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STUDY ON THE EFFICACY OF AQUEOUS EXTRACT OF *OCIMUM SANCTUM LINN* LEAVES IN TREATING ACETAMINOPHEN INDUCED LIVER DAMAGED RATS

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ABSTRACT

The in vivo study reveals that non-functional liver enzymes level increases in drug induced hepatotoxicity. Acetaminophen (also commonly known as paracetamol, PCM) is widely used as an over the counter analgesic and antipyretic drug. It is considered as safest drug under therapeutic dosage however overdose of PCM cause hepatic necrosis eventually lead to death. The oxidative stress mediated by oxidative capacities of PCM metabolite (N-acetyl-p-benzoquinoneimine (NAPQI) is considered as the main cause of hepatotoxicity. *Ocimum Sanctum* (Holy Basil) is a well known hepatoprotective herbal plant. Hence this study is conducted to show the efficacy of aqueous extract of *Ocimum Sanctum* (OS) leaves in PCM induced liver damage rats. The aim of this study is to evaluate the histological changes in liver and measures the non-functional enzymes such as Aspartate Transaminase (AST), Alanine Transaminase (ALT) and Total Protein (TP) levels in 21 male Wistar albino rats. The rats were divided into groups of seven consisting of a negative control (without PCM), positive control (treated with silymarin), PCM group, and four treatment group with 100 mg/kg, 200 mg/kg, 300 mg/kg and 400 mg/kg of OS leaves extract. After seven days, the blood withdrawed via retro-orbital plexus and the rats were sacrificed by cervical dislocation. The histological examination results revealed the normal liver cells for control negative group while the PCM group show hepatic necrosis. The other four treated groups showed an increase in new cell formation following the increase in concentration of treatment dosage. The results for AST and ALT showed significance difference between the groups with $p<0.05$. The TP level also revealed significance difference between all the groups with $p<0.05$. These current results suggest that the aqueous extract of OS is effective than the standard drug, Silymarin against PCM induced liver hepatotoxicity in rats. This study thus, concluded that OS leaves extract exhibits potent hepatoprotective activity where at the concentration of 400 mg/kg have significantly reduced the serum AST, ALT and TP level in hepatotoxicity rats.