol + Glucose	
		↓ degradation	

Rose oil

Essential oil

obtained from
distillation of
fresh petals
of *Rosa*
Sentifolia

0.027 - 0.036 %

Vol. oil

Cosmetic preservative

Semisolid vol. oil

→ Perfume

→ Steroids

→ Rose water

Rosaceae

70 - 75 % citronellal

→ Antidepressant activity

→ Geraniol

→ nerol

→ linalool

→ caryophyll acetate

Garlic

Hypolipidemic

Dried Bulb of

0.46 - 0.80 % vol. oil

diabetes

Allium Sativum

Sulphur Compound

→ antiviral

Liliceae

Allicin

→ anti cancer

→ anti ageing

→ anti arthritis

Hypocholesterolemic

→ nicotinic acid

→ folic acid

↓ use BCL

→ vit A, vit - C

case lipid

→ Riboflavin

→ Biotin

Hypoglycemic

⑤ → dimethyl sulphide
dimethyl disulphide

allyl methyl sulphide

allyl methyl disulphide

dimethyl trisulphide

di-allyl trisulphide

<u>Nagermoth</u>	dried rhizomes of <u>Cybus rotundus</u>	0.5 % vol. oil	Antispasmodic
<u>Nut grass</u>	<u>Cyperaceae</u>	<u>α-Cyperone</u>	anti-inflammatory
		→ <u>Cyperenol</u>	antithalmentic
		→ <u>eugenol</u>	
		→ <u>Isocyperenol</u>	→ Perfume
		→ <u>α-Retinol</u>	
		→ <u>Flavonoids</u>	→ Insect repellent
		→ <u>Resinous matter</u>	→ <u>antidote</u> in all poison
		→ <u>Sesquiterpenes</u>	→ <u>skin disease</u>
		↓	
		<u>Cyperol</u>	
		<u>Isocyperol</u>	
<u>Orange Peel</u>	dried & fresh peels of rinds of <u>Citrus aurantium</u>	1-2 % vol. oil	→ <u>Stomachic</u>
<u>Cortex auranti</u>	Var. <u>amara</u> or <u>bilis</u>	<u>90 % limonene</u>	→ <u>Prepⁿ of liver extract</u>
	<u>dulcis</u> or <u>sweet</u>	<u>citral</u>	→ <u>anomatic Elixir</u>
	<u>Rutaceae</u>	<u>Glycoside</u> ↓	
		<u>Aurantimarina</u>	
		<u>naringin</u>	
		<u>Hesperidine</u>	
		<u>Iso hesperidine</u>	
		<u>vit c</u>	
		<u>Pectin</u>	

<u>Citronium</u>	Steam distillat ⁿ of fresh leaves & flowering tops of Pelargonium graveolens	0.08 - 0.4 % vol. oil	Prep ⁿ of lotion & cream
Rose geranium oil		<u>Citroniel</u>	
		linalool	deodorant diuretic
		<u>β-citronolol</u>	
<u>Citroniaceae</u>		Citronyl acetate citronyl formate	Prep ⁿ of mosquito repellent
		α -Pinene myrcin	Treatment of burn, eczema & skin disease

<u>Star Anise</u>	dried fruit of Illicium verum	5-8 % vol. oil	Synthesis of shikimate
Baidyan		80-90 % <u>Anethole</u>	
	<u>Schisandraceae</u>	α -terpineole linalool Anisaldehyde	as spice
		Starch Mucilage Resin	Antibacterial

Resin Containing Drugs

9

Colophony

Acid resin

Rosin

Solid residue which is obtained by steam distillation of oleo-resin from species of Pinus.

Pinaceae

90% Abietic acid

Dilene

5-6% neutral

(Resene)

Vol. oil

Phenanthrene

12 methoxy abietic acid

Prep of cement, paints, varnishes etc.

Prep of ointment & Plasters

Athletes commonly rub it upon their hands or soles of their shoes to prevent slipping.

