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## Toxicity assessment of *Erythrophleum ivorense* and *Parquetina nigrescens*

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*Erythrophleum ivorense* and *Parquetina nigrescens* are found growing in tropical regions and they are used in African traditional medicine to treat various ailments including wounds, boils and anaemic conditions. Some species of plant in the *Erythrophleum* genus are also known to be poisonous and toxic to several livestock. However, there is no information on the toxicity of E. *ivorense* and *P. nigrescens*. This study is to determine the cytotoxicity and sub chronic toxicity properties of methanol leaf extract (EIML) and methanol stem barks extract (EIMB) of *E. ivorense* and methanol leaf and aerial part extract of *P. nigrescens* (PNML). Concentrations from 0.1 to 100µg/mL of the extracts were used to determine the influence of the extracts on the release of lactate dehydrogenase (LDH) from HaCaT keratinocytes. The EIML and EIMB extracts showed increase in LDH released from HaCaT keratinocytes at 0.1 to 10µg/mL and 1 to 100 µg/mL for the PNML extracts ($p>0.05$). Wistar rats were orally administered with 100, 300 and 1000mg/kg body weight of the extracts (EIML, EIMB and PNML) for 35 days. Tissues from the kidney and liver of the rats treated with lower doses (100 to 300mg/kg body weight) of EIML extract showed highly vascularized kidneys with numerous glomerular tufts, healthy hepatocytes and sinusoids in liver. However, there were persistent renal tissue inflammation and glomerular degeneration in kidney, and increased inflammatory infiltrates with few vacuolations and scarrings in liver in rats treated with higher extract dose of 1000mg/kg body weight of rat. The rats treated with EIMB extract showed persistent renal and hepatocyte inflammations with glomerular and hepatocyte necrosis at all administered doses (100, 300 and 1000mg/kg body weight) which are indications of renal and hepatic toxicities. Though rats administered with 100 and 300 mg/kg of PNML extract showed renal hemorrhage and inflammation and hepatic inflammation, the rats administered with 1000 mg/kg body weight showed restoring glomerular tufts and improved vasculature and liver with reduced inflammatory infiltrates with healthy hepatocytes. Phytochemical screening of EIML, EIMB and PNML extracts revealed the presence of alkaloids, tannins, flavonoids, sterols, cardiac glycosides and terpenoids.

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## Prenatal ethanol effects on developmental milestones, locomotor activity and attention of rats

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There are numerous reports in the literature about cognitive and neuroanatomical abnormalities associated with Prenatal Exposure to Ethanol (PEE). However, the literature is inconsistent with respect to the effects of small doses of ethanol (equivalent to one to two drinks a week) on the offspring. Furthermore, epidemiological studies testing for an association between PEE and the occurrence of symptoms that are characteristic of Attention Deficit Hyperactivity Disorder (ADHD) have yielded inconsistent results and attempts to verify the effects of prenatal alcohol exposure on attention in animal models are scarce. We investigated the role of dose of ethanol during pregnancy in relation to possible developmental and attentional impairments in the offspring of rats. By using liquid diets, we compared the effects of a standard (35% ethanol-derived calories - EDC) and a lower dose (10% EDC) of prenatal ethanol on developmental milestones - weight, negative geotaxis, grip strength-locomotor activity and attention in the offspring. Our results showed that PEE results in developmental impairment s and hyperactivity at the high – standard dose exposure. By using the five choice reaction time tasks, a robust method to evaluate attention, we also demonstrated that prenatal ethanol can produce deficits associated with an increase in attentional demand in rodents, analogous to those observed in fetal alcohol syndrome and attentional deficit and hyperactivity disorders.

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