

# Evaluation of the Anti-Inflammatory Activity of Semi-Purified Glycoside Extracted from the Leaves of *Plumeriarubra* (Kalachuchi)



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## Introduction

The researchers focused on skin inflammation. An inflammation is a biological response of the body aiming to remove the harmful stimuli that affects a part of our body. Based on visual observation, the ancients characterized inflammation by five cardinal signs; heat (calor) is caused by the increased movement of blood through dilated vessels into the environmentally cooled extremities, also resulting on the increased redness (rubor), swelling (tumor) is the result of increased passage of fluid from dilated and permeable blood vessels into the surrounding tissues, infiltration of cells into the damaged area, and in prolonged inflammatory responses deposition of connective tissue, pain (dolor) is due to the direct effects of mediators, either from initial damage or that resulting from the inflammatory response itself, and the stretching of sensory nerves due to oedema and loss of function (functiolaesa) refers to either simple loss of mobility in a joint. (Punchard N.A., Whelan C.J., Adcock I., 2004)[1-3].

## Methodology

Studies were conducted using Sprague-dawley male rats having an average weight of 100- 160 grams. They were obtained from the animal house to be acclimatized to laboratory condition for three weeks before starting the experiment. Three rats were used for each step. The initial dose used was from 5mg/kg, 50mg/kg, 300mg/kg, and 2000 mg/kg body weight. The starting dose level should be that which is most likely to produce mortality in some of the dosed rats. A limit test should be conducted when the available information suggests that mortality is unlikely at the highest starting dose. It is recommended to use the starting dose of 300mg/kg when there is no information on a substance to be tested [4].

## Result and Discussion

Carrageenan induced paw edema was the method used in the induction of inflammation due to the reason that, carrageenan is

the phlogistic agent of choice. It is considered to be antigenic and has no systemic effect. As described by winter, the inflammation produced by carrageenan is acute, non-immune, well-researched and highly reproducible. The result of the Biological Testing using Carrageenan Induced Paw Edema shows that the 750 mg concentration of the extract exhibits the highest anti-inflammatory effect among the three concentrations [5].

## Conclusion

After the phytochemical screening of the semi-purified glycoside extract the leaves of *P.rubra* constitute Alkaloids, Flavonoids, Glycosides, and Tannins. Based on the results obtained from the Fourier Transport Infrared Spectroscopy high amount of polyphenolic compound is found which indicates the presence of Glycosides. Therefore the researchers conclude that the Glycoside is the one that exhibits anti-inflammatory activity. After the Acute Oral Toxicity Testing, the researchers conclude that the extract of *P. rubra* administered is safe. There is significant difference between the anti-inflammatory activity of the 250 mg/kg and 500 mg/kg concentration and the positive control. There is no significant difference between the anti-inflammatory activities of the 750 mg/kg concentration derived from the leaves of *P. rubra* and the positive control.

## Recommendations

After evaluating the anti-inflammatory activity of the semi-purified glycoside extracted from the leaves of *Plumeriarubra* the researchers comes up with the following recommendation to widen the study regarding the activity of the plant especially on its anti-inflammatory.

The following were recommended for future studies:

- a) To conduct further studies about the anti-inflammatory activity of *P. rubra*

- b) To isolate the pure compound that elicits the anti-inflammatory effect of *P. rubra*
- c) To formulate a dosage form that is benefit for the isolated compound.
- d) 7.4. To further develop another study using the other parts of *P. rubra*.
- e) 7.5. To accentuate the other pharmacological uses of *P. rubra* using other solvent.
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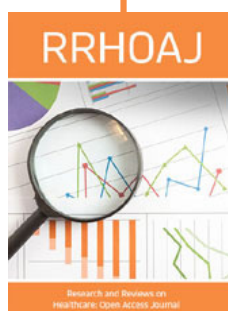
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