

# Dr. Duke's Phytochemical and Ethnobotanical Databases

---

## Chemicals and their Biological Activities in: *Rosmarinus officinalis* L. (Lamiaceae) -- Rosemary

---

### Chemicals

**(+)-LIMONENE** *Plant* 16 - 76 ppm

No activity reported.

**(E)-BETA-OCIMENE** *Shoot* 380 ppm;

No activity reported.

**(Z)-BETA-OCIMENE** *Shoot* 75 ppm;

No activity reported.

**1,8-CINEOLE** *Plant* 8,125 ppm;

(-)-Chronotropic 87 nl/ml; (-)-Inotropic; Acaricide  $LC_{100}=6\ \mu M$ ; Allelopathic; Allergenic; Anesthetic; Anthelmintic; Antiacetylcholinesterase  $IC_{50}=41\ \mu g/ml$ ; Antiallergic; Antibacterial 50 ppm; Antibronchitic; Anticariogenic; Anticatarrh; Anticholinesterase  $IC_{50}=50-70$ ; Antifatigue; Antihalitosis; Antiinflammatory; Antilaryngitic; Antinociceptive; Antipharyngitic; Antiplaque; Antirheumatic; Antirhinitic; Antiseptic; Antisinusitic; Antispasmodic; Antistaphylococcic 50 ppm; Antitussive; Antiulcer; Candidicide; Carcinogenic; Choleric; CNS-Stimulant; Convulsant; Counterirritant; Cytochrome-P450-Inducer; Decongestant; Degranulant 0.3 ul/ml; Dentifrice; Edemagenic inj; Expectorant; FLavor FEMA 1-200; Fungicide; Gastroprotective; Gram(+)icide; Gram(-)icide; Hepatotonic; Herbicide  $IC_{50}=78\ \mu M$ ; Hypotensive; Inflammatory inj; Insectifuge; Irritant; Myorelaxant; Nematicide; Neurotoxic; P450-Inducer; Pediculicide 2.3 x pyrethrin; Perfume; Pesticide; Rubefacient; Secretagogue; Sedative; Spasmogenic; Surfactant; Testosterone-Hydroxylase-Inducer; Transdermal; Trichomonicide  $LD_{100}=1,000\ \mu g/ml$

**1-OCTEN-3-OL** *Plant*:

No activity reported.

**19-ALPHA-HYDROXYURSOLIC-ACID** *Plant*:

No activity reported.

**2-BETA-HYDROXYOLEANOLIC-ACID** *Plant*:

No activity reported.

**3,5,5-TRIMETHYLHEXAN-1-OL** *Plant* 28 - 133 ppm

No activity reported.

**3-BETA-HYDROXYUREA-12,20(30)-DIEN-17-ON-ACID *Plant:***

No activity reported.

**3-HEXANONE *Plant 74 - 351 ppm***

No activity reported.

**3-METHYL-BUTAN-1-OL *Resin, Exudate, Sap:***

No activity reported.

**3-O-ACETYLOLEANOLIC-ACID *Shoot 11 ppm;***

Antiinflammatory

**3-O-ACETYLRURSOLIC-ACID *Shoot 11 ppm;***

No activity reported.

**3-OCTANOL *Plant 4 - 19 ppm***

FLavor *FEMA*; Perfumery

**3-OCTANONE *Plant 20 - 40 ppm***

No activity reported.

**4-HYDROXYBENZOYL-GLUCOSIDE *Leaf:***

No activity reported.

**4-TERPINENYL-ACETATE *Leaf 12 - 110 ppm***

No activity reported.

**5-HYDROXY-4',7-DIMETHOXYFLAVONE *Plant:***

No activity reported.

**6-METHOXY-GENKWANIN *Plant:***

No activity reported.

**6-METHOXY-LUTEOLIN-7-GLUCOSIDE *Plant:***

No activity reported.

**6-METHOXYLUTEOLIN *Plant:***

No activity reported.

**6-METHOXYLUTEOLIN-7-METHYL-ETHER *Plant:***

No activity reported.

**7-ETHOXY-ROSMANOL *Leaf:***

No activity reported.

**7-METHOXY-ROSMANOL *Shoot 18 ppm;***

No activity reported.

**ACETIC-ACID *Resin, Exudate, Sap:***

Acidulant; Antibacterial 5,000 ppm; Antiotitic; Antisalmonella; Antivaginitic 1-2%;  
Expectorant; Fungicide; Keratitigenic; Mucolytic; Osteolytic; Perfumery *FEMA* 6,000-  
40,000 ppm; Pesticide; Protisticide; Spermicide; Ulcerogenic; Verrucolytic

**ALLO-AROMADENDRENE** *Leaf* 4 - 5 ppm

No activity reported.

**ALPHA-AMORPHENE** *Plant* 70 - 665 ppm

No activity reported.

**ALPHA-AMYRENONE** *Shoot* 30 ppm;

No activity reported.

**ALPHA-AMYRIN** *Plant: Shoot* 13 ppm;

Analgesic; Antiedemic  $IC_{43}=40$  mg/kg ipr rat; Antiinflammatory  $IC_{71}=1,000$  ppm orl;  
Antinociceptive; Antitumor; Antiulcer; Cytotoxic 50-400; Gastroprotective;  
Hepatoprotective; Insectifuge

**ALPHA-COPAENE** *Leaf* 2 - 4 ppm *Resin, Exudate, Sap:*

No activity reported.

**ALPHA-FENCHENE** *Plant:*

No activity reported.

**ALPHA-FENCHOL** *Leaf tr;*

No activity reported.

**ALPHA-FENCHYL-ACETATE** *Plant* 20 - 95 ppm

No activity reported.

**ALPHA-FENCHYL-ALCOHOL** *Plant* 28 - 133 ppm

No activity reported.

**ALPHA-HUMULENE** *Shoot* 725 ppm;

Antitumor; Perfumery

**ALPHA-HYDROXYHYDROCAFFEIC-ACID** *Plant:*

No activity reported.

**ALPHA-MUROLENE** *Leaf* 2 - 12 ppm *Plant:*

No activity reported.

**ALPHA-PHELLANDRENE** *Plant* 133 ppm;

Antibacterial; Antistaphylococcic; Dermal; Emetic; FLavor *FEMA* 10-130; Fungicide;  
Insectiphile; Irritant; Laxative; Perfumery; Pesticide

**ALPHA-PINENE** *Plant* 235 - 4,750 ppm

Allelochemic; Allergenic; Antiacne; Antibacterial; Antifeedant; Antiflu;  
Antiinflammatory 500 mg/kg; Antipneumonic; Antiseptic; Antispasmodic;  
Antistaphylococcic; Antiviral; Cancer-Preventive; Coleoptophile; Expectorant; FLavor  
*FEMA* 15-150; Herbicide  $IC_{50}=30$  uM; Insecticide 0.82 uM/fly; Insectifuge 50 ppm;  
Insectiphile; Irritant; P450-2B1-Inhibitor  $IC_{50}=0.087$  uM; Perfumery; Pesticide;  
Sedative; Spasmogenic; Tranquilizer; Transdermal

**ALPHA-SELINENE** *Plant:*

Antimalarial  $IC_{50}=>50$  ug/ml; Antiplasmodial; Perfumery

**ALPHA-TERPINENE Plant 4 - 555 ppm**

Acaricide; ACE-Inhibitor 100 ug/ml (weak activity); Aldose-Reductase-Inhibitor 100 ug/ml; Antiacetylcholinesterase  $IC_{50}=1.0$  mM; Antinitrosaminic; Antispasmodic; Flavor FEMA 1-40; Insecticide 0.86 uM/fly; Insectifuge; P450-2B1-Inhibitor  $IC_{50}=0.76$  uM; Perfumery; Pesticide; Spasmogenic

**ALPHA-TERPINENYL-ACETATE Leaf 5 - 6 ppm**

No activity reported.

