

Neurology Congress 2019: Anticonvulsant and antioxidant effects of the polysaccharide rich extract of *Genipa americana* leaves - Edna Maria Camelo Chaves - Universidade Estadual do Ceará-UECE

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Introduction: Plant polysaccharides present neuroprotective effects (antioxidant and anti-inflammatory). This analysis expected to chemically characterize a polysaccharide-rich extract (PRE) obtained from *Genipa americana* leaves and assess its neuroprotective impact in the mind morphology and oxidative markers utilizing mice social models.

Genipa americana history of the U.S is a restorative plant prevalently known as "jenipapo", which happens in Brazil and has a place with the Rubiaceae family. It is an animal varieties broadly circulated in the tropical Central and South America, particularly in the Cerrado biome. Their leaves and organic products are utilized as food and prominently in society medication to treat anemias, as an antidiarrheal, and hostile to syphilitic. Iridoids are the principle optional metabolites portrayed from G. History of the U.S, yet barely any examinations have been directed with their leaves. In this examination, the point was to synthetic methodology for recognizing the principle mixes present at the concentrate of G. History of the U.S leaves. The powdered leaves were removed by maceration with EtOH: water (70:30, v/v), following fluid segment with oil ether, chloroform, ethyl acetic acid derivation and n-butanol. An aggregate of 13 mixes were distinguished. Furthermore three flavonoids were disjoined from the ethyl acetic acid derivation division: quercetin-3-O-robinoside (GAF 1), kaempferol-3-O-robinoside (GAF 2) and isorhamnetin-3-O-robinoside (GAF 3) and, from n-butanol part progressively two flavonoids were segregated, kaempferol-3-O-robinoside-7-O-rhamnoside (robinin) (GAF 4) and isorhamnetin-3-O-robinoside-7-rhamnoside (GAF 5). Synthetic structures of these five flavonoids were clarified utilizing spectroscopic techniques (MS, 1H and 13C-NMR 1D and 2D).

Objective: Evaluate in male Swiss mice the anticonvulsant and antioxidant effects of the polysaccharide-extract of *Genipa americana* leaves (PE-Ga).

Methodology: PE-Ga was obtained by depigmentation (methanol) of dry powder (5 g) and extraction with NaOH. Protocols were approved by the Ethic Committee for the use of experimental animals (CEUA/UECE N° 2451142/2014). PE-Ga (1 or 9 mg/kg) or saline was daily administered by intraperitoneal (i.p.) route for 30 days.

Sham animals received 15 applications of sub maximal convulsive dose of pentylenetetrazole-PTZ (40 mg/kg, i.p.) in alternating days. Animals were monitored for seizures during 30 min, classified according to Racine scale (score: 0-6). Prefrontal cortex (CPF), hippocampus (HC) and striatum were removed for oxidative stress quantification. Data (Mean± SEM; n=8) were analyzed by One Way ANOVA and Newman-Keuls tests.

Results: PE-Ga (9 mg/kg) reduced seizures at all days compared to sham. At days 27 and 29, PE-Ga showed more efficacy at 9 mg/kg (1.28 ± 0.18 vs. 2.46 ± 0.36) than at 1 mg/kg (1.71 ± 0.18 vs. 2.85 ± 0.26), respectively. PE-Ga reduced malondyaldehyde ($\mu\text{g/g}$ tissue) in CPF (1 mg/kg: 413.8 ± 70.19 ; 9 mg/kg: 459.9 ± 65.64 vs. PTZ: 810.5 ± 32.16), HC (1 mg/kg: 609.0 ± 65.63 ; 9 mg/kg: 473.6 ± 60.51 vs. PTZ: 745.4 ± 65.17) and striatum (9 mg/kg: 451.9 ± 99.44 vs PTZ: 918.1 ± 40.14), but did not alter reduced-glutathione. FTIR range indicated groups around 3417 cm^{-1} and 2928 cm^{-1} , comparative with the vibrational extending of OH and CH, separately. 1H NMR range uncovered signs at δ 3.85 (methoxyl gatherings) and δ 2.4 (acetyl) ppm. 13C NMR range uncovered signs at δ 108.0 and δ 61.5 ppm, relating to C1 and C5 of α -L-arabinofuranosyl buildups. PRE introduced focal inhibitory impact, expanding the dormancy for PTZ-prompted seizures by 63% (9 mg/kg) and 55% (27 mg/kg), and the inactivity to death by 73% (9 mg/kg) and 72% (27 mg/kg). The two impacts were switched by the relationship with flumazenil.

Conclusion: PE-Ga protects seizures and oxidative stress induced by PTZ in mice. PRE, containing a heteropolysaccharide, presents cancer prevention agent and anticonvulsant impact in the model of PTZ-initiated seizures by means of gamma-aminobutyric corrosive (GABA), diminishing the quantity of hippocampal dark neurons. GaEPL indicated critical action against the epimastigote, trypomastigote and amastigote types of *T. cruzi* strain Y, proposing cell demise by rot with inclusion of receptive oxygen species.

Keywords: Seizures. Oxidative stress, *Genipa americana*, Plant polysaccharide.