Cannabis

Resin alcohol

Chunas

Granja

Bhang

Hashish

Indian hemp

dried flowering & fruiting tops of Cannabis sativa

Cannabaceae

% of resinous material

differ from 2.5% to 20% depending on genetic factor & climatic condition

Cannabidiol Carboxylic acid

Tetrahydro Cannabinol

Cannabigerol

Cannabichromene

sedative, analgesic, narcotic

Psychotropic activity

Can cause addiction

It is not used as drug

→ phenol resin

Tolu Balsam	obtained by incision on stem of <u>Myroxylon balsamum</u>	70-80% Resin Benzoic a cinnamic a Balsamic a - 20% Eugenol Vanillin	antitussive Prep ⁿ of Lozenges → cough syrup → antiseptic
Balsamum toluatanum	<u>Leguminosae</u>	Benzyl benzoate Benzyl cinnamate ↓ <u>Toluenesitannols</u>	→ expectorant
Peru Balsam	obtained from stem of <u>Myroxylon perei</u>	Balsamic ester 50-66% ↓ Benzyl benzoate Benzyl cinnamate → free cinnamic a Vanillin	→ Prep ⁿ of <u>ointments</u> for treatment of <u>scabies</u>
Balsamum Peruianum	<u>Leguminosae</u>		
Benzoin	Balsamic resin obtained from incised stem of <u>Styrax benzoin</u>	23% free balsamic a 70-80% Resin cinnamic a → Siamnesinic a → Sumatresinic a ↓ Styrac Vanillin ↓ esters of <u>oleonic a</u>	Antiseptic → healing agent → Compound Benzoin tincture
<u>Loban</u>			
<u>Sumatru benzoin</u>	<u>Styracaceae</u>		

Siam Benzoin	incised stem of styrax tonkinensis	Coniferyl Benzoate ↓ 10% ↓ 20%	→ mild disinfectant
	Styracaceae	crystalline amorphous	→ Perfumery
		→ Cinnamyl Benzoate	→ Cosmetics
		→ 10% free Benzoic a	
		→ Sianesinolic a	
		→ less amt of	
		Cinnamic a	
Ginger	dried or fresh rhizomes of Zingiber officinalis	1.2% Vol. oil	→ stomachic
Soonth		6-8% Resin	→ flavour of carbonated beverages
		40-60% Starch	
	Zingiberaceae	5-10% Inorganic material	→ antiemetic
			antitumor
		monoterpene	antibacterial
		↓	antifungal
		β-Phellandrene	or protective
		cineol	anti arthritis
		sesquiterpene	anti inflammatory
		↓	
		α-zingiberene	→ as spice
		α-curcumene	
		Phenolic ketons	

Asafoetida	obtained from roots & rhizomes of <i>Fenule foetida</i>	[Resin] → 40-64 % Asaresene A Asaresinol Farnesinol A Farnesiferol A Farnesiferol B Farnesiferol C Fenulic a esters of fenulic a	Camminal gastro, nervous disorders
- Hing			
- Devil's dung	<u>Umbeliferaceae</u>		
		[Vol. oil] → 10-17 %	
		[Gum] 25 %	
		Sulphur → 17-18 %	
	[Impurity] (Ash)	→ Pinene → Sulphide Compound	
	1.5 - 10 % Inorganic material	Di Tri Tetra Poly	