**ALPHA-TERPINEOL Plant 24 - 1,555 ppm**

ACE-Inhibitor 100 ug/ml (weak activity); Aldose-Reductase-Inhibitor 100 ug/ml; Allelopathic; Antiacne; Antibacterial  $MIC=800-1,600$  ug/ml; Anticancer; Anticariogenic; Antiinflammatory; Antiproliferant; Antiseptic; Cicatrizant  $ED_{50}=240$  ug/g mus; Flavor FEMA 5-40; Insecticide 1.29 uM/fly; Interleukin-6-Inhibitor; Mosquitofuge > Deet; Motor-Depressant; Nematicide  $MLC=1$  mg/ml; Perfumery; Pesticide; Sedative; Termiticide  $IC_{100}=5$  mg/g; Transdermal; Vulnerary  $ED_{50}=240$  ug/g mus

**ALPHA-THUJENE Plant 1 - 475 ppm**

No activity reported.

**ALPHA-THUJONE Plant 84 - 399 ppm**

Abortifacient; Antibacterial; Emmenagogue; Insecticide; Larvicide; Pesticide

**APIGENIN Plant:**

11B-HSD-Inhibitor; AntiADD; Antiaflatoxin  $IC_{50}=2.57$  ppm  $IC_{50}=9.52$  uM; Antiaggregant; Antiaging; Antiallergic; Antiangiogenic 4 uM; Antiarrhythmic; Antibacterial; Anticancer (Lung); Anticomplementary; Antidermatitic; Antiestrogenic; Antiherpetic 20-54 ug/ml; Antihistaminic  $IC_{50}=10-35$  uM; AntiHIV  $IC_{50}=143$  ug/ml  $IC_{72}=200$  ug/ml; Antiinflammatory = indomethacin  $IC_{65}=1,000$  uM; Antileukemic 20-50 uM; Antimelanomic 1-50 uM; Antimetastatic; Antimutagenic  $ID_{50}=0.55$  ug/ml  $ID_{50}=10-40$  nM; Antioxidant 1.5 x Vit. E  $IC_{28.5}=62.5$  ug/ml; Antiperistaltic; Antiproliferant 1-50 uM  $IC_{50}=155$  uM; Antispasmodic  $EC_{50}=1-5$  uM; Antistress 10 mg/kg; Antithyroid; Antitumor 1-50 uM; Antitumor (Breast); Antitumor (Lung); Antitumor (Skin); Antiviral 20-54 ug/ml; Anxiolytic 10 mg/kg; Apoptotic 12-60 uM; Aromatase-Inhibitor  $IC_{65}=1$  uM/l; Beta-Glucuronidase-Inhibitor  $IC_{50}=\sim 40$  uM; Calcium-Antagonist?; Cancer-Preventive; Choleric; CNS-Depressant; COX-1-Inhibitor  $IC_{65}=1,000$  uM; COX-2-Inhibitor <40 uM  $IC_{50}<15$  uM  $IC_{65}=1,000$  uM; Cyclooxygenase-Inhibitor; Cytochrome-P450-1A1-Inhibitor; Cytotoxic 1-50 uM  $IC_{50}=9.5$  uM  $IC_{88}=10$  ug/ml; Deiodinase-Inhibitor; Differentiator  $IC_{40}=40$  uM  $MIC=30$  uM; Diuretic; DNA-Protective; Estrogenic 16% genistein  $EC_{50}=0.1-25$  uM/l  $EC_{50}=1$  uM; HIF-1alpha-Inhibitor; Hyaluronidase-Inhibitor  $IC_{50}+=50-250$  uM; Hypotensive; ICAM-1-Inhibitor; IKK-Inhibitor; iNOS-Inhibitor  $IC_{50}<15$  uM; Inotropic; Interleukin-6-Inhibitor; MAO-Inhibitor; MAPK-Inhibitor; Musculotropic; Mutagenic; Myorelaxant; NADH-Oxidase-Inhibitor; NF-kB-Inhibitor; NO-Synthase-Inhibitor 5-50 uM; Nodulation-Signal; Ornithine-Decarboxylase-Inhibitor; P21-Inducer 10-70 uM; Pesticide; PKC-Inhibitor  $IC_{50}=10$  uM; Polyamine-Synthesis-Inhibitor; Progestational; Protein-Kinase-C-Inhibitor  $IC_{50}=10-40$  uM; PTK-Inhibitor 10-100 uM; Quinone-Reductase-Inducer 20 uM; Radioprotective; Sedative 30-100 mg/kg; Sunscreen; TNF-alpha-Inhibitor  $IC_{50}=3.27$  uM; Topoisomerase-I-Inhibitor; Topoisomerase-II-Inhibitor 50 ug/ml  $IC_{28}=18$  uM  $IC_{45}=180$  uM; Uterotrophic  $EC_{50}=0.1-25$  uM/l; Vasodilator; VEGF-Inhibitor  $IC_{50}=2-7$  uM; Xanthine-Oxidase-

Inhibitor  $0.36 \mu\text{M}$

**APIGENIN-7-GLUCOSIDE *Plant*:**

No activity reported.

**AR-CURCUMENE *Plant* 8 - 38 ppm**

Antirhinoviral  $IC_{50}=1,750?$ ; Antiulcer  $IC_{45}=100 \text{ mg/kg}$ ; Antiviral  $IC_{50}=1,750?$

**BENZYL-ALCOHOL *Plant* 7 - 32 ppm**

Allergenic; Anesthetic; Antiodontalgic; Antipruritic; Antiseptic; FLavor *Fema* 200-1,200; Fungicide; Pesticide; Sedative

**BETA-AMYRENONE *Shoot* 30 ppm;**

No activity reported.

**BETA-AMYRIN *Plant*. *Shoot* 13 ppm;**

Analgesic; Antiedemic  $IC_{27}=40 \text{ mg/kg ipr rat}$ ; Antiinflammatory; Antinociceptive; Antiulcer; Gastroprotective; Hepatoprotective; Larvicide; Mosquitocide

**BETA-CARYOPHYLLENE *Plant* 12 - 2,075 ppm *Shoot* 70 - 2,075 ppm**

No activity reported.

**BETA-ELEMENE *Shoot* 3 - 200 ppm**

Anticancer (Cervix); Antigliomic; Antiproliferant; Antitumor (Cervix); Apoptotic

**BETA-FENCHENE *Plant*:**

No activity reported.

**BETA-GURJUNENE *Leaf* 0.5 ppm;**

No activity reported.

**BETA-OCIMENE *Resin, Exudate, Sap*:**

No activity reported.

**BETA-PHELLANDRENE *Plant tr*;**

Expectorant; Fungicide; Perfumery

**BETA-PINENE *Plant* 17 - 1,425 ppm**

Allergenic; Antiinflammatory; Antiseptic; Antispasmodic; Candidicide; FLavor *FEMA* 15-600; Herbicide; Insectifuge; Irritant; Perfumery; Pesticide; Spasmogenic; Transdermal

**BETA-THUJONE *Plant* 11 - 209 ppm**

Abortifacient; Antibacterial; Emmenagogue; Insectifuge; Pesticide

**BETULIN *Plant*. *Shoot* 12.1 ppm;**

Anticarcinomic; Antifeedant; Antiflu; AntiHIV  $6.1 \mu\text{M}$ ; Antiinflammatory; Antitumor; Antiviral; Aphidifuge; Cytotoxic  $600 \text{ ppm}$   $8.6 \mu\text{M}$ ; Hypolipemic; Prostaglandin-Synthesis-Inhibitor  $IC_{50}=119 \mu\text{M}$ ; Topoisomerase-II-Inhibitor  $IC_{50}=38.6 \mu\text{M}$

**BETULINIC-ACID *Leaf*:**

Anthelmintic; Antibacterial; Anticancer; Anticarcinomic; Antiedemic; AntiHIV  $14.8 \mu\text{M}$

*EC50=2.0 ug/ml IC50=6.5 ug/ml*; Antiinflammatory; Antileukemic; Antimalarial *IC50=19-26 ug/ml*; Antimelanomic; Antinociceptive; Antiplasmodial; Antitumor; Antiviral *14.8 uM*; Apoptotic; Cytotoxic *16.4 uM 50-100 ppm*; Phospholipase-A2-Inhibitor; Prostaglandin-Synthesis-Inhibitor *200 ug/ml IC50=101 uM*

