
Analgesic and Antipyretic Potential of An Ethnobotanical Plant, *Alstonia scholaris* L. in Mice

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Abstract Medicinal plants have been used for treatment of diseases since ancient times. In addition, plants are cost effective and less harmful than the synthetically produced drugs. Therefore, there is a need to evaluate the medicinal properties of plants. The study aims to determine the analgesic and anti-pyretic property of the *A. scholaris* leaves from Brgy. Sta Fe, Imugan, Nueva Vizcaya, Philippines. *A. scholaris* leaves were extracted by hot water extraction (HWE) technique. A setup of thirty mice was used for the two tests with three treatments each with five replicates. Based on the results of the study, *A. scholaris* HWE is significantly comparable to the positive control. Hence, *A. scholaris* HWE has analgesic and antipyretic properties.

Keywords: analgesic, antipyretic, mice

Introduction

Many plant species play an important role in local healing practices and that knowledge of traditional medicine is still utilized and plays a significant role on different places, here in the Philippines. The documentation of this rich traditional ethno-medicinal knowledge has furnished us with novel information that not only will provide recognition of this undocumented knowledge but also could provide new avenues for pharmacological investigations to improve healthcare for a range of ailments (Abe *et al.*, 2012).

Products of higher plant origin have been known to be effective sources of chemotherapeutic agents without any underlying effects. Plants continue to be a major source of medicines, as they have been throughout human history. The use of medicinal plants all over the world predates the introduction of antibiotics and other modern drugs (Papaya, 2003).

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In an isolated area that was far away from the civilization, folks have different ways of medication. They are using varieties of plant that has medicinal property to ease pain, to heal wound and to medicate fever. For the past decade there are many researches about many botanical plants and some of this researches resulted into the discoveries of many medicinal plant. In Imugan, Nueva Viscaya, a mountainous area in Luzon, there were numbers of unknown plant were found that may contain medicinal property for different illness. For the past year, the said area was a source of different varieties of plants that was used for many researches. The present study was designed to evaluate its analgesic, anti-inflammatory, anti-pyretic and analgesic properties in rodent so as to scientifically describe the potential values of the plant, which is already in common use in traditional medicine.

Materials and methods

Hot Water Extraction

The plant material was pulverized and hot water extract was prepared using 15 grams of pulverized leaves in 1000ml of boiling distilled water for 30 minutes

Animals and Treatment

Thirty male albino mice weighing 7.31 – 26.65 g were used in the study. The animals maintained under standard environmental condition and had access to feed and water *ad libitum*.

Analgesic Activity

Mice were treated orally with the *A. scholaris* HWE. Paracetamol was used as a positive control at 250 mg/ 5ml concentration. Negative control mice were given distilled water. Treatments were administered thirty minutes prior to 7% acetic acid injection. The numbers of squirms were recorded.

Anti- Pyretic Activity

The initial temperatures of the mice were taken using digital thermometer. After taking the initial temperature, the mice were orally treated with 15% aqueous brewers yeast solution to induce fever. Thirty minutes after inducing fever, the mice with an increased temperature of approximately 0.5°C,

were given treatments. Paracetamol was used as positive control .The final temperatures of the mice were taken after administration of the treatments.

Results

The number of squirms in the group treated with *A. scholaris* hot water extract is not significantly different with the group treated with Paracetamol. Moreover the number of squirms in the mice treated with *A. scholaris* hot water extract is significantly lower as compared to that of the group administered with distilled water.

The changes in temperature between groups treated with *A. scholaris* hot water extract (ASHE) and Paracetamol, after inducing pyrexia, are not significantly different. This implies that *A. scholaris* hot water extract has an analgesic effect which is comparable to that of the positive control, Paracetamol.

Conclusion and recommendation

This study proved the analgesic and anti- pyretic properties of the ethnobotanical plant, *Alstonia scholaris*. It is therefore recommended that the plant extract be analyzed for its bioactive components.

References

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