

Annexture

Broad Spectrum Antiviral prophylactic Medicine of – Composition of the drug:

The drug contains four ingredients which are (1) Aloe Vera (2) Commiphora Myrrh (3) Crocus Sativus (Saffron) (4) Rose (Rosarubinggionosa). The preparation of drug includes Aleo Vera 2mg, Commiphoramyrhh 1 mg, Saffron 1mg, thus each tablet weighs 4 mg (using binding agent). The dosage prescribed would be 1 tablets each in the morning and evening along with 5 ml of rose extract for person above the age of 14 years. Whereas 1 tab in the morning along with 2 ml rose extract for child between age of 5 to 13 years. The dosage prescribed is for a period of 7 days.

Indication: To develop the immunity against broad spectrum viruses.

Contraindication: Pregnancy and during menses.

Details of the Drug along with molecules:

1) ALOE

Scientific Name:Aloe Vera

Family: Asphodelaceae

Kingdom: Plantae

Order: Asparagales

Rank: Species

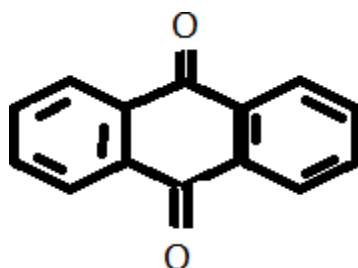
Higher Classification: Aloes

Plants of the genus Aloe L are known to be rich in Secondary metabolites such as

- (A) Anthraquinones
- (B) Anthrones
- (C) Chromones
- (D) Coumarins
- (F) Flavonoids
- (G) Phytosterois
- (H) Pyrans and Pyrones

(A) **Anthraquinones:** Commonly called as anthracenedione or dioxoanthraceneswith formula

$C_{14}H_8O_2$. Molar mass.208.216g.mol



Appearance: yellow solid.

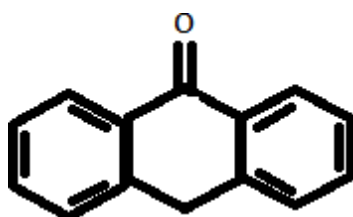
Derivatives of anthraquinone include many important drugs (collectively called anthracenedione) they include

- (a) laxatives, such as dentron, emodium, and aloe emodin and some of the sennaglycosides.
- (b) antimalarials such as “rufigallo”.
- (c) antineoplastics, used in the treatment of cancers, such as anitoxantrone, pixantrone, and the anthracyclines.

(B) Anthrones:

Molecular formula. C₁₄H₁₀O.

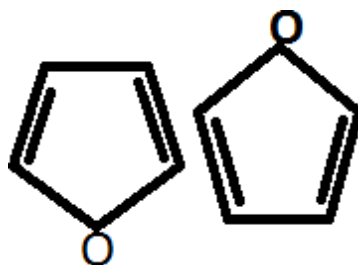
Structure:



Derivatives of anthrone are used in pharmacy as laxative, they stimulate the motion of the colon and reduce water re-absorption.

Furan.

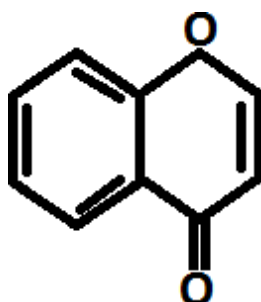
Formula : C₄ H₄ O.



Furan based substituted compounds showed very promising biomaterials such as anti-microbials anticancer, anti-hyperglycemic analgesics. [ref;Indo-American Journal of Pharmaceutical Research].

(C) : Chromones:

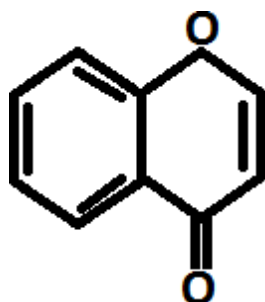
Chemical formula: C₉ H₆ O₂.