**BORNEOL Plant 12 - 4,237 ppm**

(-)-Chronotropic *29 ug/ml*; (-)-Inotropic; Allelochemic; Analgesic; Antiacetylcholine; Antibacterial *MIC=125-250 ug/ml*; Antibronchitic; Antiescherichic *MIC=125 ug/ml*; Antifeedant; Antiinflammatory; Antiotitic; Antipyretic; Antisalmonella; Antispasmodic *ED50=0.008 mg/ml*; Antistaphylococcic *MIC=250 ug/ml*; Antiyeast; Candidicide; Choleric; CNS-Stimulant; CNS-Toxic; FLavor *FEMA<1*; Fungicide; Hepatoprotective; Herbicide *IC50=470 mM IC50=470 uM*; Inhalant; Insect-Repellent; Insectifuge; Irritant; Myorelaxant; Nematicide *MLC=1 mg/ml*; Perfumery; Pesticide; Sedative; Tranquilizer

**BORNYL-ACETATE Plant 5,054 ppm;**

(-)-Chronotropic *933 nl/ml*; (-)-Inotropic; Antibacterial; Antifeedant; Antispasmodic *ED50=0.09 mg/ml*; Antiviral; Expectorant; FLavor *FEMA 70-80*; Insectifuge; Myorelaxant; Pesticide; Sedative

**BORNYLENE Plant:**

No activity reported.

**BUTAN-2-OL Resin, Exudate, Sap:**

No activity reported.

**CADALENE Plant:**

No activity reported.

**CAFFEIC-ACID Plant:**

Aldose-Reductase-Inhibitor *4 ug/ml (weak activity)*; Allergenic; Analgesic; Antiadenoviral; Antiaggregant; Antiaging; Antiatherogenic; Antibacterial; Anticancer; Anticarcinogenic; Antidepressant; Antiedemic; Antielastase *IC50=86 ug/ml (475 uM) IC50=93 um/l*; Antiescherichic; Antiflu; Antigonadotropic; Antihemolytic *25 uM*; Antihepatoadenomic *200 ppm diet orl mus*; Antihepatotoxic; Antiherpetic *50 ug/ml EC50=>50 ug/ml*; Antihistaminic; AntiHIV *EC50=200 ug/ml*; Antihypercholesterolemic; Antihyperthyroid; Antiinflammatory; AntiLegionella; Antileukemic; Antileukotriene; Antimelanogenic; Antimutagenic; Antinitrosaminic; Antiophidic; Antioxidant *1.3 x Vit. E 1/2 BHA 1/3 quercetin 30 mM 50 uM IC57=30 ppm*; Antiperoxidant *IC35=200 ug/ml IC50=44 uM IC85=100 ug/ml*; Antiproliferant; Antiprostaglandin; Antiradicular *1/3 quercetin 10 uM 30 mM IC50=32-35 uM*; Antiseptic; Antispasmodic *EC50=3.4-15 uM*; Antistaphylococcic; Antistomatitic; Antisunburn; Antithiamin; Antithyroid; Antitumor *200 ppm diet orl mus*; Antitumor (Skin); Antitumor-Promoter *IC42=10 uM*; Antiulcerogenic; Antivaccinia; Antiviral *IC50=62.5 ug/ml*; Anxiolytic; Calcium-Antagonist *IC50=1.2 uM rbt*; Cancer-Preventive; Carcinogenic *2% (diet)*; Chemopreventive; Cholagogue; Choleric; Clastogenic; CNS-Active; Co-carcinogenic; Collagen-Sparing; COX-2-Inhibitor *IC32=100 uM*; Cytoprotective; Cytotoxic *TC50=200 ug/ml*; Diuretic; DNA-Active; DNA-Protective; Fungicide *MIC=0.4 mg/ml*; Hepatocarcinogenic *400 ppm diet orl mus (in the absence of alcohol)*; Hepatoprotective; Hepatotropic; Histamine-Inhibitor; Immunostimulant; Insectifuge; Leukotriene-Inhibitor; Lipoxigenase-Inhibitor *IC27=5 mM IC50=62-148 uM*; Lyase-Inhibitor *IC50=94-164 uM*; Metal-Chelator; Ornithine-

Decarboxylase-Inhibitor; Pesticide; Prooxidant; Prostaglandigenic; Sedative 500 mg; Sunscreen  $IC_{50}=2.5$  mg/l  $IC_{91}=5$  mg/l  $IC_{98}=25$  mg/l; Tumorigenic; Vulnerary; Xanthine-Oxidase-Inhibitor  $IC_{50}=39.21$  uM

**CALACORENE Plant:**

No activity reported.

**CALAMENENE Plant 1 - 5 ppm**

No activity reported.

**CAMPHENE Plant 23 - 2,350 ppm**

Allelopathic; Antilithic?; Antioxidant; Expectorant; FLavor FEMA 15-175; Hypocholesterolemic?; Insectifuge; Pesticide; Spasmogenic

**CAMPHOR Plant 60 - 5,800 ppm**

Allelopathic; Analgesic; Anesthetic; Antiacne; Antidiarrheic 500 ug/ml; Antidysenteric; Antiemetic 100-200 mg man orl; Antifeedant  $IC_{50}=5,000$  ppm diet; Antifibrositic; Antineuralgic; Antipruritic; Antiseptic; Antispasmodic  $ED_{50}=0.075$  mg/ml; Cancer-Preventive; Carminative; CNS-Stimulant; Convulsant; Cosmetic; Counterirritant; Decongestant; Deliriant; Ecboic; Emetic; Epileptigenic; Expectorant; Fungicide  $ED_{50}=2.7$  mM; Herbicide  $IC_{50}=3.3-180$  mM; Insect-Repellent; Insectifuge; Irritant; Nematicide  $MLC=1$  mg/ml; Oculoirritant; P450-2B1-Inhibitor  $IC_{50}=7.89$  uM; Pesticide; Respirainhibitor; Respirastimulant; Rubefacient; Stimulant; Transdermal; Verrucolytic; Vibriocide 500 ug/ml

**CARNOSIC-ACID Plant:**

Antimutagenic; Antioxidant  $IC_{50}=0.81$  uM

**CARNOSOL Leaf 530 - 9,803 ppm**

5-Lipoxygenase-Inhibitor  $IC_{50}$  (uM)=2; Antibiotic; Antihepatotoxic; AntiHIV; Antiinflammatory; Antilipoperoxidant; Antimutagenic; Antioxidant; Antiradicular; Antitumor; Antitumor-Promoter; Cancer-Preventive; Candidicide; Cyclooxygenase-Inhibitor  $IC_{50}$  (uM) =16; Fungicide; Metal-Chelator; Ornithine-Decarboxylase-Inhibitor; Pesticide; Protease-Inhibitor; Quinone-Reductase-Inducer 100 mg/kg ipr rat

**CARVACROL Leaf 5 - 6 ppm Plant:**

Allergenic; Anesthetic; Anthelmintic; Antialzheimeran?; Antiatherosclerotic  $IC_{50}=5.53$  uM; Antibacterial MIC 170-290 MIC=39-625; Anticholinesterase?; Antidiuretic; Antiinflammatory  $IC_{50}=4$  uM; Antimelanomic  $IC_{50}=120$  uM/l; Antioxidant; Antioxidant (LDL)  $IC_{50}=5.53$  uM; Antiplaque MIC=39-625 ug/ml; Antiprostaglandin; Antiradicular 600 x thymol; Antiseptic 1.5 x phenol; Antispasmodic; Antistaphylococcic; Antistreptococcic; Antitussive; Candidicide 100-150 ug/ml MIC<0.1 ug/ml; Carminative; Cyclooxygenase-Inhibitor =indomethacin; Enterorelaxant; Expectorant; FLavor FEMA 10-125; Fungicide; Insectifuge; Irritant; Nematicide  $MLC=1$  mg/ml; Pesticide; Prostaglandin-Inhibitor; Tracheorelaxant; Trichomonicide  $LD_{100}=150$  ug/ml; Vermifuge