Turmeric	dried rhizomes of <i>Curcuma longa</i>	5 % [Vol. oil]	→ as spice
Indian Saffron		[Resin] [Starch]	→ dye for food
<u>Haldi</u>	<i>Curcuma domestica</i>	Colouring matter ↓ (Curcuminoids) ↓ Curcumin I Curcumin II demethoxy Curcumin bisdemethoxy Curcumin	→ Identification of Biotic → Indicator for A-B tit

		monoterpeneoid sesquiterpeneoid Curcumin α -pinene	→ Hypocholesteremic → anti-rheumatic
Vidang	dried ripe fruits of Embelia nibe	2% vol. oil tannins	→ Prep ⁿ of gripe water.
clewing nuts	Mysinaceae	Embelin	→ neurominetic activity
anti- anthelmintic		Vilangin ↓ dimer of embelin	→ antianalgesic
		Quercitol	→ as oral contraceptives
Myrrh	stem of Commiphora	Resin ↓ 25-35%	→ astringent disinfectant
<u>Hinebol</u>	malmel		→ perfume → mouthwash
	Burseraceae		→ uterine stimulant
		ether soluble part resin a (α -B- γ Commiphoric a)	
		ether insoluble α , β -Hemabomyrrholic a	
		α , β hemabomyrrholic (α , β Commiphoric ester)	
Vol. oil	→ Eugenol pinene limonene Cumminic aldehyde	Gum ↓ 57% Glucic acid ↓ 18% Protein 64% Carb.	
		Impurity → 3-4%	