In medicine, this molecule is used to treat asthma, allergic reactions, of the eye and nose, as well as other mast

cell reactions. For lowering cholesterol and, possibly otherwise favorably affecting lipids.

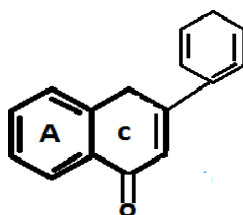
(D) Coumarin:



Coumarin type drugs: this medication is a blood thinner used to keep blood flowing smoothly and prevent the formation of blood clots.

(E) Flavonoids

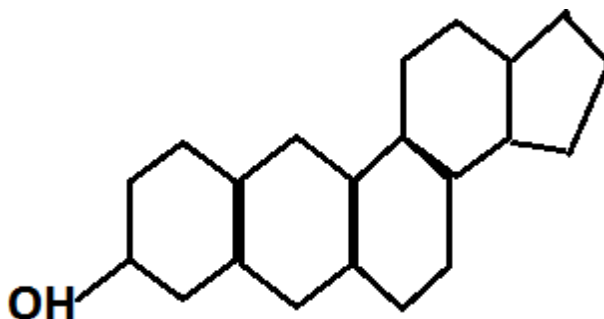
Structural Formula : C₆– C₃ - C₆



Chemically flavonoid have the general structure of a 15-carbon skeleton, which consist of two phenyl rings (A & B) and heterocyclic ring (C), this carbon structure can be abbreviated as C₆-C₃-C₆.

Flavonoid have been shown to have wide range of biological and pharmacological activities in vitro studies. Examples include anti-allergic, anti-inflammatory, antioxidants, anti-microbial (antibacterial, anti-fungal, and antiviral).

(G) Phytosterols:



Role in biochemistry.

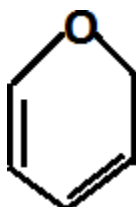
Sterols and related compounds play essential role in the physiology of eukaryotic organisms.

Medicinal uses:

Phytosterols, produce health benefits in animals/humans such as reduction of cholesterol levels with decreased risk of coronary heart diseases, anti- inflammatory activities, induction of apoptosis in cancer cells.

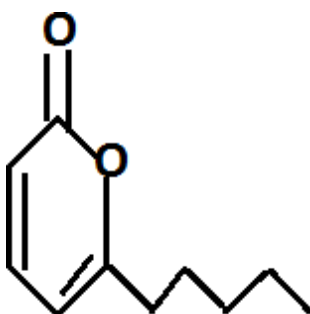
(H) Pyran

Formula : C₅ H₆ O.



This compound is used for the treatment of dental infections, abscesses and infected wounds, particularly those caused by gram-positive organisms such as staphylococcus species.

PYRONE.



Pyrones or pyranones are a class of heterocyclic chemical compounds. They contain an unsaturated six membered ring containing one oxygen atom and ketone functional group.

Drug: Commiphora Myrrh:

Binominal name: Commiphora Myrrh Family:

Burseraceae

Species: C. Myrrh

Genus: Commiphora

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Clade: Eudicots Clade:

Rosids

Common myrrh, or gum myrrh is a tree in the Burseraceae family. It is one of the primary trees used in the production of myrrh, a resin made from dried tree sap.

The organic and inorganic composition of the myrrh gum resin has been investigated using gas

chromatography-mass spectrometry (GC–MS) and inductively coupled plasma-mass spectrometry (ICP–MS). Analysis executed by ICP-MS reveals the presence of various inorganic elements in significant amount in the myrrh resin. The elements that were found to be present in large amounts include calcium, magnesium, aluminum, phosphorus, chlorine, chromium, bromine and scandium. The important organic constituents identified in the myrrh ethanolic extract include limonene, curzerene, germacrene B, isocerinenine, myrcenol, beta selinene.

