

## Biological Activities of Matico (*Piper aduncum, angustifolium*)

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Leaf - Brazil	Hypotensive Activity	Pet Ether ext CHCL3 ext Butanol ext	IP Mouse	Not stated	Active		T09627
Leaf - Malaysia	Binding Inhibition	MEOH ext	In vitro	200 mcg/ml	Active	Inhibited platelet activating factor (PAF) receptor binding by 53%	J14055
Leaf - Malaysia	Binding Inhibition	MEOH ext	In vitro	Not stated	Active	PAF antagonist with IC50 values in 1.2 to 18 mcg/ml range	PA1003
Wood - Malaysia	Binding Inhibition	MEOH ext	In vitro	200 mcg/ml	Inactive		J14055
Leaf - Papua-New Guinea	Cytotoxic Activity	CH2CL2 ext	Cell Culture	IC50: 12 mcg/ml	Active	CA-9KB cancer cells	H14310
Leaf - Papua-New Guinea	Cytotoxic Activity	CH2CL2 ext	Cell Culture	Not stated	Active	CA-9KB cancer cells	H15638
Leaf - Brazil	Antiproliferation Activity	Infusion	IP Mouse	0.5 ml / animal	Equivocal	vs. LPS-induced proliferation: stimulated production of colony-stimulating factor	L07194
Leaf - Brazil	Mitogenic Activity	Infusion	Cell Culture	Not stated	Inactive	Splenocytes (mouse)	L07194
Leaf - Peru	Anticrustacean Activity	MEOH ext CH2CL2 ext	<i>Artemia salina</i>	ED50: 719 mcg/ml ED50: 220 mcg/ml	Equivocal Active	Assay system is intended to predict antitumor activity.	K28202
Leaf - Peru	DNA-Binding Effect	MEOH ext	In vitro	1 mg/ml	Inactive	DNA-methyl green assay.	K28202
Leaf - Papua-New Guinea	Antibacterial Activity	Petrol ext	Agar Plate	Not stated	Active	<i>Bacillus subtilis</i> <i>Micrococcus luteus</i> <i>Escherichia coli</i>	H13492

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Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Leaf - Papua-New Guinea	Antibacterial Activity	CH <sub>2</sub> CL <sub>2</sub> ext	Agar Plate	Not stated	Active	<i>Micrococcus luteus</i> <i>Bacillus subtilis</i> <i>Escherichia coli</i>	H14310
Leaf - Papua-New Guinea	Antibacterial Activity	CH <sub>2</sub> CL <sub>2</sub> ext	Agar Plate	Not stated	Active	<i>Micrococcus luteus</i> <i>Bacillus subtilis</i>	H15638
Leaf - Papua-New Guinea	Antibacterial Activity	Pet ether ext	Agar Plate	Not stated	Active	<i>Micrococcus luteus</i> <i>Bacillus subtilis</i> <i>Escherichia coli</i>	H12260
Leaf - Papua-New Guinea	Antibacterial Activity	Pet ether ext	Agar Plate	Not stated	Active	<i>Micrococcus luteus</i> <i>Bacillus subtilis</i> <i>Escherichia coli</i>	H14350
Aerial parts - Peru	Antibacterial Activity	Crude ext	Agar Plate	MIC: 1-2 mg/ml	Active	Gram + bacterial strains	PA1002
Aerial parts - Peru	Antibacterial Activity	Crude ext	Agar Plate	MIC: 16 mg/ml	Active	Gram - bacterial strains	PA1002
Essential Oil - Brazil	Antibacterial Activity	Essential Oil	Agar Plate	20 mg/ml 20 mg/ml 20 mg/ml	Active Active Active	<i>Staphylococcus aureus</i> <i>Bacillus subtilis</i> <i>Escherichia coli</i>	M24523
Flower+Leaf+Stem Honduras	Antibacterial Activity	ETOH ext	Agar Plate	100 mcl / plate	Active	Several bacterial strains.	L25561
Essential Oil - Peru	Antibacterial Activity	Essential Oil	Agar Plate	30 mcg/ml 200 mcg/ml 200 mcg/ml 100 mcg/ml	Equivocal Inactive Inactive Equivocal	<i>Pseudomonas aeruginosa</i> <i>Staphylococcus aureus</i> <i>Bacillus subtilis</i> <i>Escherichia coli</i>	J11125
Leaf USA	Antibacterial Activity	ETOH ext	Agar Plate	100 mcg/ml	Equivocal	<i>Staphylococcus aureus</i>	J11219
Leaf USA	Antibacterial Activity	ETOH ext MEOH ext Hexane ext	Agar Plate	100 mcg/ml	Equivocal Equivocal Equivocal	<i>Staphylococcus aureus</i> <i>Bacillus subtilis</i> <i>Pseudomonas aeruginosa</i>	J11219
Not stated	Antibacterial Activity	Fluid ext	Agar Plate	Not stated	Inactive Inactive	<i>Staphylococcus aureus</i> <i>Escherichia coli</i>	A05300