Guggul

devadupa

Scented

Bdellium

obtained by making incision at basal part of stem bark of Commiphora waghitti

Resin

→ not contain benzoic a cinnemic a

→ used in rheumatic arthritis

so not Balsam

Hypocholesterol

Gum-resin

→ It is more toxic of body

Burseraceae

- Steroids
- diterpenoids

→ fat wt. loss

monoterpene

Guggulusterol - I

II

III

IV

V

myricene
Caryophyllene

Guggulusterol E

Guggulusterol Z

→ Kanchan
guggul

anti cancer activity

Salai Guggul

Boswellia serrata

Burseraceae

Vol. oil → 8-9 %

→ same as guggul

Gum

→ 20-23 %

→ arabinose
xylose

→ anti-inflammatory

Resin

→ 55 %

Boswellic a

→ for treatment of Rheumatoid arthritis

Sesquiterpene alcohol

Thujone

α-Pinene

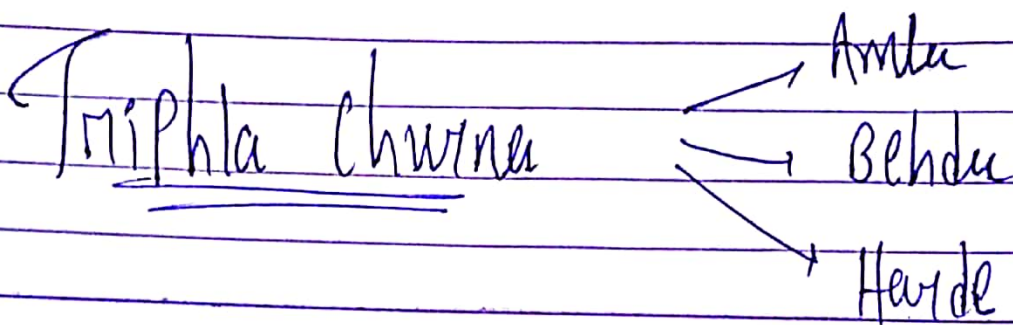
Phellandrene

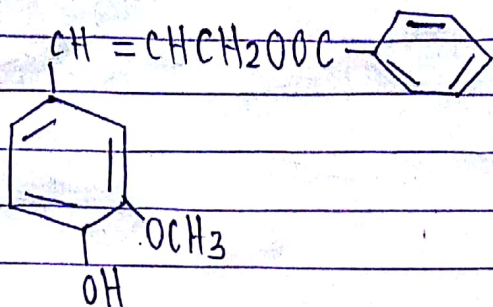
→ oxidizing enzyme

Nishoth	Black dried roots & stems of <i>Ipomoea</i> <i>turpentum</i>	7-8 % glycosidal nesin	→ Pungitive
Indian Talel		Glycosidal nesis	
<u>Nashotay</u>	<u>Convolvulaceae</u>	↙ ↘	
<u>Turpeth</u> root	white <i>Marsdenia</i> <i>tenuicissima</i> <u>Asclepiadaceae</u>	alcohol soluble nesin ↓ Contains...	<u>Glycan</u> ↓ 2 molecule of glucose + 1 molecule of <u>Rhamnose</u>
		5-glycosidic turpethinic a	
		Turpethinic a	
		↓	
		- Jalapinic a	
		- Oleiculinic a	
		- 3,12 dihydroxy	Palmitic a
		- 4,12 dihydroxy	Pentadecanoic a
		- 4,12 dihydroxy	Palmitic a
Capsicum	dried ripe fruits of <i>Capsicum</i> <i>annuum</i>	oleonesin fixed oil → 4-16 % red vol. oil proteins ascorbic a Thiamine Carotenoids	→ Counter Irritant → headache → migraine → neuralgia → stomachic → spice
Mareru Red Peppers			
Cayenne Pepper	<u>Solanaceae</u>	Capsicum	