**CARVONE Plant 16 - 760 ppm**

Allergenic; Antiacetylcholinesterase  $IC_{50}=1.4-1.8$  mM; Antiproliferative; Antiseptic 1.5 x phenol; Cancer-Preventive; Candidistat; Carminative; CNS-Stimulant; FLavor FEMA 80-3,000; Fungistat; Insecticide; Insectifuge; Motor-Depressant; Nematicide  $MLC=1$  mg/ml; Perfumery; Pesticide; Sedative; Trichomonicide  $LD_{100}=300$  ug/ml;

Vermicide

**CARYOPHYLLENE Plant 16 - 340 ppm**

Aldose-Reductase-Inhibitor; Allergenic; Analgesic; Antiacne; Antiasthmatic; Antibacterial; Anticariogenic  $MIC=>1,600\text{ ug/ml}$ ; Antidermatitic; Antiedemic; Antifeedant 500 ppm; Antiinflammatory  $IC50=100\text{ uM}$ ; Antileishmanic; Antionychyotic; Antiproliferant; Antispasmodic; Antistaphylococcic; Antistreptococcic; Antitumor; Antiulcer; Candidicide; FLavor *FEMA 20-200*; Fungicide; Gastroprotective; Insectifuge; Irritant; Larvicide; Mosquitocide; Perfumery; Pesticide; Sedative; Termitifuge

**CARYOPHYLLENE-OXIDE Plant 75 ppm;**

Antiedemic; Antifeedant; Antiinflammatory; Antitumor; Calcium-Antagonist  $ED50=32\text{ uM gpg}$ ; Fungicide; Insecticide; Pesticide

**CHLOROGENIC-ACID Plant:**

Aldose-Reductase-Inhibitor  $IC50=1.8\text{ uM rat (strong activity)}$ ; Allelochemic; Allergenic; Analgesic; Antiatherosclerotic; Antibacterial; Anticancer (Colon); Anticancer (Forestomach); Anticancer (Liver); Anticancer (Skin); Anticarcinogenic; Antidiabetic; AntiEBV; Antifeedant; Antigenotoxic; Antigonadotropic; Antihemolytic  $10\text{ uM}$ ; Antihepatotoxic; Antiherpetic; Antihistaminic; AntiHIV; Antihypercholesterolemic; Antihyperthyroid; Antiinflammatory; AntiLegionella; Antileukotriene; Antimelanogenic; Antimutagenic; Antinitrosaminic; Antioxidant  $IC50=54.2\text{ uM}$   $IC53=200\text{ ppm}$   $IC80=12\text{ uM}$ ; Antiperoxidant  $IC50=36\text{ uM}$ ; Antipolio; Antiradicular  $10\text{ uM}$   $9\text{ x quercetin}$ ; Antiseptic; Antisunburn; Antithyroid; Antitumor; Antitumor (Colon); Antitumor (Forestomach); Antitumor (Liver); Antitumor (Skin); Antitumor-Promoter  $IC25=10\text{ uM}$ ; Antiulcer; Antiviral; Autotoxic; Cancer-Preventive; Cardioprotective; Chemopreventive; Cholagogue; Choloretic; Clastogenic; CNS-Active; CNS-Stimulant  $1/6\text{ Caffeine}$ ; Collagen-Sparing; Diuretic; Fungicide; Hepatoprotective; Histamine-Inhibitor; Hypoglycemic; Immunostimulant; Insectifuge; Interferonogenic; Juvabional; Larvostat; Leukotriene-Inhibitor; Lipxygenase-Inhibitor  $IC23=5\text{ mM}$ ; Metal-Chelator; NO-Genic; Ornithine-Decarboxylase-Inhibitor; Oviposition-Stimulant; Pesticide; Sunscreen; Sweetener; Vulnerary

**CINEOLE Plant 168 - 9,728 ppm**

No activity reported.

**CIRSILION Plant:**

No activity reported.

**CIRSIMARITRIN Shoot 16 ppm;**

No activity reported.

**CIS-ALPHA-BISABOLENE Plant 4 - 19 ppm**

No activity reported.

**CIS-BETA-TERPINEOL Plant 20 - 95 ppm**

No activity reported.

**CIS-MYRTENOL Leaf 11 - 17 ppm**

No activity reported.



**CIS-PINAN-3-ONE Leaf** 17 - 110 ppm

No activity reported.

**CIS-SABINENE-HYDRATE Leaf** 0.4 ppm; **Plant:**

No activity reported.

**CUBENENE Plant:**

No activity reported.

**DECA-TRANS-2,TRANS-4-DIEN-1-AL Resin, Exudate, Sap:**

No activity reported.

**DELTA-3-CARENE Plant** 330 ppm;

Allergenic?; Antibacterial; Antiinflammatory *ipr*; Dermatitigenic; FLavor *FEMA*;  
Insectifuge; Irritant; Pesticide

**DELTA-4-CARENE Leaf:**

No activity reported.

**DELTA-CADINENE Plant** 75 ppm;

Aldose-Reductase-Inhibitor; Antiacne; Antibacterial *MIC800 ug/ml*; Anticariogenic;  
Antistreptococcic; Cytochrome-P450-Inducer; P450-Inducer; Pesticide; Testosterone-  
Inducer

**DELTA-TERPINEOL Plant** 7 - 418 ppm

No activity reported.

**DIMETHYL-STYRENE Plant** 1 - 19 ppm

No activity reported.

**DIOSMETIN Plant:**

Aldose-Reductase-Inhibitor *IC17=10 uM*; Antimutagenic *IC50=10-40 nM*;  
Antirhinoviral; Antiviral; Cancer-Preventive

**DIOSMIN Leaf:**

Anticancer; Anticapillary-Fragility *300 mg/2x/day/woman*; Anticarcinogenic;  
Anticlastogen; AntiCVI; Anticytotoxic; Antiedemic *50-200 mg/kg/day 600 mg/kg rat*;  
Antihemorrhoidal *450 mg 2x/day x7days then 1x/day x2months*; Antihistaminic;  
Antiinflammatory *600 mg/kg rat*; Antileukotriene; Antimelanomic; Antimetastatic;  
Antimetrorrhagic; Antioxidant; Antiperoxidant; Antiproliferant; Antiprostaglandin;  
Antiradicular; Antithromboxane; Antiulcer; Chemopreventive; COMT-Inhibitor *200-  
400 mg/kg ip*; Cyclooxygenase-Inhibitor; Cytoprotective; Diuretic; Hypoglycemic;  
Lipoxygenase-Inhibitor; MDR-Inhibitor *100 uM*; P450-Inhibitor; Radioprotective;  
Venoprotective; Venotonic

**DIPENTENE Essential Oil:**

Allergenic; Antibacterial; Antiviral; Expectorant; Irritant; Pesticide; Sedative

**ELEMOL Plant** 7 - 32 ppm

Antiacetylcholinesterase *IC50=34 ug/ml*; Antiulcer

**EPI-ALPHA-AMYRIN Plant:**

No activity reported.

**EPI-ALPHA-BISABOLOL *Leaf* 3 ppm;**

No activity reported.

**EPIROSMANOL *Leaf* 26 ppm;**

No activity reported.

**ERIODICTIOL *Plant*:**

No activity reported.

**EUGENOL-METHYL-ETHER *Leaf* 5 - 7 ppm**

Cancer-Preventive; CNS-Depressant; DNA-Binder; Hypothermic; Myorelaxant

**FENCHONE *Plant* 250 ppm;**

Antialzheimeran?; Anticholinesterase; Counterirritant; FLavor *FEMA* 0.1-5; Perfumery; Secretolytic

**GAMMA-CADINENE *Leaf* 1 - 5 ppm *Plant*:**

No activity reported.

**GAMMA-EUDESOL *Plant* 7 - 32 ppm**

No activity reported.

