



Tibouchina lepidota "Alstonville", locally known as "7 cueros" (seven -layered leather) can be found in the Andes Mountains from Venezuela to Peru. In Colombia, it is distributed in the Andean region, located in the temperate and cold thermal floors, between 1300 and 3200 meters above sea level. Neyber S.A.S. gets *T. lepidota* from Cachipay and Tobia Cundinamarca, Colombia. This region is characterized by an altitude of 1600 meters above sea level, and the soil is rich in organic matter (andosols).



HISTORY OF TIBOUCHINA LEPIDOTA in Colombia

Tibouchina lepidota was used by the natives before the American Conquest and Colony. This would be the first indication of the amazing properties of this plant.

After the long journeys in the wild, the Spaniards had bruises and wounds in their arms and legs, the natives would put poultices made out from the leaves and flowers of *Tibouchina* tenderized in water, cover them with a clean cloth and the wounds healed at a surprising rate. The properties of this colorful shrub with violet flowers were also described in the books of the botanical expedition as told by Americans in the 19th century.

T. lepidota is used mostly as an ornamental plant due to its dark purple flowers with no medicinal usage previously reported. However, other species within the genus have been reported to possess various biological activities such as wound healing and to treat cataract. Some of the components isolated from this plant are characterized by antioxidant, anti-tyrosinase and antitumor activities, and for preventing the development of cancer and malformations. Besides, the methanolic extract of *T. lepidota* has shown a percentage of inhibition of 74% on the fungus *Mycosphaerella fijiensis* Morelet, with deformed germination on ascospores [1].

ECOSYSTEM: Fog forests or water factories

The cloud forests are located in high tropical mountains, between 1.300 and 3,200 meters above sea level. The fog or mist comes from the water vapor that rises from the valleys to the cold areas, where it condenses in the form of water, a phenomenon that is also known as 'horizontal rain'.

The mist, which looks like a milky cloud, covers the floors, mosses, leaves, and branches of plants with its mantle and moistens everything it touches. The tiny drops of water that form the mist slide down the foliage to the trunks of the trees and then fall to the ground in the form of larger drops; the water is absorbed by the mosses, the epiphytes, the leaf litter and the capote, which functions as sponges, and then slowly drain through the intricate network formed by the roots of the forest. The water is released little by little in small liquid strands that grow and join up to form streams and rivers.

This is why it is said that the cloud forest and the paramos are big water factories.

The streams and rivers that originate in the cloud forests and in the paramos supply immense extensions to the Colombian territory and benefit the peasant plots, the farms, the aqueducts of towns and cities, and the dams that feed the hydroelectric plants.

The cloud forests are the kingdom of epiphytic plants including the *Tibouchina lepidota*.

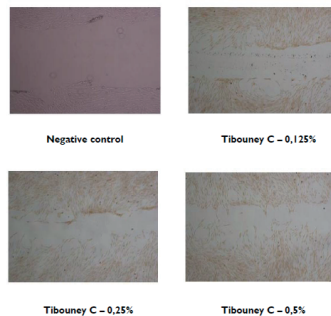
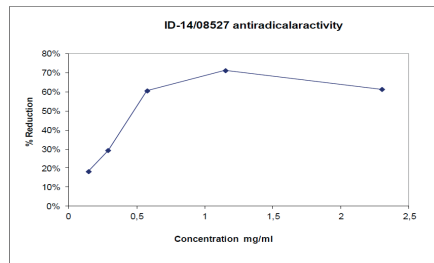