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Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Leaf - Guatemala	Antibacterial Activity	ETOH-H2O	Agar Plate	50 mcl / plate	Inactive	<i>Neisseria gonorrhoea</i>	K27236
Leaf - Papua-New Guinea	Antifungal Activity	Petrol	Agar Plate	Not stated	Active	<i>Penicillium oxalicum</i>	H13492
Essential Oil - Peru	Antifungal Activity	Essential Oil	Agar Plate	100 mcg/ml 200 mcg/ml 10 mcg/ml	Equivocal Inactive Active	<i>Aspergillus flavus</i> <i>Aspergillus fumigatus</i> <i>Trichophyton mentagrophytes</i>	J11125
Essential Oil - Brazil	Antifungal Activity	Essential Oil	Agar Plate	20 mg/ml	Active	<i>Aspergillus flavus</i> <i>Trichophyton mentagrophytes</i>	M24523
Essential Oil - Brazil	Antifungal Activity	Essential Oil	Agar Plate	MIC: 10 ug	Active	<i>Cladosporium cladosporoides</i> <i>Cladosporium sphaerospermum</i>	PA1010
Flower+Leaf+Stem Honduras	Antifungal Activity	ETOH ext	Agar Plate	100 mcl / plate	Active	Several fungal strains.	L25561
Leaf - Brazil	Antifungal Activity	Benzoid fraction	Agar Plant	Not stated	Active	<i>Cladosporium cladosporoides</i> <i>Cladosporium sphaerospermum</i>	PA1004
Essential Oil - Brazil	Antimycobacterial Activity	Essential Oil	Agar Plate	20 mg/ml	Active	<i>Mycobacterium smegmatis</i>	M24523
Essential Oil - Peru	Antimycobacterial Activity	Essential Oil	Agar Plate	200 mcg/ml	Inactive	<i>Mycobacterium intracellulare</i>	J11125
Leaf - USA	Antimycobacterial Activity	ETOH ext MEOH ext Hexane ext	Agar Plate	Not stated	Inactive	<i>Mycobacterium intracellulare</i>	J11219
Essential Oil - Peru	Antiyeast Activity	Essential Oil	Agar Plate	20 mg/ml	Active Active	<i>Cryptococcus neoformans</i> <i>Saccharomyces cerevisiae</i>	M24523
Flower+Leaf+Stem Honduras	Antiyeast Activity	ETOH ext	Agar Plate	100 mcl / plate	Active	Several yeast strains.	L25561
Leaf - Guatemala	Antiyeast Activity	ETOH-H2O	Agar Plate	Not stated	Inactive	<i>Candida albicans</i>	M31296

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Essential Oil - Peru	Antiyeast Activity	Essential Oil	Agar Plate	50 mcg/ml 50 mcg/ml 200 mcg/ml	Active Active Inactive	<i>Candida albicans</i> <i>Cryptococcus neoformans</i> <i>Saccharomyces cerevisiae</i>	J11125
Leaf - USA	Antiyeast Activity	ETOH ext MEOH ext Hexane ext	Agar Plate	Not stated	Inactive	<i>Candida albicans</i> <i>Cryptococcus neoformans</i>	J11219
Leaf - Indonesia	Antiviral Activity	Not stated	Agar Plate	Not stated	Active	Polio virus	PA1005
Inflorescence-Brazil	Anti-leishmaniasis Activity	2CLMethane	In vitro	IC50: 24 mcg/ml	Active	<i>Leishmania amazonensis</i>	L03546
Inflorescence-Brazil	Anti-leishmaniasis Activity	DMC fraction	IP mouse	5 mg / animal	Active	<i>Leishmania amazonensis</i>	PA1006
Plant / Puerto Rico	Molluscicidal Activity	H2O Ext	<i>Lymnaea</i>	LD100 > 1M ppm	Inactive	Fruits, roots and leaves were tested against <i>L. cubensis</i> and <i>L. columella</i> .	T04621
Leaf - Papua-New Guinea	Molluscicidal Activity	Petrol	In vitro	Not stated	Active	<i>Biomphalaria glabrata</i>	H13492
Leaf - Papua-New Guinea	Molluscicidal Activity	Pet ether ext	In vitro	Not stated	Active	<i>Biomphalaria glabrata</i>	H14350
Leaf - Papua-New Guinea	Molluscicidal Activity	Petrol ext	In vitro	Not stated	Active	<i>Biomphalaria glabrata</i>	H15638
Leaf - Brazil	Insecticidal Activity	Essential Oil	In vitro	LD50: 0.51 ml/cm	Active	<i>Sitophilus zeamais</i>	PA1007
Leaf - Malaysia	Insecticidal Activity	Hexane	In vitro	LC50: 0.20 mg/cm	Active	<i>Aedes aegypti</i>	PA1001

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