



3rd INTERNATIONAL CONFERENCE on FOOD, AGRICULTURE and VETERINARY

19 - 20 JUNE 2021 / IZMIR

CONFERENCE PROCEEDINGS BOOK

EDITORS

Prof. Dr. Behcet KIR

Assoc. Prof. Dr. Seyithan SEYDOSOGLU



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Issued: 05/07/2021

ISBN: 978-625-7720-43-4

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**EFFECTS OF COLD AND HOT EXTRACTION PROCESSES ON
PHYTOCHEMICAL CONSTITUENTS AND ANTIOXIDANT ACTIVITIES OF
METHANOL EXTRACT OF *Taminalia catappa* LEAVES**

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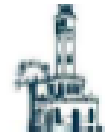
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ABSTRACT

The effects of cold and hot extraction processes on phytochemical constituents and antioxidant activities of methanol extract of *Taminalia catappa* leaves were carried out using standard methods. The qualitative screening of hot methanol extracted sample (HTC) revealed the presence of total phenols, flavonoids, tannins, saponins, alkaloids, reducing sugars, phlobatannins, anthraquinones, glycosides and steroids while cold methanol extracted sample (CTC) showed the presence of all aforementioned phytochemicals except reducing sugars and steroids. Both extracts exhibit percentage scavenging activities of 2, 2-diphenyl-1-picrylhydrazyl radicals (DPPH) in dose dependent manner with the highest percentage in 1000 μ g/mL (70.14 \pm 0.06 and 50.30 \pm 0.24) % and lowest at 125 μ g/mL (62.37 \pm 0.41 and 44.31 \pm 0.21) % for CTC and HTC respectively. The percentage inhibition of lipid peroxidation is significantly high in HTC (84.14 \pm 0.05) % when compared with CTC (70.14 \pm 0.06) % at the concentration of 1000 μ g/mL. Although, the % DPPH scavenging activities of both extracts are not comparable to the Gallic acid at 1000 μ g/mL (77.83 \pm 0.06) % as well as other concentrations (500, 250 and 125 μ g/mL). However, HTC exhibits better percentage inhibition of lipid peroxidation (84.14 \pm 0.05) % compared with Gallic acid (77.62 \pm 0.50) % at 1000 μ g/mL. Therefore, both CTC and HTC can further be explored for the management of oxidative-stress related diseases.

Keywords: *T. catappa*, Antioxidant, DPPH, Lipid peroxidation, Oxidative-stress



**ACUTE TOXICOLOGICAL EFFECTS, *IN VITRO* AND *IN VIVO* ANTIMALARIAL
ACTIVITIES OF AQUEOUS ROOT BARK EXTRACT OF *CALOTROPIS PROCERA***

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ABSTRACT

Toxicity of the indigenous herbal plant and emergence of resistant strains of malarial parasite to conventional antimalarial drugs used in the treatment of malaria cannot be underestimated. Therefore, this necessitates continuous search for new non-toxic antimalarial drugs to combat the menace. As such, acute toxicological effects, *in-vitro* and *in-vivo* antimalarial activities of aqueous extracts of *Calotropis procera* root bark were carried out using standard methods. The LD₅₀ was found to be greater than 5000 mg/kg bodyweight as no mortality was observed after the single administration of all selected doses. *In-vitro* antimalarial activities of the aqueous extract at dose 500 µg/mL showed 100 % clearance of the parasite ($P < 0.01$) when compared with 1000 µg/mL, 2000 µg/mL, 5000 µg/mL and ACT. Likewise, aqueous extract at dose of 500 mg/kg bw. showed the highest parasitemia clearance ($P < 0.05$) in *P. berghei* infected mice as compared to the group of mice that received 150 mg/kg bw. and 250 mg/kg bw. of the aqueous extract. Therefore, the results indicate that *C. procera* root bark is practically safe with high *in vitro* and *in vivo* antimalarial activities in red blood cells and *Plasmodium berghei* infected mice respectively.

Keywords: Acute toxicity, aqueous extract, *C. procera*, *Plasmodium berghei*