

## Biological Activities for Extracts of Carqueja (*Baccharis genistelloides*)

Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Aerial Parts Brazil	Toxic Effects (Acute)	HOT H2O EXT (1 gm/20 ml)	Oral Rat	1.5 ml/kg	Inactive	No toxicity noted	AU1001
Stem Brazil	Toxic Effects (General)	H2O EXT	Oral Rat & Mice	0.1 to 2 g/kg	Inactive	Did not alter spontaneous motor activity, sleeping time induced by barbiturates or tail-flick response.	AU1017
Aerial Parts Uruguay	Abortifacient Activity	HOT H2O EXT	Oral Rat	Not stated	Active	A water extract administered to rats daily for 15 days evidenced abortive effects in rats.	AU1002
Aerial Parts Uruguay	Uterine Stimulant Activity	HOT H2O EXT	Oral Rat	Not stated	Active		AU1002
Aerial Parts Bolivia	Hypoglycemic Activity	ETOH EXT	Oral Rat	500 mg/kg	Active	vs. glucose tolerance test inhibited glucose by 90.33% in normal rats	AU1009
Aerial Parts Bolivia	Hypoglycemic Activity	ETOH EXT	Oral Rat	500 mg/kg	Active	Reduced blood glucose by 23.14% in diabetic rats.	AU1009
Aerial Parts Uruguay	Hypoglycemic Activity	HOT H2O EXT	Oral Human	Not stated	Active	Lowered blood sugar levels in healthy volunteers.	AU1002
Aerial Parts Brazil	Hypoglycemic Activity	HOT H2O EXT	Oral Human	Not stated	Active	Lowered blood sugar levels by 32-40% in diabetic patients.	AU1016
Aerial Parts Brazil	Hypotensive Activity	HOT H2O EXT	Oral Rat	Various	Active	Induced diuresis and lowered arterial blood pressure.	AU1003
Aerial Parts Brazil	Hepatoprotective Activity	HOT H2O EXT ETOH EXT	IV Mouse	10 mg/kg 50 mg/kg	Active	vs. phalloidin induced liver damage. The crude extract at 50mg/kg increased survival rate dose-dependently from 26% in the control group to 100% in the treated group	AU1005

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Aerial Parts Brazil	Hepatoprotective Activity	Crude flavonoid EXT	IV Mouse	10 mg/kg 50 mg/kg	Active	vs. phalloidin induced liver damage. The flavonoid extract at 50mg/kg increased survival rate dose-dependently from 26% in the control group to 100% in the treated group.	AU1005
Stem Brazil	Analgesic Activity	H2O EXT	Oral Rat	0.1 to 2 g/kg	Active	Decreased by 40% the number of writhings induced by acetic acid.	AU1017
Aerial Parts Brazil	Analgesic Activity	Butanolic Fraction	IP Mice	100 mg/kg	Active	Reduced acetic acid-induced abdominal constrictions by 95.1%	AU1018
Aerial Parts Brazil	Analgesic Activity	Butanolic Fraction	IP Mice	50 mg/kg	Active	Reduced acetic acid-induced abdominal constrictions by 67.4%	AU1018
Aerial Parts Brazil	Bitter tasting effect	HOT H2O EXT	Oral Human Adult	Various	Active	Used as a bitter to stimulate bile production.	H01410
Dried Leaf Bolivia	Antiulcer Activity	H2O EXT Hexane EXT	Intragastric rat	1.25 gm/kg	Active	vs. ethanol-induced ulcers	L11050
Stem Brazil	Antiulcer Activity	H2O EXT	IP Rat Intraduodenal Rat	1 g/kg 2 g/kg	Active	Reduced gastric secretion in pylorus ligated rats and raised gastric pH.	AU1017
Dried Leaf Bolivia	Antiulcer Activity	CH2Cl2 EXT ETOH EXT	Intragastric rat	1.25 gm/kg	Inactive	vs. ethanol-induced ulcers.	L11050
Stem Brazil	Antiulcer Activity	H2O EXT	Oral Rat	1 g/kg	Active	Prevented gastric ulcers induced by cold immobilization but not those induced by indomethacin.	AU1017
Stem Brazil	Intestinal Transit Delay Activity	H2O EXT	Oral Mouse	2 g/kg	Active	Delayed intestinal transit of charcoal by 20%	AU1017
Entire Plant Bolivia	Antiviral Activity	H2O EXT	Cell Culture	25.0 mcg/ml	Active	Virus - <i>Herpes simplex 1</i>	L06519
Entire Plant Bolivia	Antiviral Activity	H2O EXT	Cell Culture	25.0 mcg/ml	Active	Virus - <i>Vesicular stomatitis</i>	L06519
Entire Plant Bolivia	Antiviral Activity	H2O EXT	Cell Culture	25.0 mcg/ml	Inactive	Virus - <i>Polio virus 1</i>	L06519

