

# Dr. Duke's Phytochemical and Ethnobotanical Databases

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## Chemicals and their Biological Activities in: *Lavandula x hybrida* BALB. EX GING. (Lamiaceae) -- Hybrid Lavender

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### Chemicals

#### (E)-BETA-OCIMENE *Shoot* 22 - 48 ppm

No activity reported.

#### 1,8-CINEOLE *Shoot* 1,750 - 2,465 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; Antiplateau; 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  $IC_{50}=78\ \mu M$ ; 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 *Shoot* 20 - 31 ppm

No activity reported.

#### ALPHA-PINENE *Shoot* 300 - 455 ppm

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

#### ALPHA-TERPINENE *Shoot* 1 - 9 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  $IC_{50}=0.76\ \mu M$ ; Perfumery; Pesticide; Spasmogenic

#### ALPHA-TERPINEOL *Shoot* 200 - 300 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 ED50=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 IC100=5 mg/g; Transdermal; Vulnerary ED50=240 ug/g mus

**BETA-BISABOLENE Shoot 20 - 42 ppm**

Abortifacient; Antirhinoviral IC50=1,800?; Antiulcer IC57=100 mg/kg; Antiviral IC50=1,800?; Perfumery; Stomachic

**BETA-CARYOPHYLLENE Shoot 20 - 45 ppm**

No activity reported.

**BETA-PINENE Shoot 395 - 585 ppm**

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

**BORNEOL Shoot 55 - 80 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

**CAMPHENE Shoot 55 - 85 ppm**

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

**CAMPHOR Shoot 660 - 890 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; Epileptogenic; 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-OXIDE Shoot 14 - 25 ppm**

Antiedemic; Antifeedant; Antiinflammatory; Antitumor; Calcium-Antagonist ED50=32 uM gpg; Fungicide; Insecticide; Pesticide

**CUMINALDEHYDE Shoot 5 - 8 ppm**

Antibacterial; FLavor FEMA <1; Fungicide; Irritant; Larvicide; Perfumery; Pesticide; Sedative; Tyrosinase-Inhibitor ID50=0.05 mM; Ulcerogenic

**GAMMA-TERPINENE Shoot 12 - 21 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

**GERMACRENE-D Shoot 19 - 45 ppm**

Pesticide; Pheromone

**HEXYL-BUTYRATE Shoot 9 - 16 ppm**

FLavor FEMA 2-10

**LIMONENE Shoot 110 - 200 ppm**

Acaricide LC<sub>100</sub>=8 uM; AChE-Inhibitor; Allelochemic; Allergenic 1/20th carene; Antiacetylcholinesterase IC<sub>22-26</sub>=1.2 mM; Antiadenomic; Antialzheimeran?; Antiasthmatic; Antibacterial; Anticancer; Antiesophagitic; Antifeedant; Antiflu; Antiinflammatory; Antilithic; Antilymphomic; Antimetastatic (Stomach); Antimutagenic; Antiobesity; Antiseptic; Antispasmodic ED<sub>50</sub>=0.197 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<sub>50</sub>=45 uM; Histaminic; Immunomodulator; Insecticide 0.37 uM/fly; Insectifuge; Interleukin-6-Inhibitor; Irritant; Lipolytic; Myorelaxant 50 mg/kg; Nematicide IC=100 ug/ml; NO-Genic; Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (*diet*); Ozone-Scavenger; P450-Inducer; Peristaltic; Pesticide; Photosensitizer; Sedative ED=1-32 mg/kg; Transdermal

**LINALOL Shoot 320 - 580 ppm**

No activity reported.

**LINALYL-ACETATE Shoot 0.5 - 3.5 ppm**

Anesthetic 0.01-1 ug/ml; Antioxidant 400 ppm; Antispasmodic ED<sub>50</sub>=0.21 mg/ml; FLavor FEMA 2-15; Motor-Depressant; Perfumery; Sedative

**MYRCENE Shoot 70 - 105 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 IC<sub>50</sub>=0.14 uM; Perfumery; Pesticide

**MYRTENAL Shoot 55 - 120 ppm**

Antimalarial IC<sub>50</sub>=5-50 ug/ml; Antiplasmodial; Herbicide; Perfumery; Pesticide

**P-CYMENE Shoot 7 - 13 ppm**

Analgesic; Antiacetylcholinesterase IC<sub>40</sub>=1.2 mM; Antibacillary; Antibacterial; Antiflu; Antirheumatologic; Antiviral; FLavor FEMA 12-250; Fungicide; Herbicide IC<sub>50</sub>=50 uM; Insectifuge; Irritant; Laxative; Pesticide; Sedative; Trichomonicide LD<sub>100</sub>=50 ug/ml

**PINOCARVONE Shoot 50 - 75 ppm**

Perfumery

**SABINENE Shoot 155 - 235 ppm**

Antibacterial; Antihelicobacter; Antiseptic; Antiulcer; Perfumery

**TERPINEN-4-OL** *Shoot 35 - 80 ppm*

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

**TERPINOLENE** *Shoot 10 - 17 ppm*

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

**TRANS-ALPHA-BERGAMOTENE** *Shoot 22 - 43 ppm*

No activity reported.

**TRANS-PINOCARVEOL** *Shoot 55 - 90 ppm*

Antimalarial  $IC_{50}=5-50\text{ ug/ml}$ ; Antiplasmodial

**TRANS-SABINENE-HYDRATE** *Shoot 47 - 75 ppm*

No activity reported.