

April 16-17, 2018 Amsterdam, Netherlands

F Marhoume et al., Am J Ethnomed 2018, Volume 5 DOI: 10.21767/2348-9502-C1-005 6<sup>th</sup> Edition of International Conference on

## Pharmacognosy and Medicinal Plants

## PROTECTIVE EFFECT OF BUTANOLIC AND ETHYL ACETATE FRACTIONS of Rubia Tinctorum Extract Against Calcium Oxalate Induced Urolithiasis in Rats

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**Objective:** The current study investigated the antiurolithiatic effect of some fractions of methanolic whole plant extract of *Rubia tinctorum* (RT) in rats.

**Methods:** The RT was successively extracted with, ethyl acetate, butanol and water to obtain fractions. Calcium oxalate urolitihiasis was induced in rats by ethylene glycol-ammonium chloride feeding in drinking water for 10 days. These rats were treated with two doses (1000 and 2000 mg/kg) of the fractions. Antiurolithiatic activity was assessed by estimating biochemical changes in serum, urine and histological changes in kidney tissue.

**Results:** Sodium oxalate administration caused biochemical alterations in urine which was found to be prevented significantly by the butanolic and ethyl acetate fractions. Supplementation with butanolic and ethyl acetate fraction prevented the elevation of serum creatinine, urea, uric acid, phosphor and calcium levels. The butanolic and ethyl acetate fractions also caused significant decrease in lipid peroxidation activity, accumulation of calcium oxalate deposits and histological changes in the kidney tissue.

**Conclusion:** The results showed that the antiurolithiatic component of the methanolic *Rubia tinctorum* extract of the plant is contained in the butanolic and ethyl acetate fractions. The effect is associated to its diuretic, antioxidant, nephroprotective properties and effect on lowering the concentration of urinary stone-forming constituents.

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