

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals and their Biological Activities in: *Melaleuca alternifolia* (MAIDEN & BETCHE) CHEEL (Myrtaceae) -- Teatree

Chemicals

1,4-CINEOLE *Leaf 0.001 ppm;*
No activity reported.

1,8-CINEOLE *Leaf 260 - 16,000 ppm*
(-)-Chronotropic 87 *nl/ml*; (-)-Inotropic; Acaricide *LC100=6 uM*; Allelopathic; Allergenic; Anesthetic; Anthelmintic; Antiacetylcholinesterase *IC50=41 ug/ml*; Antiallergic; Antibacterial 50 *ppm*; Antibronchitic; Anticariogenic; Anticatarrh; Anticholinesterase *IC50=50-70*; Antifatigue; Antihalitosis; Antiinflammatory; Antilaryngitic; Antinociceptive; Antipharyngitic; Antiplatelet; Antirheumatic; Antirhinitic; Antiseptic; Antisinusitic; Antispasmodic; Antistaphylococcal 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 *IC50=78 uM*; 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; Trichomonocidal *LD100=1,000 ug/ml*

ALLO-AROMADENDRENE *Leaf 45 - 112 ppm*
No activity reported.

ALLYL-HEXANOATE *Leaf 0.001 ppm;*
No activity reported.

ALPHA-BULNESENE *Leaf 36 ppm;*
No activity reported.

ALPHA-CADININE *Leaf 143 - 358 ppm*
No activity reported.

ALPHA-COPAENE *Leaf 10 - 25 ppm*
No activity reported.

ALPHA-CUBEBENE *Leaf 4 - 11 ppm*

No activity reported.

ALPHA-GURJUNENE Leaf 23 - 58 ppm

No activity reported.

ALPHA-MUUROLENE Leaf 0.001 - 30 ppm

No activity reported.

ALPHA-P-DIMETHYL-STYRENE Leaf 7 - 18 ppm

No activity reported.

ALPHA-PHELLANDRENE Leaf 10 - 50 ppm

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

ALPHA-PINENE Leaf 200 - 700 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 $IC_{50}=30 \mu M$; Insecticide 0.82 $\mu M/fly$; Insectifuge 50 ppm; Insectiphile; Irritant; P450-2B1-Inhibitor $IC_{50}=0.087 \mu M$; Perfumery; Pesticide; Sedative; Spasmogenic; Tranquilizer; Transdermal

ALPHA-TERPINENE Leaf 190 - 4,375 ppm

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

ALPHA-TERPINEOL Leaf 180 - 902 ppm

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

ALPHA-TERPINOLENE Leaf 364 ppm;

No activity reported.

ALPHA-THUJENE Leaf 76 ppm;

No activity reported.

AROMADENDRENE Leaf 235 - 675 ppm

Antiseptic; Cancer-Preventive; Pesticide

BETA-ELEMENE Leaf 0.001 ppm;

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

BETA-PHELLANDRENE Leaf 75 ppm;

Expectorant; Fungicide; Perfumery

BETA-PINENE *Leaf 59 - 950 ppm*

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

CALAMENENE *Leaf 10 - 25 ppm*

No activity reported.

CAMPHENE *Leaf 0.001 ppm;*

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

CAMPHOR *Leaf 0.001 ppm;*

Allelopathic; Analgesic; Anesthetic; Antiacne; Antidiarrheic *500 ug/ml*; Antidysenteric; Antiemetic *100-200 mg man orl*; Antifeedant *IC50=5,000 ppm diet*; Antifibrositic; Antineuralgic; Antipruritic; Antiseptic; Antispasmodic *ED50=0.075 mg/ml*; Cancer-Preventive; Carminative; CNS-Stimulant; Convulsant; Cosmetic; Counterirritant; Decongestant; Deliriant; Ecbolic; Emetic; Epileptigenic; Expectorant; Fungicide *ED50=2.7 mM*; Herbicide *IC50=3.3-180 mM*; Insect-Repellent; Insectifuge; Irritant; Nematicide *MLC=1 mg/ml*; Oculoirritant; P450-2B1-Inhibitor *IC50=7.89 uM*; Pesticide; Respirainhibitor; Respirastimulant; Rubefacient; Stimulant; Transdermal; Verrucolytic; Vibriocide *500 ug/ml*

CARYOPHYLLENE *Leaf 0.001 - 154 ppm*

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

CYMENENE *Leaf 12 ppm;*

No activity reported.

