

## Biological Activities for Extracts of Simarouba (*Simarouba amara*)

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Bark Not stated	Antitumor Activity	Fraction: Glaucarubinone	Cell Culture	Not stated	Active		AH1009
Bark Bolivia	Anticrustacean Activity	MEOH Ext	Cell Culture	LD50= 7.38 ppm	Active	<i>Artemia salina</i> (Assay system is intended to predict for antitumor activity.)	L09232
Root Costa Rica	Cytotoxic Activity	ETOH-H2O (1:1 )Ext	Cell Culture	ED50 < 20 mcg/ml	Active	Ca-9kb	X00001
Dried Bark	Cytotoxic Activity	H2O Ext	Cell Culture	10.0%	Active	Hela Cells	T09507
Seed El Salvador	Cytotoxic Activity	H2O Ext	Cell Culture	ED50 < 20 mcg/ml	Active	Ca-9kb	X00001
Bark Not stated	Cytotoxic Activity	Fractions: Glaucarubinone & Alianthinone	Cell Culture	Not stated	Active	Human epidermoid carcinoma of the nasopharynx	AH1005
Bark Not stated	Cytotoxic Activity Antitumor Activity	Fractions: Glaucarubinone & Alianthinone	Cell Culture	Not stated	Active		AH1009
Bark Not stated	Cytotoxic Activity	Fraction: Glaucarubinone	Cell Culture	Not stated	Active	Murine solid tumor cells Human solid tumor cells MDR murine mammary tumor	AH1004
Bark Not stated	Cytotoxic Activity Antileukemic Activity	Fraction: Holacanthone	Cell Culture	Not stated	Active		AH1011
Bark Not stated	Antileukemic Activity	Fraction: Glaucarubinone	Cell Culture	Not stated	Active	Murine leukemia	AH1004
Bark Not stated	Antileukemic Activity	Fraction: Glaucarubinone	Cell Culture	Not stated	Active	Murine leukemia	AH1010

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Bark Not stated	Antileukemic Activity	Fraction: Dehydro- glaucarubinone	Cell Culture	Not stated	Active	Murine lymphocytic leukemia P388	M01027
Bark	Antiviral Activity	H2O Ext	Cell Culture	Not stated	Active	Virus - herpes (unspec) Virus - influenza (unspec) Virus - poliovirus (unspec) Virus - vaccinia	K10864
Dried Bark Brazil	Antiviral Activity	H2O Ext	Cell Culture	10.0%	Strong Activity	Virus - herpes Type 2 Virus - influenza A2 Virus - poliovirus II Virus - vaccinia	T09507
Bark Mexico	Antiamebic Activity	Hot H2O Ext	Oral Human	Not stated	Active	3/7 cases cured - treatment for 7 days. <i>Entamoeba histolytica</i>	A00750
Seed Not Specified	Antiamebic Activity	H2O Ext	Oral Human	Not stated	Active	Intestinal amoebiasis <i>Entamoeba histolytica</i> 91.8% effective:	A00035
Dried Stem Panama	Antiamebic Activity	Butanol Ext CHCL3 Ext Ether Ext H2O Ext MEOH Ext	Not stated Not stated Not stated Not stated Not stated	IC50= 6.89 mcg/ml IC50= 2.9 mcg/ml IC50= 114 mcg/ml IC50= 52.5 mcg/ml IC50= 6.2 mcg/ml	Active	<i>Entamoeba histolytica</i>	M18314
Bark Guatemala	Antibacterial Activity	EtOH-H2O (50%)Ext	Agar Plate	50.0 mcl/plate	Active Active Inactive	<i>Salmonella typhosa</i> <i>Shigella flexneri</i> <i>E. coli</i>	K24899
Dried Rootbark French Guyana	Lipid Profile Alteration	H2O Ext	Cell Culture Keratinocytes	10.0 mcg/ml	Active	Cholesterol sulphate, cholesterol and ceramide content increased in treated cultures. Results significant at P < 0.01 level.	J12967
Dried Rootbark French Guyana	Skin Moisturizing Effect	H2O Ext	External Human Adult Female	Dose 0.2%	Active	20 volunteers were treated twice daily for one month with a lotion containing the extract.	J12967