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Aerial Parts Bolivia	Antiviral Activity	H2O EXT	Cell Culture	1 to 4 mcg/ml	Active	vs. HIV-1	AU1019
Leaf + Stem Bolivia	Antiviral Activity	H2O EXT	Cell Culture	50.0 mcl	Active	virus - HIV vs. mt-2 t-lymphoblastoid cells infected with HIV	K29837
Entire Plant Bolivia	Cytotoxic Activity	ETOH EXT	Cell Culture	25.0 mcg/ml	Weak Activity	HeLa cells.	L06519
Entire Plant Brazil	Antioxidant Activity	Saline Ext	Agar Plate	5.0 mg/ml	Weak Activity	<i>Escherichia coli</i> vs. stannous chloride oxidative damage.	L17930
Aerial Parts Brazil	Anti-inflammatory Activity	Butanolic Fraction	IP Mice	20 to 100 mg/kg	Strong Activity	Pretreatment with extract inhibited carrageenan induced inflammation by 70-90% and inhibited dextran induced inflammation by 25-71%	AU1018
Aerial Parts Brazil	Anti-inflammatory Activity	Butanolic Fraction	IP Mice	20 to 100 mg/kg	Weak Activity	vs. C16-paf- and arachidonic acid induced swelling	AU1018
Aerial Parts Brazil	Anti-inflammatory Activity	Butanolic Fraction	IP Mice	20 to 100 mg/kg	Inactive	vs. zymosan induced edema	AU1018
Stem Brazil	Anti-inflammatory Activity	H2O EXT	Oral Rat	0.1 to 2 g/kg	Inactive	vs. carrageenan and dextran paw edema	AU1017
Dried Leaf Bolivia	Antimalarial Activity	ETOH EXT ETOH EXT	Not stated Intragastric rat	100.0 mcg/ml 966.0 mg/kg	Active Active	<i>Plasmodium falciparum</i> <i>Plasmodium vinckei</i>	L12113
Entire Plant Brazil	Antimalarial activity	CHCL3 EXT	SC Chicken	425.0 mg/kg	Inactive	<i>Plasmodium gallinaceum</i>	A00785
Entire Plant Brazil	Antimalarial activity	H2O EXT	Oral Chicken	9.8 gm/kg	Inactive	<i>Plasmodium gallinaceum</i>	A00785
Entire Plant Brazil	Antimalarial Activity	Alkaloid Fraction	Broth Culture	Not stated	Inactive	<i>Plasmodium cathemerium</i>	A04980
Aerial Part Bolivia	Insecticide activity	Essential Oil	In vivo	1.0 mg/insect	Inactive	<i>Triatoma infestans</i>	L18411
Essential Oil Bolivia	Insecticide Activity	Essential Oil	Not stated	50.0 mg/liter	Inactive	<i>Aedes aegypti</i>	L15839
Entire Plant Bolivia	Antileishmaniasis Activity	ETOAC EXT ETOH EXT Pet Ether EXT	Cell Culture	100.0 mcg/ml	Inactive	<i>Leishmania amazonensis</i> <i>Leishmania braziliensis</i> <i>Leishmania donovani</i>	K23096

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Entire Plant Bolivia	Antitrypanosomal Activity	ETOAC EXT ETOH EXT Pet Ether EXT	Cell Culture	100.0 mcg/ml	Inactive	<i>Trypanosoma cruzi</i> (various strains)	K23096
Entire Plant Brazil	Antitrypanosomal Activity	H2O EXT	Broth Culture	Not stated	Active	<i>Trypanosoma cruzi</i>	AU1012
Entire Plant Brazil	Antiprotozoan Activity	Alkaloid Fraction	Broth Culture	Not stated	inactive	<i>Haemoproteus columbae</i>	A04980

## Biological Activities for Compounds in Carqueja (*Baccharis genistelloides*)

Compound Tested	Activity Tested For	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Carquejol	Toxic Effects (Acute)	Oral Rat IP Rat	LD50= 1.3 g/kg LD50= 0.41 g/kg	Active		AU1004
Carquejol	Hypocholesterolemic Effects	IP Rat	Not Stated	Active	Lowered blood cholesterol levels by 5-10%	ZZ1078
Hispidulin	Hepatoprotective Activity	IV Mouse	10 mg/kg 50 mg/kg	Active	vs. phalliodin induced liver damage. At 50mg/kg hispidulin increased survival rate dose-dependently from 26% in the control group to 80%	AU1005
Flavonoid Fraction which included quercetin, luteolin, nepetin, apigenin and hispidulin	Hepatoprotective Activity	IV Mouse	10 mg/kg 50 mg/kg	Active	vs. phalliodin induced liver damage. At 50mg/kg the flavonoid mixture increased survival rate dose-dependently from 26% in the control group to 70% in the treated group.	AU1005
Clerodane diterpenoids	Insecticidal Activity	In vivo	Various	Active	vs. <i>Tenebrio molitor</i> larvae	AU1015
3,5-Dicaffeoylquinic acid	Antiviral Activity	In vitro	1 to 4 mcg/ml IC50= 0.03 mcg /ml ED50=1.0 mcg/ml LD50 > 150 mcg/ml	Strong Activity	vs. HIV-1 shown to be a potent inhibitor of the HIV-1 integrase reaction. Therapeutic index was > 150 (LD50 vs ED50). No toxicity noted.	AU1019

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