**GAMMA-MUROLENE *Plant* 70 - 665 ppm**

No activity reported.

**GAMMA-MUROLLOL *Leaf* 1 ppm;**

No activity reported.

**GAMMA-TERPINENE *Plant* 4 - 400 ppm**

Acaricide; ACE-Inhibitor 100 ug/ml (*weak activity*); Aldose-Reductase-Inhibitor 100 ug/ml; Antiacetylcholinesterase *IC*<sub>23</sub>=1.2 mM; Antifeedant; Antioxidant; FLavor *FEMA* 1-40; Insectifuge; Irritant; Perfumery; Pesticide

**GENKWANIN *Leaf*:**

Antibacterial; Pesticide; Purgative

**GENKWANIN-4'-METHYL-ETHER *Plant*:**

No activity reported.

**GERANIOL *Plant* 50 - 370 ppm**

Allergenic; Anthelmintic; Antibacterial *MBC*=800 ug/ml *MIC*=400 ug/ml *MIC*=64 ug/ml; Anticancer (Pancreas) *IC*<sub>50</sub>=265 uM; Anticariogenic *MIC*=400 ug/ml; Antimelanomic *IC*<sub>50</sub>=150 uM/l; Antisalmonella *MIC*=400 ug/ml; Antiseptic 400-800 ug/ml 7 x phenol *MIC*=64 ug/ml; Antispasmodic; Antitubercular; Antitumor; Antitumor (Pancreas) *IC*<sub>50</sub>=265 uM; Ascaricide; Cancer-Preventive; Candidicide; CNS-Stimulant; Embryotoxic; Emetic 3 x *ipecac*; Expectorant; FLavor *FEMA* 1-10; Fungicide *IC*<sub>93</sub>=2 mM; Herbicide *IC*<sub>100-2,000</sub> uM; Insectifuge 50 ppm; Insectiphile; Mycobactericide *MIC*=64 ug/ml; Nematicide *IC*<sub>86</sub>=100 ug/ml *MLC*=1,000 ug/ml; Perfumery; Pesticide; Sedative; Trichomonicide *LD*<sub>100</sub>=300 ug/ml

**GLYCOLIC-ACID Plant:**

Cholesterolytic; Diuretic; Hepatotonic; Irritant

**HEPT-TRANS-2-EN-1-AL Resin, Exudate, Sap:**

No activity reported.

**HEPTAN-1-AL Resin, Exudate, Sap:**

No activity reported.

**HEPTAN-2-OL Resin, Exudate, Sap:**

No activity reported.

**HEPTANOIC-ACID Resin, Exudate, Sap:**

No activity reported.

**HESPERIDIN Leaf:**

Analgesic; Anti-LDL; Antiallergenic; Antibradykinic; Anticapillary-Fragility; AntiDNA; Antiflu; Antihistaminic; Antiinflammatory  $IC_{47}=50\text{ mg/kg scu}$   $IC_{63}=100\text{ mg/kg scu}$ ; Antileukotriene; Antioxidant  $IC_{50}=8\text{ ppm}$ ; Antiprostaglandin; AntiRNA; Antistomatitic; Antitriglyceride; Antiulcer  $100-150\text{ mg/kg ipr}$ ; Antivaccinia; Antiviral; Anxiolytic; Calcium-Antagonist  $IC_{50}=1.2\text{ uM rbt}$ ; Capillariprotective; Catabolic; Choleric; CNS-Depressant  $100-150\text{ mg/kg ipr}$ ; Cyclooxygenase-Inhibitor; Hypolipidemic; Lipoxygenase-Inhibitor; Pesticide; ProHDL; Vasopressor

**HEXAN-1-AL Resin, Exudate, Sap:**

No activity reported.

**HEXAN-1-OL Resin, Exudate, Sap:**

No activity reported.

**HISPIDULIN Plant:**

Antiaggregant  $IC_{50}=13\text{ ug/ml}$ ; Antihepatotoxic  $32\text{ mg/kg}$ ; Antioxidant  $ED=uM$ ; Antiperoxidant; Antiradicular; Antitumor; Cancer-Preventive

**HISPIDULOSIDE Plant:**

Aldose-Reductase-Inhibitor  $ED_{50}=1-10\text{ uM}$ ; Anticataract

**HUMULENE-EPOXIDE-I Plant:**

No activity reported.

**HUMULENE-EPOXIDE-II Plant:**

No activity reported.

**HYDROXY-BENZOIC-ACID-4-BETA-D-GLUCOSIDE Leaf:**

No activity reported.

**ISOBORNEOL Plant 7 - 95 ppm**

Antiherpetic  $600\text{ ppm}$ ; Antiviral; Insectifuge; Motor-Stimulant; Nematicide  $MLC=1\text{ mg/ml}$ ; Pesticide; Sedative

**ISOBORNYL-ACETATE Plant:**

Insectifuge; Pesticide

**ISOBUTYL-ACETATE Plant:**

Irritant; Narcotic; Perfumery *Fragrance*

**ISOPINOCARVEOL Plant 4 - 19 ppm**

No activity reported.

**ISOPULEGOL Plant 4 - 19 ppm**

Antiacetylcholinesterase  $IC_{50}=2.0\text{ mM}$ ; FLavor *FEMA 5-30*; Perfumery

**ISOROSMANOL Flower 17 ppm;**

Antioxidant

**ISOROSMARICINE Plant:**

No activity reported.

**LABIATIC-ACID Plant:**

Antioxidant

**LAVANDULOL Plant 7 - 34 ppm**

No activity reported.

**LEDENE Plant:**

No activity reported.

**LIMONENE Plant 1,950 ppm;**

Acaricide  $LC_{100}=8\text{ }\mu\text{M}$ ; AChE-Inhibitor; Allelochemic; Allergenic *1/20th carene*; Antiacetylcholinesterase  $IC_{22-26}=1.2\text{ mM}$ ; Antiadenomic; Antialzheimeran?; Antiasthmatic; Antibacterial; Anticancer; Antiesophagitic; Antifeedant; Antiflu; Antiinflammatory; Antilithic; Antilymphomic; Antimetastatic (Stomach); Antimutagenic; Antiobesity; Antiseptic; Antispasmodic  $ED_{50}=0.197\text{ mg/ml}$ ; Antitumor; Antitumor (Breast); Antitumor (Colon); Antitumor (Pancreas); Antitumor (Prostate); Antitumor (Stomach); Antiviral; Apoptotic; Bronchoprotectant; Cancer-Preventive; Candidistat; Chemopreventive; Cholesterolytic; Detoxicant; Enterocontractant; Expectorant; FLavor; Fungiphilic; Fungistat; GST-Inducer; Herbicide  $IC_{50}=45\text{ }\mu\text{M}$ ; Histaminic; Immunomodulator; Insecticide  $0.37\text{ }\mu\text{M/fly}$ ; Insectifuge; Interleukin-6-Inhibitor; Irritant; Lipolytic; Myorelaxant  $50\text{ mg/kg}$ ; Nematicide  $IC=100\text{ }\mu\text{g/ml}$ ; NO-Genic; Ornithine-Decarboxylase-Inhibitor  $\sim 750\text{ mg/kg}$  (*diet*); Ozone-Scavenger; P450-Inducer; Peristaltic; Pesticide; Photosensitizer; Sedative  $ED=1-32\text{ mg/kg}$ ; Transdermal

**LINALOL Plant 585 ppm;**

No activity reported.

**LINALOL-ACETATE Plant 32 - 152 ppm**

No activity reported.

**LONGIFOLENE Plant 20 - 95 ppm**

No activity reported.