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Dried Rootbark French Guyana	Transglutaminase Stimulation	H2O Ext	Cell Culture Keratinocytes	25.0 mcg/ml	Active	Cell culture was treated for 4 days with extract. Results significant at P < 0.05 level.	J12967
Wood	Antimalarial Activity	CHCL3 Ext CHCL3 Ext H2O Ext H2O Ext H2O Ext	Oral Chicken SC Chicken Oral Chicken SC Chicken SC Chicken	25.0 mg/kg 1.5 mg/kg 500.0 mg/kg 100.0 mg/kg 3.0 mg/kg	Strong Activity	<i>Plasmodium gallinaceum</i>	A00785
Bark + Twigs	Antimalarial Activity	CHCL3 Ext CHCL3 Ext	Oral Chicken SC Chicken	32.0 mg/kg 5.0 mg/kg	Strong Activity	<i>Plasmodium gallinaceum</i>	A00785
Bark + Twigs	Antimalarial Activity	H2O Ext H2O Ext	Oral Chicken SC Chicken	200.0 mg/kg 20.0 mg/kg	Inactive Weak Activity	<i>Plasmodium gallinaceum</i>	A00785
Branches	Antimalarial Activity	CHCL3 Ext CHCL3 Ext H2O Ext H2O Ext	Oral Chicken SC Chicken Oral Chicken SC Chicken	60.0 mg/kg 48.0 mg/kg 1.64 gm/kg 410.0 mg/kg	Inactive Inactive Inactive Inactive	<i>Plasmodium gallinaceum</i>	A00785
Branches	Antimalarial Activity	CHCL3 Ext H2O Ext	SC Chicken SC Chicken	50.0 mg/kg 60.0 mg/kg	Inactive Inactive	<i>Plasmodium gallinaceum</i>	A00785
Dried Fruit Panama	Antimalarial Activity	CHCL3 Ext	Not stated	Not stated	Active	<i>Plasmodium falciparum</i> (chloroquine resistant)	T13729
Dried Fruit Panama	Antimalarial Activity	MEOH Ext MEOH Ext	Not stated Oral Mouse	IC50= 0.05 mcg/ml 900 mg/kg	Active Active	<i>Plasmodium falciparum</i> <i>Plasmodium berghei</i>	T14116
Part Not Specified Guatemala	Antimalarial Activity	MEOH Ext CHCL2 Ext	Mice	Not stated	Active	<i>Plasmodium berghei</i> - chloroquine-susceptible and -resistant	AH1002

## Biological Activities for Compounds of Simarouba (*Simarouba amara*)

Compound Tested	Activity Tested For	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Ailanthinone	Antiamebic Activity	In vitro	Not Stated	Active	<i>Entamoeba histolytica</i>	AH1005
Ailanthinone	Antimalarial Activity	Cell Culture	Not Stated	Active	<i>Plasmodium falciparum</i> : chloroquine-resistant. Inhibited protein synthesis and nucleic acid synthesis in human erythrocytes infected with <i>P. falciparum</i> .	AH1006
Ailanthinone	Antiprotozoal Activity	In vitro	Not Stated	Active	<i>Toxoplasma gondii</i>	AH1005
Ailanthinone	Antimalarial Activity	In vitro	Not Stated	Active	<i>Plasmodium falciparum</i>	AH1005
Glaucarubione	Antiamebic Activity	In vitro	Not Stated	Active	<i>Entamoeba histolytica</i>	AH1005
Glaucarubione	Antiprotozoal Activity	In vitro	Not Stated	Active	<i>Toxoplasma gondii</i>	AH1005
Glaucarubinone	Antimalarial Activity	In vitro	Not Stated	Active	<i>Plasmodium falciparum</i>	AH1005
Glaucarubinone	Antimalarial Activity	Cell Culture	Not Stated	Active	<i>Plasmodium falciparum</i> : chloroquine-resistant. Inhibited protein synthesis and nucleic acid synthesis in human erythrocytes infected with <i>P. falciparum</i> .	AH1006
Glaucarubinone	Antimalarial Activity	In vitro	Not Stated	Active	<i>Plasmodium berghei</i> .	AH1007
Glaucarubinone	Antimalarial Activity	Mice	Not Stated	Active	<i>Plasmodium berghei</i> .	AH1007
Glaucarubinone	Antimalarial Activity	In vitro	IC=0.006 mcg/ml	Active	<i>Plasmodium falciparum</i>	AH1008
Holacanthone	Antimalarial Activity	Cell Culture	Not Stated	Active	<i>Plasmodium falciparum</i> : chloroquine-resistant. Inhibited protein synthesis and nucleic acid synthesis in human erythrocytes infected with <i>P. falciparum</i> .	AH1006
Simarolide	Antimalarial Activity	In vitro	IC=0.01 mcg/ml	Active	<i>Plasmodium falciparum</i>	AH1008

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