

Antioxidant, anti-inflammatory and antibacterial potentials of aqueous leaf extract of *Pouteria campechiana* (Kunth) *Baehni* (Ratalawulu)

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Antioxidants are of dietary importance in preventing oxidative stress due to the production of excess free radicals in our body leading to many diseases including cancer, atherosclerosis and diabetes as well in aging. Despite the advances in modern medicine, plant-based remedies play an important role in healthcare due to less side effects. Due to the side effects of NSAIDs and antibiotics, plant-based remedies would be beneficial. This study was conducted to assess the potential use of *P. campechiana* (Ratalawulu) as an antioxidant, anti-inflammatory and antibacterial agent. The aqueous leaf extract of Ratalawulu was prepared according to the method of decoction preparation in ayurvedic medicine. All assays were carried out according to previously published procedures. Aqueous leaf extract of *P. Baehni* showed a Total Phenolic Content of 230.71 ± 7.62 mg (PGE)/g in the Folin-Ciocalteu method. Total flavonoid content was 140.98 ± 98.46 mg (QE)/g according to AlCl_3 colorimetric assay [PGE- Pyrogallol equivalence, QE- Quercetin equivalence]. 2,2-Diphenyl-1-picrylhydrazyl radical scavenging activity of aqueous leaf extract of *P. Baehni* ranged between 1.4%-17.8% for concentration between 0.01-0.1 mg/ml whereas ascorbic acid showed 2.46%-43.93% for the same concentration range. Ferric ion reducing assay for aqueous leaf extract of *P. Baehni* showed gradual increase in reducing property relating to antioxidant action by donating a hydrogen atom to break free radical chains. Hydroxyl scavenging activity showed 5.73%-44.03% for concentration series of 20-100 mg/ml whereas, Ascorbic acid ranged from 9.40%-47.06%. Hydroxyl radical is one of the potent reactive oxygen species in the biological system. Nitric oxide scavenging anti-inflammatory assay showed 58.06%-75.36% whereas ascorbic acid showed 80.73%-91.76% for concentration series of 0.4-6.4 mg/ml. In the human red blood cell assay, percentage protection by aqueous leaf extract of *P. Baehni* was 15.0%-62.4% and that of ascorbic acid was 12.1%-72.8% for 6.0-300 $\mu\text{g}/\text{ml}$. Aqueous leaf extract of *P. Baehni* also showed antibacterial activity against *Staphylococcus aureus*. Taken together, these results suggest the potential use of aqueous leaf extract of *P. Baehni* as an antioxidant, anti-inflammatory and antibacterial agent, and merit further related investigation.

Keywords: Ratalawulu, Antioxidant, Anti-inflammatory, Antibacterial

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