**LUTEOLIN Leaf: Plant:**

Aldose-Reductase-Inhibitor  $EC=3\text{ ppm}$   $IC_{50}=0.45\text{ }\mu\text{M rat}$ ; Antiallergic; Antiangiogenic  $IC_{60-75}=10\text{ }\mu\text{M}$ ; Antiatherogenic; Antibacterial  $MIC=500\text{ }\mu\text{g/ml}$ ; Anticarcinogenic; Anticarcinomic; Anticataract  $EC=3\text{ ppm}$ ; Anticomplementary; Antidermatic;

Antiestrogenic; Antifeedant  $IC_{50} < 1,000$  ppm diet; Antiherpetic 11-23 ug/ml; Antihistaminic <10-15 uM; AntiHIV; Antiinflammatory =indomethacin; Antileukemic 20-50 uM; Antilymphomic; Antimelanomic; Antimutagenic  $ID_{50} = 0.44$  ug/ml  $ID_{50} = 2-5$  nM; Antinociceptive; Antioxidant  $IC_{50} = 10$  uM; Antipolio; Antiproliferant; Antispasmodic; Antitumor 1-50 uM; Antitumor (brain); Antitumor (Colon); Antitumor (Kidney); Antitumor (Lung); Antitumor (Ovary); Antitumor (Pancreas); Antitumor (Skin) 20 uM; Antitumor (Stomach); Antitumor (Thyroid) 12-50 uM; Antitussive; Antiviral 11-23 ug/ml; Aphidifuge; Apoptotic 12-50 uM; Aromatase-Inhibitor  $IC_{35} = 1$  uM/l; Beta-Glucuronidase-Inhibitor  $IC_{50} = \sim 40$  uM; Calcium-Antagonist  $IC_{50} = 1.2$  uM rbt; Cancer-Preventive; Chemopreventive; Choloretic; Cytotoxic 1-50 uM; Deiodinase-Inhibitor; Differentiator  $IC > 40 = 40$  uM; Diuretic; Estrogenic 58% genistein; Hepatoprotective; Hyaluronidase-Inhibitor  $IC_{50} = 100-250$  uM; Hypocholesterolemic; ICAM-1-Inhibitor; IKK-Inhibitor; iNOS-Inhibitor; Iodothyronine-Deiodinase-Inhibitor; Lipoxygenase-Inhibitor; MAPK-Inhibitor; Metalloproteinase-Inhibitor; MMP-9-Inhibitor 20 uM; Myorelaxant; NEP-Inhibitor  $IC_{50} = > 42$  uM; NF-kB-Inhibitor; NO-Inhibitor; Pesticide; Proliferant; Prostaglandin-Synthetase-Inhibitor; Protein-Kinase-C-Inhibitor  $IC_{70} = 50$  uM; PTK-Inhibitor 10-100 uM; Succinoxidase-Inhibitor; TNF-alpha-Inhibitor  $IC_{50} = 14.44$  uM; Topoisomerase-I-Inhibitor; Vasodilator; VEGF-Inhibitor  $IC_{50} = 2-7$  uM; Xanthine-Oxidase-Inhibitor  $IC_{50} = 0.11$  ug/ml

**LUTEOLIN-3'-O-(3''-O-ACETYL)-BETA-D-GLUCURONIDE Leaf:**

Antioxidant  $IC_{50} = ca$  25 ppm

**LUTEOLIN-3'-O-(4''-O-ACETYL)-BETA-D-GLUCURONIDE Leaf:**

Antioxidant  $IC_{50} = 14$  ppm

**LUTEOLIN-3'-O-BETA-D-GLUCURONIDE Leaf:**

No activity reported.

**LUTEOLIN-7-GLUCOSIDE Plant:**

Aldose-Reductase-Inhibitor  $IC_{31} = 1$  uM  $IC_{73} = 10$  uM; Antidermatic; Antiherpetic; Antiinflammatory; Antiviral; Pesticide

**MESITY-ALCOHOL Plant 40 - 190 ppm**

No activity reported.

**METHYL-ETHER Plant:**

No activity reported.

**METHYL-EUGENOL Plant:**

Anesthetic; Antibacterial; Anticonvulsant; Antidote (Strychnine); Antifeedant; Antioxidant  $EC_{50} = 100$  ul/l; Antiradicular; Antiseptic; Cancer-Preventive; Carcinogenic; FLavor FEMA 5-15; Fungicide; Fungistat 100 ug/mL; Insectifuge; Myorelaxant; Narcotic; Nematicide  $MIC = 1$  mg/ml; Perfumery; Pesticide; Sedative

**METHYL-HEPTENONE Plant 8 - 38 ppm**

No activity reported.

**MONOMETHYL-ALKANE Leaf:**

No activity reported.

**MYRCENE Plant 25 - 5,605 ppm**

ACE-Inhibitor *100 ug/ml*; Aldose-Reductase-Inhibitor; Allergenic; Analgesic; Antibacterial; Anticonvulsant; Antimutagenic; Antinitrosaminic; Antinociceptive *10-20 mg/kg ipr mus 20-40 mg/kg scu mus*; Antioxidant; Antispasmodic; Chemopreventive; FLavor *FEMA 0.5-9*; Fungicide; Hypothermic; Insectifuge; Irritant; Myorelaxant *100-200 mg/kg*; P450-2B1-Inhibitor *IC50=0.14 uM*; Perfumery; Pesticide

**MYRTENOL *Plant 8 - 38 ppm***

Antimalarial *IC50=5-50 ug/ml*; Antiplasmodial

**N-METHYL-ROSMARICINE *Plant:***

No activity reported.

**NEO-CHLOROGENIC-ACID *Plant:***

Antiinflammatory; Vulnerary

**NEO-THUJOL *Leaf 1.5 - 5 ppm***

No activity reported.

**NEPETIN *Plant:***

Aldose-Reductase-Inhibitor *ED50=1 uM*; Anticataract; Antitumor; Xanthine-Oxidase-Inhibitor

**NEPETRIN *Plant:***

Aldose-Reductase-Inhibitor *ED50=1-10 uM*; Analgesic; Antiangiotensic; Antibradykinetic; Anticataract; Antiinflammatory; Antipyretic; Antispasmodic; Cancer-Preventive; Radioprotective

**NONAN-2-ONE *Resin, Exudate, Sap:***

No activity reported.

**NOPOL *Plant 1 - 5 ppm***

No activity reported.

**O-O-N-TRIMETHYLROSMARICINE *Plant:***

No activity reported.

**OCTAN-1-OL *Resin, Exudate, Sap:***

No activity reported.

**OCTANE-2,3-DIONE *Resin, Exudate, Sap:***

No activity reported.

**OCTANOIC-ACID *Resin, Exudate, Sap:***

Candidicide; FLavor *FEMA 3-20*; Fungicide; Perfumery; Pesticide

**OLEANOLIC-ACID *Plant 10,500 ppm; Shoot 20 ppm;***

Abortifacient; Antiallergic; Antiarrhythmic *40 mg/kg*; Antiatherosclerotic; Antibacterial *MIC=625-1,250 ug/ml*; Anticarcinomic; Anticariogenic; Anticomplement *IC40-50 0.01 mM/l gpg IC80-90 0.05 mM/l gpg*; Antiedemic *IC36=40 mg/kg ipr rat*; Antifertility; Antingivitic *MIC=625-1,250 ug/ml*; Antihepatotoxic; AntiHIV *EC50=1.7 ug/ml IC50=21.8 ug/ml*; Antihyperlipidemic; Antiinflammatory *40 mg/kg ipr*; Antiischemic *40 mg/kg*; Antileukemic; Antileukotriene *IC50=17 uM*; Antimalarial *IC50=70-89*

*ug/ml*; Antinephritic *IC50*=19-24 *uM*; Antioxidant *IC46*=10 *uM*; Antiperiodontic *MIC*=625-1,250 *ug/ml*; Antiperoxidant *IC30*=200 *ug/ml*; AntiPGE2 *IC50*=24 *uM*; Antiplaque *MIC*=625-1,250 *ug/ml*; Antiplasmodial *IC50*=70-89 *ug/ml*; Antisarcotic; Antiseptic *MIC*=625-1,250 *ug/ml*; AntiTGF-beta *IC50*=19-24 *uM*; Antitumor; Antitumor (Breast); Antitumor (Colon); Antitumor (Kidney); Antitumor (Lung); Antitumor (Pancreas); Antiulcer >*carbenoxolone*; Antiviral *EC50*=1.7 *ug/ml* *IC50*=21.8 *ug/ml*; Aromatase-Inhibitor; Beta-Blocker; Beta-Glucuronidase-Inhibitor ~100 *mg/kg*; Cancer-Preventive; Cardioprotective 40 *mg/kg*; Cardiotonic; COX-2-Inhibitor *IC50*=295 *uM*; Cyclooxygenase-Inhibitor; Diuretic; Elastase-Inhibitor *IC50*=~15 *uM*; Hepatoprotective; Hypolipemic; Hypotensive; Immunomodulator; Leucocytogenic; NF-kB-Inhibitor; Phagocytotic; Piscicide; Prostaglandin-Synthesis-Inhibitor *igs mus*; Sedative; Uterotonic; Vasopressor

**P-CYMEN-8-OL Plant 1 - 5 ppm**

No activity reported.