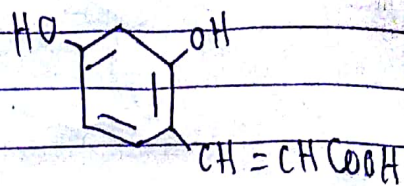
Common uses of vol. oil's drug

- Stimulant
- Expectorant
- Carminative
- Aromatic
- Flavouring agent / as spice



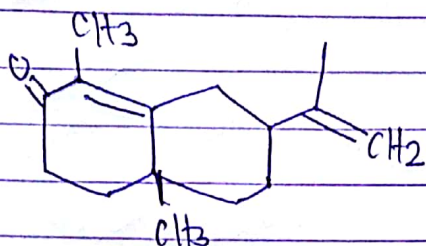


Coniferyl Benzoate

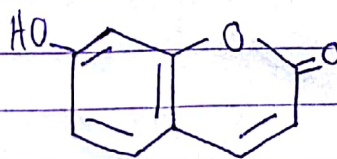


Umbelliferone

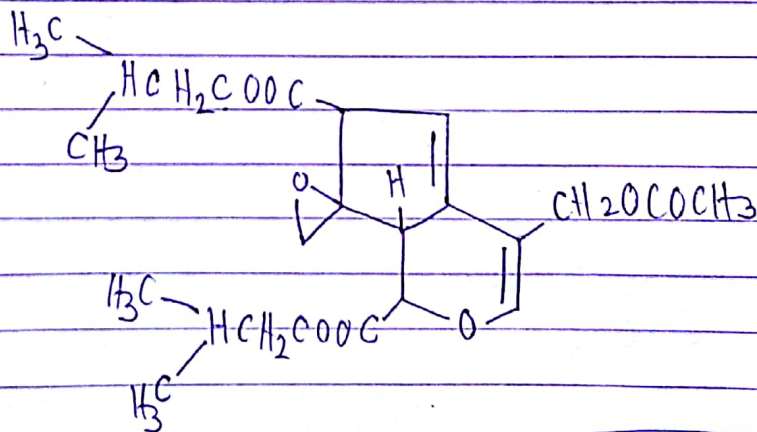
or
dihydroxy cinnamic acid



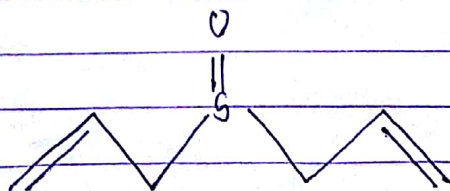
α -Cyperene



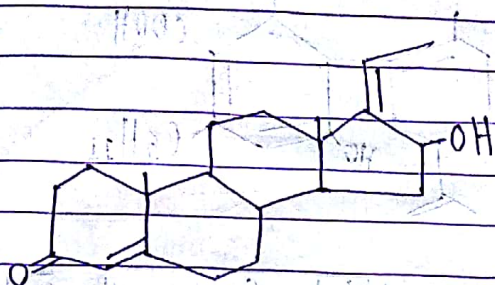
Umbelliferone



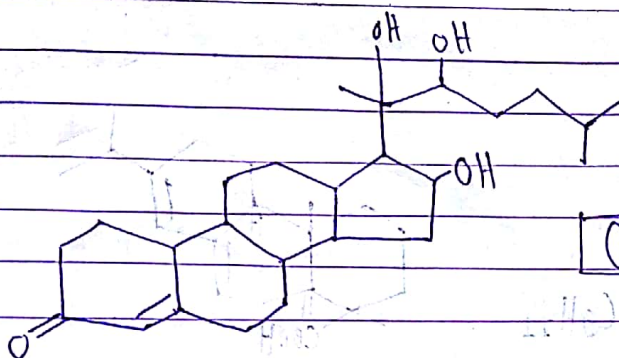
Valerolactone / Valtrate



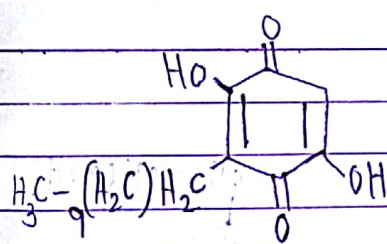
Allicin



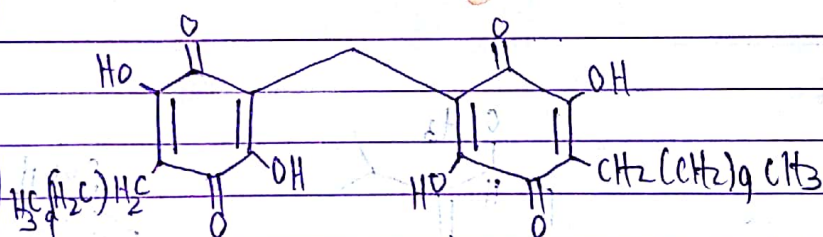
Gruggulsterene 2



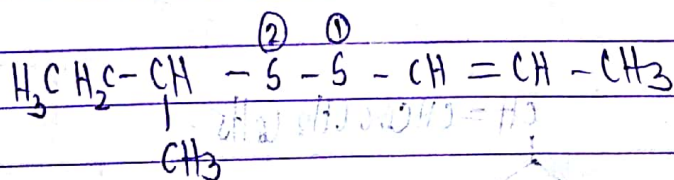
Gruggulsterole



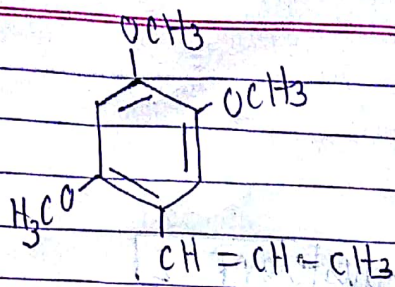
Embelin



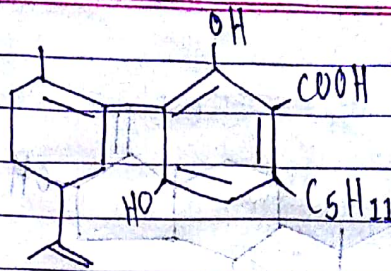
Vilangin → dimer of Embelin



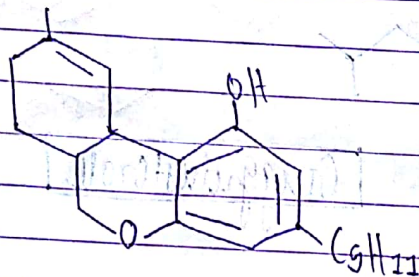
[2 butyl - 1 propenyl] disulphide



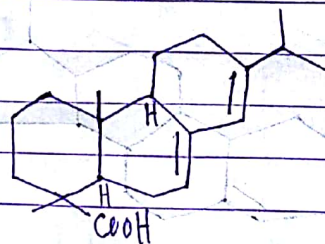
β -ciscreme



