

# Archives of Pharmacy and Pharmaceutical Sciences

Volume - 8, Issue - 1

Research Article

Published Date:-2024-04-25 10:51:33

## [Toxicity and Phytochemical Analysis of Five Medicinal Plants](#)

Recent studies have shown that long-term uses of herbs have been associated with a rise in morbidity and mortality rates. While most researches are focused on bioactivity investigations, the toxicity of many plants has not been reported. There is a paucity of data on the potential toxicity of the following plants: *Harungana madagascariensis* (HM), *Pterocarpus osun* (PO), *Phoenix dactylifera* (PD), *Annona muricata* (AM), and *Rutidea parviflora* (RP). To evaluate the toxicity of the above-mentioned plants; two tests were employed namely: The Brine shrimp lethality test (BSLT) and the *Allium cepa* test. A correlation between the oral acute toxicity assay in mice and the LC<sub>50</sub> obtained from BSLT has been established. *Allium cepa* test measures the potential genotoxic effects of plant extracts exerted on the root meristem of *A. cepa* (onions). Plant extracts were administered in concentrations ranging from 100 to 2500 µg/ml to the *A. cepa* for 72 h to obtain their Mitotic Indices (MI) and EC<sub>50</sub>. Results of the MI at 2500 µg/ml for HM, PO, PD, AM, and RP were 3.75, 4.96, 5.96, 6.10, and 6.71 while 281.81, 398.11, 501.19, 630.96, and 707.9 µg/ml were obtained as the respective EC<sub>50</sub> values. Furthermore, 10-1000 mcg/ml concentrations were administered in the BSLT and the obtained LC<sub>50</sub> values were 116.3, 250, 581.5, 581.5, and 750 µg/ml. The toxicity result demonstrated that the five plants were moderately toxic, with RP exhibiting minimal toxicity values and thus potentially having a good safety profile. The phytochemical screening of these plants revealed the presence of some pharmacologically important classes of compounds that are abundant. Several bioactive and toxic compounds were identified in the GC-MS analysis for some of the plants.

---

Research Article

Published Date:-2024-04-08 12:24:38

## [Antibacterial Screening of \*Lippia organoides\* Essential Oil on Gram-negative Bacteria](#)

Essential oils (EO) are extracted from different plant species and can be present in different plant organs. Rosemary-pepper EO is composed of around 50% to 70% thymol, a phenolic compound proven to be active against fungi and bacteria. The active components present in these compounds can affect the vital functionality of bacterial cells, leading to protein denaturation and cell lysis. Therefore, the present study aims to evaluate in vitro the antibacterial potential of *Lippia organoides* EO against gram-negative bacteria. This is an exploratory study, with a technical-experimental procedure, with a quantitative approach, carried out at the Federal University of Campina Grande. The strains used were *Pseudomonas aeruginosa* ATCC 27853, *Proteus mirabilis* ATCC 25933, and *Escherichia coli* ATCC 25922, using concentrations of 1024, 512, 256, and 128 µg/ml using the disc diffusion method in triplicate. After the incubation period, the formation of halos of bacterial growth inhibition was not observed. There are possible causes for the lack of antibacterial activity of the EO concerning the strains of gram-negative bacteria used in the study, including the possibility of not containing components with antibacterial properties in concentrations sufficient for the expected activity at the concentrations tested. Based on the results obtained, the Rosemary-Pepper EO (*Lippia organoides*) did not demonstrate antimicrobial activity against the gram-negative bacteria used in the study. Therefore, the development of new research with *Lippia organoides* essential oil with gram-positive bacteria is suggested.

---

Research Article

Published Date:-2024-03-29 12:00:52

## [Next Generation Tools in mRNA Purification: The Role of Continuous Raman Spectroscopy Testing with Pretreatment of the Sample](#)

---

In the biopharmaceutical production field, the purification process is a crucial step in order to obtain Drugs with an impurity profile according to the regulatory agency requirement.

The aim of this work is to verify some relevant and recent literature and after analysis to submit to the researcher new Solutions in order to improve global safety and the toxicological profile: Submit a project related to the continuous testing of the purified materials using Raman spectroscopy – with pre-treatment of the sample: using solvents.

Nanolipids Payload of Biopharmaceutical is not efficiently detected by direct Raman spectroscopy allowed by the regulatory agency for PAT process analytical technology.