**P-CYMENE Plant 25 - 950 ppm**

Analgesic; Antiacetylcholinesterase *IC40*=1.2 *mM*; Antibacillary; Antibacterial; Antiflu; Antirheumatologic; Antiviral; FLavor FEMA 12-250; Fungicide; Herbicide *IC50*=50 *uM*; Insectifuge; Irritant; Laxative; Pesticide; Sedative; Trichomonicide *LD100*=50 *ug/ml*

**P-MENTH-3-EN-1-OL Plant 28 - 133 ppm**

No activity reported.

**P-MENTH-CIS-2-EN-1-OL Leaf tr;**

No activity reported.

**P-MENTH-TRANS-2-EN-1-OL Leaf tr;**

No activity reported.

**PENTAN-1-AL Resin, Exudate, Sap:**

No activity reported.

**PENTAN-1-OL Resin, Exudate, Sap:**

No activity reported.

**PENTAN-2-OL Resin, Exudate, Sap:**

No activity reported.

**PHYTOSTEROLS Plant 580 - 640 ppm**

Antiprostatotic; Hypocholesterolemic

**PICROSALVIN Plant:**

No activity reported.

**PIPERITENONE Leaf 4 - 8 ppm**

Antiacetylcholinesterase *IC50*=110 *ug/ml*; Perfumery; Toxic 10,000/man

**PRISTANE Leaf:**

No activity reported.

**PROTocatechuic-acid-4-beta-D-glucoside Leaf:**

No activity reported.

**ROFFICERONE** *Shoot 20 ppm;*

No activity reported.

**ROSMADIAL** *Leaf 30 ppm;*

Antioxidant

**ROSMADIOL** *Plant:*

No activity reported.

**ROSMANOL** *Leaf 92 ppm;*

Antihepatotoxic; Antilipoperoxidant; Antioxidant; Antiradicular; Cancer-Preventive

**ROSMARIC-ACID** *Plant 3,000 - 3,500 ppm*

No activity reported.

**ROSMARICINE** *Plant:*

No activity reported.

**ROSMARIDIPHENOL** *Plant:*

Antioxidant; Cancer-Preventive

**ROSMARINIC-ACID** *Leaf 3,500 ppm; Plant 25,000 ppm; Shoot 13,500 ppm; Tissue Culture 38,957 ppm;*

ABeta-Inhibitor; Adenylate-Cyclase-Inhibitor; Aldose-Reductase-Inhibitor; Antiaggregant; Antiallergic; Antialzheimeran; Antianaphylactic *1-100 mg/kg orl ID50=1 mg/kg ivn rat ID50=10 mg/kg ims rat*; Antiatherosclerotic *IC50=0.74 uM*; Antibacterial; Anticoagulant; Anticomplementary *1/2 aspirin 20 mg/kg ivn*; Antidepressant; Antiedemic *0.316-3.16 mg/kg ims*; Antigonadotropic; Antihemolytic *IC70=5-10 um/l*; Antihepatotoxic; Antiherpetic *50 ug/ml EC50=20 ug/ml*; AntiHIV *EC50=40 ug/ml*; Antihyperthyroid; Antiinflammatory *IC~58=1,000 uM*; Antiintegrase *10 ug/ml*; Antileukotriene; Antilipoperoxidant; Antimutagenic; Antinephritic; Antioxidant *10 uM EC50=2.7 ug/ml*; Antioxidant (LDL) *IC50=0.74 uM*; Antiplaque; Antiproliferant; Antiprostaglandin *20 mg/kg ivn*; Antiproteolytic *IC50=0.9 mol l*; Antipulmonotic; Antiradicular; Antishock; Antithyreotropic; Antithyroid; Antiuremic; Antiviral *EC50=40 ug/ml*; Anxiolytic; Apoptotic; Calcium-Antagonist *IC50=1.2 uM rbt*; Cancer-Preventive; COX-1-Inhibitor *IC58=1,000 uM*; COX-2-Inhibitor *IC>58=1,000 uM*; Cytotoxic *TC50=100-150 ug/ml*; Deiodinase-Inhibitor; Immunomodulator; Immunostimulant; Lipoxygenase-Inhibitor; Neuroprotective; Pesticide; Radioprotective

**ROSMARINOL** *Plant:*

No activity reported.

**ROSMARIQUINONE** *Plant:*

Antioxidant; Cancer-Preventive

**SABINENE** *Plant 190 ppm;*

Antibacterial; Antihelicobacter; Antiseptic; Antiulcer; Perfumery

**SABINYL-ACETATE** *Leaf 1.5 ppm;*



No activity reported.

**SAFROLE *Plant* 32 - 95 ppm**

Anesthetic; Antiaggregant  $IC_{50}=110\ \mu M$ ; Antibacterial; Anticonvulsant; Antiseptic; Calcium-Antagonist  $IC_{50}=57\ \mu M$   $gpg\ IC_{50}=58\ \mu M$ ; Cancer-Preventive; Carcinogenic; Carminative; CNS-Depressant; CNS-Stimulant; Controlled; Cytochrome-P450-Inducer; Cytochrome-P488-Inducer; DNA-Binder; Hepatocarcinogenic; Hepatoregenerative; Hepatotoxic; Hypothermic; Irritant; Mutagenic; Nematicide  $MLC=1\ mg/ml$ ; Neurotoxic; Pediculicide; Perfumery; Pesticide; Psychoactive; Tremorigenic

**SALICYLATES *Leaf* 70 - 680 ppm**

Antiaggregant; Antiinflammatory; Antipyretic; Antiuricosuric; Hyperglycemic; Hypoglycemic; Uricosuric

**SALICYLIC-ACID-2-BETA-D-GLUCOSIDE *Leaf*:**

No activity reported.

**SALVIGENIN *Plant*:**

No activity reported.

**SANTENE *Plant*:**

No activity reported.

**SINENSETIN *Plant*:**

Fungicide; Pesticide

**SQUALENE *Plant*:**

Antibacterial; Antioxidant; Antitumor; Cancer-Preventive; Chemopreventive; Immunostimulant; Lipoxygenase-Inhibitor; Perfumery; Pesticide; Sunscreen

**STYRENE *Resin, Exudate, Sap*:**

Irritant; Narcotic; Perfumery

**SYRINGIC-ACID-4-BETA-D-GLUCOSIDE *Leaf*:**

No activity reported.