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TIBOUNEY C

Concentration 0,50 % - 2,00%

INCI NAME: Tibouchina Lepidota Bark/Flower/Leaf Extract

ACTIVES/MARKERS	MAIN CLAIMS	STUDY		SAFETY																																		
		EFFICACY	RESULTS																																			
p-Hydroxybenzoic Acid. The extract obtained from the leaves has high content of flavonoids from leucoanthocyanidin benzopirane nucleus type, saponins, and tannins, low content of coumarins and lactones, also steroids and triterpens [2]	HEALING ANTIOXIDANT	Healing Activity study of a test item on healing of human fibroblast culture mono-layer: The product contributed to obtain 18% of cell migration when used at 0,5% and 23% cell migration when used at 0,25% after 24 hours. As a conclusion the product shows a slight effect on the cells migration in a wound performed on fibroblasts mono-layer [3].		Eye irritation In vitro eye safety HET-CAM TEST: The test evaluated Lysis, Haemorrhage and coagulation on chorionallantoic membrane on hen eggs to indicate potential damage to mucous membranes In vivo. The joint analysis of quantitative and qualitative evaluations concluded that the product is a substance Non irritant. [5]																																		
		Antioxidant Study of antiradical activity of a test item by diphenylpicrylhydrazyl reduction: DPPH test: Regarding the antioxidant activity as an antiradical agent, using the method of diphenylpicrylhydrazyl ion reduction, it was possible to conclude the antioxidant efficacy of the product which is shown in a dose-dependent way, observing a maximun effect (71%) when used at 1,15 mg /mL within the tested concentrations [4].		Skin irritation In vivo skin safety test: Patch test The final result of the test indicates that the product is to be classified as 'harmless' as regards the possibility of skin irritation [6].																																		
		Preservative efficacy challenge test The results meet acceptance criteria A and B according to ISO 11930.	<table><tr><th>Parameters</th><th>Sterility Control</th><th>Inoculation</th><th>Day 7</th><th>Day 14</th><th>Day 28</th></tr><tr><td><i>Pseudomonas aeruginosa</i> (ATCC 9027)</td><td><10</td><td>1,1x10⁶</td><td>0</td><td>0</td><td>0</td></tr><tr><td><i>Staphylococcus aureus</i> (ATCC 6538)</td><td><10</td><td>1,2x10⁶</td><td>0</td><td>0</td><td>0</td></tr><tr><td><i>E. coli</i> (ATCC 8739)</td><td><10</td><td>1,6x10⁶</td><td>0</td><td>0</td><td>0</td></tr><tr><td><i>Candida albicans</i> (ATCC 10231)</td><td><10</td><td>4,5x10⁵</td><td>0</td><td>0</td><td>0</td></tr><tr><td><i>Aspergillus brasiliensis</i> (ATCC 16404)</td><td><10</td><td>1,5x10⁵</td><td>-</td><td>0</td><td>0</td></tr></table>	Parameters	Sterility Control	Inoculation	Day 7	Day 14	Day 28	<i>Pseudomonas aeruginosa</i> (ATCC 9027)	<10	1,1x10 ⁶	0	0	0	<i>Staphylococcus aureus</i> (ATCC 6538)	<10	1,2x10 ⁶	0	0	0	<i>E. coli</i> (ATCC 8739)	<10	1,6x10 ⁶	0	0	0	<i>Candida albicans</i> (ATCC 10231)	<10	4,5x10 ⁵	0	0	0	<i>Aspergillus brasiliensis</i> (ATCC 16404)	<10	1,5x10 ⁵	-	0
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				Phototoxicity According to the graduation scale defined in the study, Tibouney C TM (Tibouchina lepidota extract) is not phototoxic [8]																																		
				Ecotoxicity In the experimental conditions of the test, the sample Tibouney C TM (Tibouchina lepidota extract), does not present any toxicity on the mobility of <i>Daphnia magna</i> in the nominal test concentration of 100 mg / L, the EC50-48 h, is higher than 100mg / L. [9]																																		

Reference:

- [1] Mosquera, Oscar M., Lina Marcela Echeverry, and Jaime Niño Osorio. "Evaluación de la actividad antifúngica de extractos vegetales sobre el hongo *Mycosphaerella fijiensis* Morelet." *Scientia et technica* 1.41 (2009).
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 [4] IDEA, IDEA TEST. Antiradical activity test. Martillac, France. November 2014.

- [5] INVITRO CELLS. HET-CAM 12.2013. Belo Horizonte, Brazil. February 2013.
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 [9] Eurofins (2018). *Daphnids acute immobilization test with Tibouney C™* (Tibouchina lepidota extract). 18FYBA368-25Abril 2018. Barcelona, Spain

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