# Antioxidant, Immunomodulator, & Cellular Protective Actions of Picão Preto (*Bidens pilosa*)

**Published Research:**


Bamidele, O., et al. "Chemical properties, antioxidant activities and metabolic profile of mixed blackjack and jute vegetables." *Food Chem.* 2025 Oct 1;4 88: 144885.

Shimizu, K., et al. "Antioxidant effects of *Bidens pilosa* extract protect RAW 264.7 cells from cisplatin-induced cytotoxicity." *Anticancer Res.* 2025 Aug; 45(8): 3459-3467.

Isimot, A., et al. "Comparative studies on the anti-oxidant property of *Bidens pilosa* L. (Asteraceae) leaves and stem." *Nigeria J. Bot.* 2025 Jul; 38(1):37-47.

Priawan, I., et al. "The effect of *Bidens pilosa* extract on vancomycin-induced acute kidney injury in prepubertal rats." *AVERROUS: Malikussaleh J. Med. Health.* 2024 Nov; 10(2): 1-12.

Rodriguez-Mesa, X., et al. "A *Bidens pilosa* L. non-polar extract modulates the polarization of human macrophages and dendritic cells into an anti-inflammatory phenotype." *Molecules*. 2023 Oct; 28(20): 7094.

Rodriguez-Mesa, X., et al. "Immunomodulatory properties of natural extracts and compounds derived from *Bidens pilosa* L.: Literature Review." *Pharmaceutics*. 2023; 15: 1491.

Zafar, F., et al. "A comprehensive review on medicinal plants possessing antioxidant potential." *Clin. Exp. Pharmacol. Physiol*. 2023 Mar; 50(3): 205-217.

Ruiz-Reyes, E., et al. "Phytochemical study of the plant species *Bidens pilosa* L. (Asteraceae) and *Croton floccosus* (Euphorbiaceae)." *F1000Res*. 2022 Jun; 11: 702.

Velázquez, L., et al. "Natural antioxidants from endemic leaves in the elaboration of processed meat products: Current Status." *Antioxidants* (Basel). 2021 Aug; 10(9): 1396.

Hong, M., et al. "Total flavonoids of *Bidens pilosa* ameliorates bone destruction in collagen-induced arthritis." *Planta Med.* 2021 Jun; 87(7): 550-559.

Xin, Y., et al. "Anti-inflammatory activity and mechanism of isookanin, isolated by bioassay-guided fractionation from *Bidens pilosa* L." *Molecules*. 2021 Jan; 26(2): 255.

Kabanda, M., et al. "Proportional coexistence of okanin chalcone glycoside and okanin flavanone glycoside in *Bidens pilosa* leaves and theoretical investigation on the antioxidant properties of their aglycones." *Free Radic. Res.* 2021 Jan; 55(1): 53-70.

Quaglio, A., et al. "*Bidens pilosa* (Black Jack) standardized extract ameliorates acute TNBS-induced intestinal inflammation in rats." *Planta Med*. 2020; 86: 319–330.

Abiodun, O., et al. "Beneficial effect of *Bidens pilosa* L. (Asteraceae) in a rat model of colitis." *J. Basic Clin. Physiol*. *Pharmacol*. 2020 Jun; 31(6): 32598311.

Moyo, S., et al. "Influence of boiling and subsequent phases of digestion on the phenolic content, bioaccessibility, and bioactivity of *Bidens pilosa* (Blackjack) leafy vegetable." *Food Chem.* 2020 May; 311: 126023.

Pegoraro, C., et al. "Protective effects of *Bidens pilosa* on hepatoxicity and nephrotoxicity induced by carbon tetrachloride in rats." *Drug. Chem. Toxicol*. 2018 Nov 5: 1-11.
Dos Santos Filho, E., et al. "Chemopreventive effects of FITOPROT against 5-fluorouracil- induced toxicity in HaCaT cells." *Life Sci.* 2018 Jan; 193: 300-308.
Singh, G., et al. "Pharmacological potential of *Bidens pilosa* L. and determination of bioactive compounds using UHPLC-QqQ(LIT)-MS/MS and GC/MS." *BMC Complement. Altern. Med*. 2017 Nov; 17(1): 492.
Bilanda, D., et al. "*Bidens pilosa* ethylene acetate extract can protect against L-NAME-induced hypertension on rats." *BMC Complement. Altern. Med.* 2017 Oct; 17(1): 479.
Goudoum, A., et al. "Antioxidant activities of essential oil of *Bidens pilosa* (Linn. Var. Radita) used for the preservation of food qualities in North Cameroon."*Food Sci. Nutr.* 2016 Jan; 4(5): 671-8.
Ocheng, F., et al. "*In vitro* cytotoxicity and effects on IL-1β-Induced proinflammatory mediators by human gingival fibroblasts." *Evid. Based Complement. Alternat. Med.* 2016; 2016: 5357689.
Zhang, C., et al. "The effect of the aqueous extract of *Bidens pilosa* L. on androgen deficiency dry eye in rats." *Cell Physiol Biochem.* 2016; 39(1): 266-77.
Fei, W., "[Protective effect of total flavones of *Bidens pilosa* L. on IgA1 induced injury of HUVECs in Henoch-Schönlein Purpura children patients]." *Zhongguo Zhong Xi Yi Jie He Za Zhi.* 2016 Feb; 36(2): 183-7. Chinese.
Chung, C., et al. "Cytopiloyne, a polyacetylenic glucoside from *Bidens pilosa*, acts as a novel anticandidal agent via regulation of macrophages. *J. Ethnopharmacol.* 2016 May; 184:72-80.
Li, Y., et al. "Anti-oxidant activities of different extracts from *Bidens pilosa* L. Var. radiata." *J. Food Sci. Tech*. 2016; 53(1): 43–49.
Bastos, C., et al. "Use of *Bidens pilosa* L. (Asteraceae) and *Curcuma longa* L. (Zingiberaceae) to treat intestinal mucositis in mice: Toxico-pharmacological evaluations."*Toxicol. Rep.* 2015 Oct; 3: 279-287.
de Ávila, P., et al. "Mucoadhesive formulation of *Bidens pilosa* L. (Asteraceae) reduces intestinal injury from 5-fluorouracil-induced mucositis in mice."*Toxicol. Rep.* 2015 Mar; 2: 563-573.
Adedara, I., et al. "Anti-oxidant and anti-inflammatory activities of *Bidens pilosa*." *J. Ethnopharmacol*. 2015; 159: 266–273.
Wu, J., et al. "Investigation of the extracts from *Bidens pilosa* Linn. var. radiata Sch. Bip. for antioxidant activities and cytotoxicity against human tumor cells." *J. Nat. Med.* 2013 Jan; 67(1): 17-26.
Liu, J., et al. "Effect of floral sources on the antioxidant, antimicrobial, and anti-inflammatory activities of honeys in Taiwan." *Food Chem.* 2013 Aug; 139(1-4): 938-43.
Chipurura, B., et al. "Wild leafy vegetables consumed in Buhera District of Zimbabwe and their phenolic compounds content."*Ecol. Food Nutr.* 2013; 52(2): 178-89.
Lee, W., et al. "Extraction of antioxidant components from *Bidens pilosa* flowers and their uptake by human intestinal Caco-2 cells. "*Molecules*. 2013 Jan; 18(2): 1582-601.

