



***PHYTOCHEMICAL PROFILE AND EVALUATION OF THE ANTIOXIDANT POTENTIAL OF THE PLANT SPECIES *Lippia alba*, *Petiveria alliacea* Linn, AND *Eryngium foetidum* FROM THE ALTO SAN JUAN BIOLOGICAL CORRIDOR, RISARALDA, COLOMBIA***

**Gustavo Alfonso Cifuentes Colorado**<sup>1\*</sup>, Oscar Marino Mosquera Martínez<sup>1\*</sup>, Jaime Alejandro Martínez Acosta<sup>1</sup>, Juan David Yarce Botero<sup>1</sup>

\*[Gustavo.cifuentes@utp.edu.co](mailto:Gustavo.cifuentes@utp.edu.co), \*[omosquer@utp.edu.co](mailto:omosquer@utp.edu.co)

*1-Grupo de Investigación Biotecnología-Productos Naturales, Escuela de Química, Facultad de Tecnología, Universidad Tecnológica de Pereira, Carrera 27 # 10-02, Barrio Álamos, Pereira-Risaralda, Colombia.*

Bioprospecting is presented as a key strategy to conserve and value the plant resources of the Alto San Juan biological corridor, which are vital for the subsistence of Afro-descendant communities and are threatened by misuse and climate change. This work aimed to characterize the phytochemical profile and evaluate the antioxidant potential of the ethanolic extracts of leaves and stems of *Lippia alba* (*Verbenaceae*), *Petiveria alliacea* Linn (*Petiveriaceae*), and *Eryngium foetidum* (*Apiaceae*), three species selected participatively with the communities for their use in traditional medicine. Se identificaron principales grupos de metabolitos secundarios por cromatografía de capa delgada (TLC). The main groups of secondary metabolites were identified by thin-layer chromatography (TLC). The antioxidant capacity was determined by three assays: DPPH radical scavenging, Total Antioxidant Capacity (TAC), and Oxygen Radical Absorbance Capacity (ORAC). In all three species, **tannins, phenols, anthraquinones, sterols, terpenes, saponins, and triterpenes** were detected. The presence of **flavonoids** in *Petiveria alliacea* Linn is highlighted. The ethanolic extract of *Lippia alba* showed a TAC value of  $144.22 \pm 2.8$  (mg GAE g extract<sup>-1</sup>), an activity 49% and 41% higher compared to the ethanolic extracts of *Petiveria alliacea* Linn and *Eryngium foetidum*, respectively. In the ORAC assay, the ethanolic extract of *Lippia alba* presented a value of  $1772.2 \pm 196.9$  (μmol Trolox g extract<sup>-1</sup>), this being 70% and 38% higher compared to the ethanolic extracts of *Petiveria alliacea* Linn and *Eryngium foetidum*, respectively. On the other hand, the three extracts show values close to  $100 \pm 10$  (μmol Trolox g extract<sup>-1</sup>) in the DPPH assay. The results highlight a high diversity of secondary metabolites and the bioactive potential of these plant species, positioning *Lippia alba* as a promising source of natural antioxidants.

**Keywords:** antioxidant activity, phytochemical screening, bioprospecting, secondary metabolites.