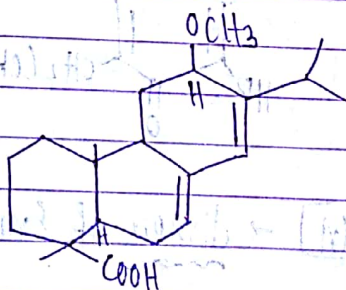
Cannabidiol Carboxylic acid



Tetrahydro Cannabidiol



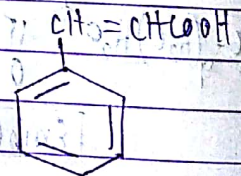
Abietic acid



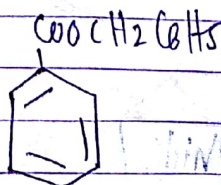
12-methoxy abietic acid



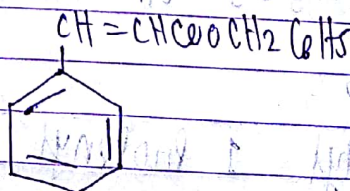
Benzoic acid



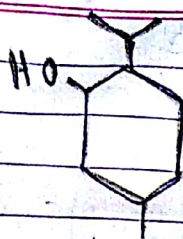
cinnamic acid



Benzyl Benzoate



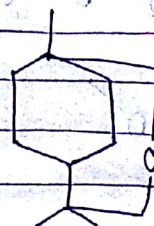
Benzyl cinnamate



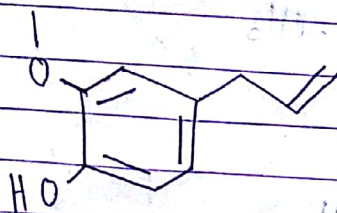
Menthol



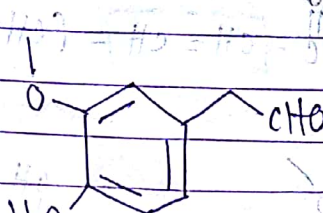
Pulegone



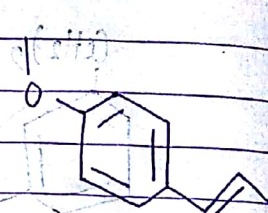
Cineole



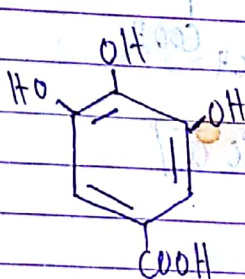
Eugenol



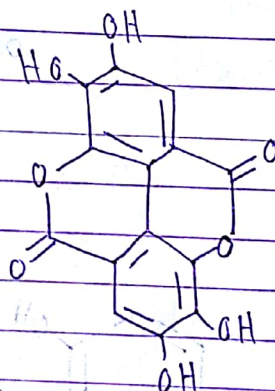
Vanillin



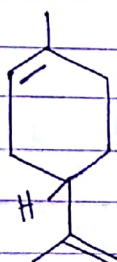
Anethole



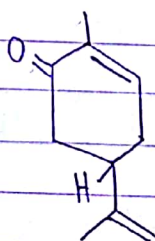
Gallic acid



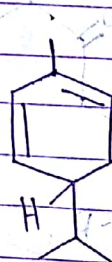
Ellagic acid



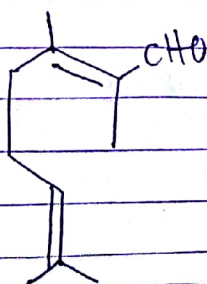
Limonene



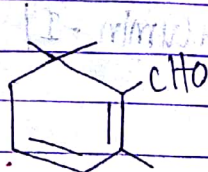
Camphor



α -Phellandrene



Citral



Safranal