GAMMA-TERPINENE *Leaf 1,154 - 3,000 ppm*

Acaricide; ACE-Inhibitor *100 ug/ml (weak activity)*; Aldose-Reductase-Inhibitor *100 ug/ml*; Antiacetylcholinesterase *IC23=1.2 mM*; Antifeedant; Antioxidant; FLavor *FEMA 1-40*; Insectifuge; Irritant; Perfumery; Pesticide

HEXANOL *Leaf 0.001 ppm;*

Antiseptic; FLavor *FEMA 0.2-25*; Pesticide

HUMULENE *Leaf 0.001 - 12 ppm*

Antimalarial *IC50=86 ug/ml*; Antiplasmodial

LIMONENE *Leaf 100 - 250 ppm*

Acaricide *LC100=8 uM*; AChE-Inhibitor; Allelochemic; Allergenic *1/20th carene*; Antiacetylcholinesterase *IC22-26=1.2 mM*; Antiadenomic; Antialzheimeran?; Antiasthmatic; Antibacterial; Anticancer; Antiesophagitic; Antifeedant; Antiflu; Antiinflammatory; Antilithic; Antilymphomic; Antimetastatic (Stomach); Antimutagenic; Antiobesity; Antiseptic; Antispasmodic *ED50=0.197 mg/ml*; Antitumor;

Antitumor (Breast); Antitumor (Colon); Antitumor (Pancreas); Antitumor (Prostate); Antitumor (Stomach); Antiviral; Apoptotic; Bronchoprotectant; Cancer-Preventive; Candidostat; Chemopreventive; Cholesterolytic; Detoxicant; Enterocontractant; Expectorant; FLavor; Fungiphilic; Fungistat; GST-Inducer; Herbicide $IC_{50}=45 \mu M$; Histaminic; Immunomodulator; Insecticide $0.37 \mu M/fly$; Insectifuge; Interleukin-6-Inhibitor; Irritant; Lipolytic; Myorelaxant 50 mg/kg ; Nematicide $IC=100 \text{ ug/ml}$; 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 Leaf 10 - 25 ppm

No activity reported.

MENTHATRIENES Leaf 0.001 ppm;

No activity reported.

MYRCENE Leaf 52 - 130 ppm

ACE-Inhibitor 100 ug/ml ; Aldose-Reductase-Inhibitor; Allergenic; Analgesic; Antibacterial; Anticonvulsant; Antimutagenic; Antinitrosaminic; Antinociceptive $10-20 \text{ mg/kg ipr mus}$ $20-40 \text{ mg/kg scu mus}$; Antioxidant; Antispasmodic; Chemopreventive; FLavor $FEMA$ 0.5-9; Fungicide; Hypothermic; Insectifuge; Irritant; Myorelaxant $100-200 \text{ mg/kg}$; P450-2B1-Inhibitor $IC_{50}=0.14 \mu M$; Perfumery; Pesticide

NEROL Leaf 0.001 ppm;

Antibacterial; Antiseptic; FLavor $FEMA$ 1-20; Perfumery; Pesticide; Sedative; Trichomonicide $ED_{100}=300 \text{ ug/ml}$

P-CYMEN-8-OL Leaf 13 - 32 ppm

No activity reported.

P-CYMENE Leaf 300 - 2,855 ppm

Analgesic; Antiacetylcholinesterase $IC_{40}=1.2 \text{ mM}$; Antibacillary; Antibacterial; Antiflu; Antirheumatologic; Antiviral; FLavor $FEMA$ 12-250; Fungicide; Herbicide $IC_{50}=50 \mu M$; Insectifuge; Irritant; Laxative; Pesticide; Sedative; Trichomonicide $LD_{100}=50 \text{ ug/ml}$

PIPERITOL Leaf 7 - 18 ppm

No activity reported.

PIPERITONE Leaf 8 - 20 ppm

Antiasthmatic; FLavor $FEMA$ 1-2; Herbicide $IC_{50}=30 \text{ mM}$ $IC_{50}=75 \mu M$; Insectifuge ($> DEET$); Perfumery; Pesticide

SABINENE Leaf 12 - 30 ppm

Antibacterial; Antihelicobacter; Antiseptic; Antiulcer; Perfumery

TERPINEN-1-OL Leaf 40 - 100 ppm

No activity reported.

TERPINEN-4-OL Leaf 2,941 - 11,225 ppm

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

Spermicide *ED100=0.015*; Vulnerary

TERPINOLENE *Leaf 236 - 6,125 ppm*

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

VIRIDIFLORENE *Leaf 103 - 257 ppm*

No activity reported.