**TERPINEN-4-OL *Plant* 4 - 521 ppm**

Allelopathic; Antiacetylcholinesterase  $IC_{21-24}=1.2\ mM$ ; Antiacne; Antiallergic; Antiasthmatic; Antibacterial; Antioxidant; Antiseptic; Antispasmodic; Antitussive; Antiulcer; Bacteriostatic; Diuretic  $0.1\ ml/rat$ ; Fungicide; Herbicide  $IC_{50}=200\ mM$   $IC_{50}=22\ \mu M$ ; Insectifuge; Irritant; Nematicide  $MLC=1\ mg/ml$ ; Pesticide; Renoirritant; Spermicide  $ED_{100}=0.015$ ; Vulnerary

**TERPINOLENE *Plant* 12 - 350 ppm**

Allelochemic; Antifeedant; Antinitrosaminic; Antioxidant; Deodorant; Flavor FEMA 15-60; Fungicide; Perfumery; Pesticide

**THYMOL *Plant*:**

Acaricide; Allergenic; Analgesic; Ancylostomacide; Anesthetic; Ankylostomacide; Anthelmintic; Antiacne; Antiaggregant  $IC_{50}=0.75$ ; Antialzheimeran?; Antiarthritic; Antiatherosclerotic  $IC_{50}=4\ \mu M$ ; Antibacterial  $MIC=50-400\ \mu g/ml$ ; Antibronchitic; Anticariogenic  $MIC=200-400\ \mu g/ml$ ; Anticholinesterase; Antihalitotic; Antihyperthermic;

Antiinflammatory (=indomethacin); Antileptic; Antimelanomic  $IC_{50}=120\ \mu M/l$ ;  
Antineuritic; Antioxidant  $100\ ppm$ ; Antioxidant (LDL)  $IC_{50}=4\ \mu M$ ; Antiperiodontic  
 $MIC=50-200\ \mu g/ml$ ; Antiplaque  $MIC=39-625\ \mu g/ml$ ; Antiradicular  $EC=60$ ;  
Antirheumatic; Antisalmonella; Antiseptic  $20\ x\ phenol$ ; Antispasmodic;  
Antistaphylococcic; Antistreptococcic  $MIC=200-400\ \mu g/ml$ ; Antitrichinosic  $5\%$ ;  
Antitussive; Ataxigenic; Candidicide  $100\ \mu g/ml$  ( $>Nystatin$ ); Carminative;  
Counterirritant; Culicide  $LC_{50}=36-49\ mg/l$ ; Cyclooxygenase-Inhibitor  
(=indomethacin); Dentifrice; Deodorant; Dermatitigenic; Enterorelaxant; Enterotoxic;  
Expectorant; FLavor  $FEMA\ 2-100$ ; Fungicide; Gastroirritant; Gram(+)icide  $MIC=200-400\ \mu g/ml$ ;  
Gram(-)icide  $MIC=50-200\ \mu g/ml$ ; Insecticide  $0.22\ \mu M/fly\ LC_{50}=36-49\ mg/l$ ;  
Insectifuge; Irritant; Larvicide  $10\ ppm\ 58\ ppm\ LC_{50}=36-49\ mg/l$ ; Molluscicide;  
Myorelaxant; Nematicide  $MLC=0.1\ mg/ml$ ; Perfumery; Pesticide; Sedative; Sprout-  
Inhibitor; Tracheorelaxant; Trichomonicide  $LD_{100}=25\ \mu g/ml$ ; Urinary-Antiseptic;  
Varroacide; Vermicide

**TOLUENE Plant** 436 - 2,071 ppm  
Encephalopathic

**TRANS-ANETHOLE Plant:**

Analgesic  $10-100\ \mu g/ml$ ; Anesthetic; Antigenotoxic  $40-400\ mg/kg\ orl\ mus$ ; Antioxidant;  
Antiradicular; Calcium-Antagonist  $IC_{50}=75.2\ \mu M\ gpg$  (weak activity); FLavor  $FEMA\ 1,250-3,150$ ; Sweetener  $13\ x\ sucrose$

**TRANS-BETA-TERPINEOL Plant** 7 - 34 ppm  
No activity reported.

**TRANS-CARVEOL Plant** 1 - 5 ppm  
Antiasthmatic

**TRANS-MYRTENOL Leaf** 32 ppm;  
No activity reported.

**TRANS-OCIMENE Plant** 4 - 130 ppm  
No activity reported.

**TRANS-PINOCARVEOL Leaf** 32 - 42 ppm  
Antimalarial  $IC_{50}=5-50\ \mu g/ml$ ; Antiplasmodial

**TRANS-SABINENE-HYDRATE Plant** 19 ppm;  
No activity reported.

**TRICYCLENONE Plant tr;**  
No activity reported.

**TRIMETHYLALKANE Leaf:**  
No activity reported.

**URSOLIC-ACID Plant** 28,000 - 41,000 ppm **Shoot** 20 ppm;  
Analgesic; Antialzheimeran; Antiarrhythmic; Antiarthritic; Antibacterial; Anticancer;  
Anticancer (Colon); Anticarcinomic; Anticariogenic; Anticholestatic  $28-100\ mg/kg\ orl$ ;  
Anticomplement  $IC_{100}\ 0.1\ mM/l\ gpg\ IC_{80-90}\ 0.05\ mM/l\ gpg$ ; Antidiabetic; AntiEBV;  
Antiedemic; Antiescherichic; Antifibrosarcomic  $IC_{80}=10\ \mu M$ ; Antihepatotoxic 5-20

*mg/kg ipr*; Antihistaminic; AntiHIV 6.7  $\mu$ M EC50=2.0  $\mu$ g/ml IC50=6.5  $\mu$ g/ml IC85=18  $\mu$ g/ml; Antihyperlipidemic; Antiinflammatory 1/3 *indomethacin* IC24=500  $\mu$ g/kg; Antileishmanic ED50=20  $\mu$ M; Antileukemic IC50=2.5-17.8  $\mu$ g/ml; Antilymphomic; Antimalarial IC50=28-37  $\mu$ g/ml; Antimetastatic IC80=10  $\mu$ M; Antimutagenic IC57-80=80  $\mu$ g/kg; Antinephritic IC50=6-7.5  $\mu$ M; Antiobesity?; Antioxidant IC50=10  $\mu$ M; Antiperoxidant IC35=200  $\mu$ g/ml; Antiplasmodial IC50=28-37  $\mu$ g/ml; Antiproliferative IC50=15-20  $\mu$ M; Antistaphylococcic; AntiTGF-beta IC50=6-7.5  $\mu$ M; Antithromboxane IC50=50  $\mu$ M; Antitrypanosomic; Antitumor; Antitumor (brain); Antitumor (Breast) 0.5% *diet* IC50=15-20  $\mu$ M; Antitumor (Cervix); Antitumor (Colon); Antitumor (Lung); Antitumor (Ovary); Antitumor (Stomach); Antitumor-Promoter; Antiulcer; Antiviral IC85=18  $\mu$ g/ml; Aromatase-Inhibitor; Beta-Blocker; Beta-Glucuronidase-Inhibitor ~100  $\mu$ g/kg; Cancer-Preventive; Candidicide; Cardioprotective; Cardiotonic; Choleric 5-20  $\mu$ g/kg *orl*; CNS-Depressant; COX-2-Inhibitor IC50=130  $\mu$ M; Cyclooxygenase-Inhibitor; Cytotoxic 50 ppm 7.2  $\mu$ M ED50=3.75  $\mu$ g/ml; Diuretic; Elastase-Inhibitor IC50=~15  $\mu$ M; Hepatoprotective 1-100  $\mu$ g/ml 10  $\mu$ g/kg; Hypoglycemic; Hypotensive; Immunomodulator; Leucocytogenic; Lipoxygenase-Inhibitor IC50=0.18 mM; MMP-9-Inhibitor IC80=10  $\mu$ M; Ornithine-Decarboxylase-Inhibitor; Pesticide; Piscicide; Potassium-Sparing 3  $\mu$ g/rat; Protease-Inhibitor IC85=18  $\mu$ g/ml; Protisticide; Quinone-Reductase-Inducer 5  $\mu$ g/ml; Sodium-Sparing 3  $\mu$ g/rat; TOPO-2-Inhibitor; Trypanocide; Vasopressor

**VANILLIC-ACID-4-BETA-D-GLUCOSIDE *Leaf*:**

No activity reported.

**VERBENOL *Plant*:**

No activity reported.

**VERBENONE *Plant* 10 - 375 ppm**

Allelochemic; Coleopterifuge; Insectifuge; Perfumery; Pesticide

**ZINGIBERENE *Resin, Exudate, Sap*:**

Antirhinoviral; Antiulcer IC54=100  $\mu$ g/kg; Carminative; Insecticide; Perfumery; Pesticide