Table 1. Organic constituents in ethanolic extract of myrrh resin (from *Commiphora myrrha*) estimated by GC–MS

Sl. no	Compound name	RT	Area	Height	N area %	Area %
1	R(+)-Limonene	11.5	54,939	1,182,802	0.21	0.13
2	(-)-Elema-1,3,11(13)-trien- 12-ol	12.3	386,465	8,658,952	1.47	0.95
3	2-Methyl-6-methylene-2,7- octadienal	12.7	36,928	786,863	0.14	0.09
4	Cis,cis,trans-3,3,6,6,9,9-hexamethyl-tetracyclo [6.1.0.0(2,4).0(5,7)]nonane	13.5	191,332	4,192,220	0.73	0.47
5	Curzerene	13.7	2,872,761	63,333,412	10.90	7.05
6	Germacrene B	14.5	299,141	6,586,507	1.13	0.73
7	Isosericenine	14.7	337,138	7,574,696	1.28	0.83
8	3-[(E)-2-phenyl-1-propenyl]cyclohexanone	15.4	26,362,042	419,107,232	100	64.66
9	2,5,8-trimethyl-1-nonen-3- YN-5-ol	15.5	5,128,403	119,854,000	19.45	12.58
10	Beta selinene	15.7	478,044	6,710,925	1.81	1.17
11	(-)-(1R,2S)-2,3-epoxy-2-(methoxymethyl)-6,6-dimethylbicyclo[3.1.1]heptane	16.2	2,978,635	65,821,332	11.30	7.31
12	Spathulenol	16.7	79,499	1,672,474	0.30	0.19
13	1-deoxycapsidiol	17.4	115,297	2,529,968	0.44	0.28

14	Ethanone,1-(6,10,10-trimethylspiro[4.5]deca-6,8-dien-2-yl)-(2R-trans)-	17.5	134,501	2,814,635	0.51	0.33
15	Bicyclo[3.1.1]hept-2-ene-2-carboxaldehyde,6,6-dimethyl-(1S)-	18.1	480,421	10,103,863	1.82	1.18
16	2-methylen-3-methyl-3-(4-hydroxymethyl-3-pentenyl)-bicyclo[2.2.2]oct-5-ene	18.2	5153	133,641	0.02	0.01
17	(-)-caryophyllene oxide	18.6	23,502	437,846	0.09	0.06
18	4-[2'-methyl-5'-(2"-methyl-2"-propen-1"-yl)-2'-cyclopenten-1'-yliden]butan-2-one	18.8	284,155	5,131,052	1.08	0.70
19	Oxalic acid, hexyl 2-methylphenyl ester	19.5	14,169	180,253	0.11	0.07
20	2-(2-hydroxy-2-methyl-2-phenylethyl)-3-methyl	19.7	12,692	223,798	0.05	0.03

Sl. no	Compound name	RT	Area	Height	N area %	Area %
21	3-methyl-1-(4-methylphenyl)-1-phenyl-1,2-butanediol	20.2	128,968	1,455,205	0.49	0.32
22	2,8-decadiene	20.6	15,576	164,973	0.06	0.04
23	10-isopropyl-7-methyl-bicyclo(4.4.0)dec-1-en-3-one	20.9	31,694	501,287	0.12	0.08
24	(-)-(R)-ipsdienol	21.4	37,608	452,066	0.14	0.09
25	2-(2-hydroxy-propyl)-3-one-[4,5]-spirodec-1-ene	22.1	13,892	126,518	0.05	0.03
26	2,3,6,7-tetramethyl-1,4,4.alpha,5,8,8a beta,9 beta,9a alpha,10 beta,10a beta-decahydroanthracene	22.3	10,021	153,213	0.01	0.01
27	Myrcenol	22.9	38,324	608,396	0.15	0.09

Table 2. Inorganic constituents in myrrh resin (from *Commiphora myrrha*) estimated by ICP-MS.