Kil, J., et al. “Okanin, a chalcone found in the genus *Bidens*, and 3-penten-2-one inhibit inducible nitric oxide synthase expression via heme oxygenase-1 induction in RAW264.7 macrophages activated with lipopolysaccharide.” *J. Clin. Biochem. Nutr.* 2012 Jan; 50(1): 53-8.
Kviecinski, M., et al. "Brazilian *Bidens pilosa* Linné yields fraction containing quercetin-derived flavonoid with free radical scavenger activity and hepatoprotective effects." *Libyan J. Med.* 2011 Jan 18; 6.
Adedapo, A., et al. "Comparison of the nutritive value and biological activities of the acetone, methanol and water extracts of the leaves of *Bidens pilosa* and *Chenopodium album." Acta Pol. Pharm.* 2011 Jan-Feb; 68(1): 83-92.
Kviecinski, M., et al. "Brazilian *Bidens pilosa* Linné yields fraction containing quercetin-derived flavonoid with free radical scavenger activity and hepatoprotective effects." *Libyan J. Med.* 2011 Jan 18; 6.
Horiuchi, M., et al. "Effects of *Bidens pilosa* L. var. radiata Scherff on experimental gastric lesion." *J. Nat. Med*. 2010 Oct;64(4):430-5.
Suzigan, M., et al. "An acqueous extract of *Bidens pilosa* L. protects liver from cholestatic disease: experimental study in young rats." *Acta Cir. Bras.* 2009 Sep-Oct; 24(5): 347-52.
Yuan, L., et al. "Protective effects of total flavonoids of *Bidens pilosa* L. (TFB) on animal liver injury and liver fibrosis." *J. Ethnopharmacol*. 2008 Mar 28; 116(3): 539-46.
Chang, C., et al. "Cytopiloyne, a polyacetylenic glucoside, prevents type 1 diabetes in nonobese diabetic mice." *J. Immunol.* 2007 Jun 1; 178(11): 6984-93.
Chang, S., et al. "Flavonoids, centaurein and centaureidin, from *Bidens pilosa*, stimulate IFN-gamma expression." *J. Ethnopharmacol*. 2007 Jun 13; 112(2): 232-6.
Chiang, Y., et al. "Cytopiloyne, a novel polyacetylenic glucoside from *Bidens pilosa*, functions as a T helper cell modulator." *J. Ethnopharmacol.* 2007 Apr 4; 110(3): 532-8.
Chiang, Y., et al. "Cytopiloyne, a novel polyacetylenic glucoside from *Bidens pilosa*, functions as a T helper cell modulator." *J. Ethnopharmacol.* 2006 Oct 19;
Yang, H., et al. "Protection from oxidative damage using *Bidens pilosa* extracts in normal human erythrocytes." *Food Chem. Toxicol.* 2006 Sep; 44(9): 1513-21.
Abajo, C., et al. "*In vitro* study of the antioxidant and immunomodulatory activity of aqueous infusion of *Bidens pilosa*." *J. Ethnopharmacol*. 2004 Aug; 93(2-3): 319-23.
Chang, S., et al. "Polyacetylenic compounds and butanol fraction from *Bidens pilosa* can modulate the differentiation of helper T cells and prevent autoimmune diabetes in non-obese diabetic mice." *Planta Med.* 2004; 70(11):1045-51.
Chiang, Y., et al. "Metabolite profiling and chemopreventive bioactivity of plant extracts from *Bidens pilosa*." *J. Ethnopharmacol.* 2004 Dec; 95(2-3): 409-19.
Usami, E., et al. "Assessment of antioxidant activity of natural compound by water- and lipid-soluble antioxidant factor" *Yakugaku Zasshi.* 2004; 124(11): 847-50.
Chin, H., et al. "The hepatoprotective effects of Taiwan folk medicine ‘ham-hong-chho’ in rats." *Am. J. Chin. Med*. 1996; 24(3-4): 231-40.

**Return to the Tropical Database file for Picão Preto**