---

## Research Article

Published Date:-2024-03-29 12:00:37

### [Correlation of Inappropriate use of Ceftriaxone and Bacterial Resistance in the Hospital Environment: Integrative Review](#)

**Introduction:** Bacterial resistance is a threat to public health, as it is estimated that 37,000 people die due to hospital infections, most of them due to multidrug-resistant bacteria. In part, this resistance is due to the inappropriate use of antibiotics, with ceftriaxone being one of the most used. Therefore, this article aims to analyze the consequences of using ceftriaxone in the hospital environment.

**Methodology:** This is an integrative qualitative review, following the PICO strategy, using the Embase, BVS, and Pubmed databases, with the guiding question being: "In patients admitted to a hospital environment (P), is ceftriaxone used appropriately (I) for the treatment of infections (CO)?" and the time frame from 2013 to 2023.

**Results:** 272 articles were found in total, 46 obtained from the VHL, 62 from PubMed, and 164 from Embase. Of these, 66 were duplicates, leaving 206 works for title and summary reading. After reading, 79 were selected for full reading, with 7 articles ultimately being selected for the study. An average of 62.3% of inappropriate use was found, with the minimum value found being 19% and the maximum being 87.9%. The main reasons for this use were: indication, dose, frequency, and duration.

**Conclusion:** From reading the articles, it is concluded that the inappropriate use of ceftriaxone is mainly due to: indication, dose, frequency, and duration of treatment. These elements must be monitored, as their inappropriate use increases the length of hospital stay and may be associated with the emergence of bacterial resistance.

---

## Review Article

Published Date:-2024-03-28 00:00:00

### [The Cortisol Connection: Weight Gain and Stress Hormones](#)

Weight gain can be good or bad for health. Benefits include increased health for overweight people, disease or surgical recovery, and more. Health concerns, joint and musculoskeletal disorders, respiratory issues, metabolic abnormalities, cardiovascular health, psychological impact, reduced mobility, digestive troubles, hormonal changes, and cancer risk are negative impacts. Weight gain outcomes depend on heredity, weight distribution, and health.

Maintaining a healthy weight needs a balanced diet, regular exercise, and stress management. A doctor or nutritionist can offer personalized weight management advice. Stress chemicals like cortisol trigger weight gain. ACTH stimulates adrenal glands to release cortisol, which increases hunger, fat storage, insulin resistance, and muscle loss. Understanding how stress hormones like cortisol affect weight gain is vital to reducing chronic stress's health risks. Stress reduction, a balanced diet, regular exercise, proper sleep, social support, and professional treatment can mitigate these outcomes. Ultimately, stress hormones like cortisol can cause weight gain, but a holistic strategy tackling physical and psychological stress can help people maintain a healthy weight.

---

## Research Article

Published Date:-2024-03-19 17:19:34

### [Evaluation of the Anti-inflammatory Activity of Equisetum arvense and Baccharis trimera Fractions](#)

---

Inflammation is a natural response of the body to defend itself against potential threats and can be reduced through physical activity, proper nutrition, and the use of herbal medicines, which are medicinal plants. In the study, we aim to examine the anti-inflammatory effects of the volatile and ethanolic fractions of two commonly used medicinal plants, *Equisetum arvense*, and *Baccharis trimera*. The essential oils were obtained by hydrodistillation of the fresh leaves of the plants, while the ethanolic extracts were obtained using classical methodologies. All fractions were tested for anti-inflammatory activity, evaluating their ability to stabilize the red blood cell membrane and inhibit the spreading, and phagocytosis by macrophages, at concentrations varying from 200 to 600 µg mL<sup>-1</sup>. The results of the experiments suggest that the ethanolic fraction of *B. trimera* shows promising results compared to the positive controls. Our investigations thus contribute to the specialized literature on the use of herbal medicines around nutrition, providing guidance for future studies on these fractions.

---

**Case Report**                      **Published Date:-2024-02-13 15:39:01**

[Acyclovir Induced Acute Kidney Injury: A Case Report](#)

Herpes zoster ophthalmicus, commonly referred to as shingles, manifests as a painful skin rash affecting one or more dermatome distributions of the trigeminal nerve, which supplies sensory innervation to the eye and its surrounding structures. Acyclovir stands as the primary pharmacological intervention for the treatment of this condition. However, its administration is associated with a notable risk of adverse effects, with acute kidney injury being the most prevalent. Herein, we present a case report involving a 59-year-old female patient who developed acute kidney injury after the prescription of Acyclovir for the management of herpes zoster ophthalmicus. This case underscores the importance of vigilance regarding potential renal complications associated with Acyclovir therapy, particularly in susceptible patient populations.

---