S. no.	Element name (symbol)	Level of element (ppm of myrrh resin)	S. no.	Element name (symbol)	Level of element (ppm of myrrh resin)
1.	Lithium (Li)	0.0173	32.	Rhodium (Rh)	0.0159
2.	Beryllium (Be)	0.0028	33.	Palladium (Pd)	0.0285
3.	Boron (B)	0.1758	34.	Silver (Ag)	0.0243
4.	Sodium (Na)	0.0943	35.	Cadmium (Cd)	0.0092
5.	Magnesium (Mg)	1.6269	36.	Tin (Sn)	0.0118
6.	Aluminum (Al)	11.5583	37.	Antimony (Sb)	0.0213
7.	Phosphorus (P)	99.8714	38.	Tellurium (Te)	0.0215
8.	Chlorine (Cl)	19.4685	39.	Iodine (I)	0.0735
9.	Potassium (K)	0.8781	40.	Cesium (Cs)	0.0038
10.	Calcium (Ca)	183.3582	41.	Barium (Ba)	0.0032
11.	Scandium (Sc)	17.3240	42.	Lanthanum (La)	0.0020
12.	Titanium (Ti)	1.2048	43.	Cerium (Ce)	0.0014
13.	Vanadium (V)	1.9019	44.	Praseodymium(Pr)	0.0028
14.	Chromium (Cr)	11.4872	45.	Neodymium (Nd)	0.0048
15.	Manganese (Mn)	0.5995	46.	Samarium (Sm)	0.0094
16.	Iron (Fe)	0.0407	47.	Europium (Eu)	0.0032
17.	Cobalt (Co)	0.0708	48.	Gadolinium (Gd)	0.0022
18.	Nickel (Ni)	0.3003	49.	Terbium (Tb)	0.0008
19.	Copper (Cu)	0.1118	50.	Dysprosium (Dy)	0.0026
20.	Zinc (Zn)	0.571	51.	Holmium (Ho)	0.0026
21.	Gallium (Ga)	0.2176	52.	Erbium (Er)	0.0022
22.	Germanium (Ge)	0.0058	53.	Thulium (Tm)	0.0002
23.	Arsenic (As)	0.8136	54.	Ytterbium (Yb)	0.0018
24.	Selenium (Se)	1.4127	55.	Hafnium (Hf)	0.0004

25.	Rubidium (Rb)	0.0157	56.	Tantalum (Ta)	0.0002
26.	Strontium (Sr)	0.0185	57.	Rhenium (Re)	0.0012
27.	Yttrium (Y)	0.0145	58.	Iridium (Ir)	0.0018
28.	Zirconium (Zr)	0.0185	59.	Platinum (Pt)	0.003
29.	Niobium (Nb)	0.0211	60.	Gold (Au)	0.0064
30.	Molybdenum(Mo)	0.0179	61.	Mercury (Hg)	0.0225

Commiphora myrrha have antibacterial and anti fungal activities and were rich in compounds that play important role in therapy Commiphora shows high antiviral activity towards NDV [**Newcastle Disease (ND)**].

Drug:SAFRON

Saffron contained more than 150 volatile and several nonvolatile compounds, approximately 40–50 Constituents have already been identified. It contained apocarotenoid glycosides: in particular crocin (crocin- betadigentiobioside), colored intensive yellow orange; picrocrocin (glycosidic bitter principle, up to 4%): the apocarotenoids and picrocrocin were presumably breakdown products of a carotenoid-digentiobioside-diglucoside (protocrocin); volatile oil (0.4 to 1.3%): [(4,5-dehydro-betacyclocitral (safranal), 4-hydroxy-beta- cyclocitral (breakdown products of the picrocrocin)]; carotenoids: lycopene, alpha-, beta-, gamma-carotene; fatty oil and starch.

The previous pharmacological studies revealed that saffron possessed antidepressant, anticonvulsant, anti anxiety, memory improvement, for the treatment of tremor and morphine-withdrawal Syndrome, anti diabetic, antioxidant, dermatological, immunological, cardiovascular, respiratory, Reproductive, gastrointestinal, smooth muscle relaxation, anticancer, anti parasitic, anti- inflammatory, Analgesic, protective (hepatic, renal, CNS) and many other pharmacological effects.