

# VIRTUAL MEDICAL RESEARCH SYMPOSIUM



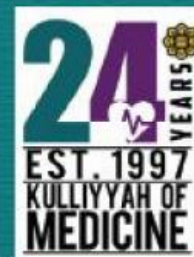
MEDICAL RESEARCH  
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## ABSTRACT BOOK



PNC201

**EFFECT OF MAHKOTA DEWA FRUIT EXTRACT ON KIDNEY FUNCTIONS IN MICE**

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**Introduction:** Mahkota dewa fruit is known for its antidiabetic effect and is commonly used in Malaysia, Indonesia, Philippine, Thailand and Oceania. However, there is still insufficient information available to validate the safe dose of the fruit extract for human use. Hence, the aim of this research was to determine the safe dose for renal function in mice. **Materials and Methods:** [MM2] The subcritical liquid carbon dioxide extract of Mahkota dewa fruit was prepared and administered via oral gavage to two groups (normal and 3000 mg/kg bw based on up and down procedure) for acute toxicity according to the OECD-425, 2008 and five groups viz. normal control, 250, 500, 1000 and 2000 mg/kg bw for sub-acute toxicity according to the OECD-407, 2008. The renal function parameters such as urea, creatinine and morphological observation of kidney tissue were analysed. **Results:** [MM3] The extract exhibited no mortality, morbidity, and no change in general behaviour up to a dosage of 3000 mg/kg body weight ( $LD_{50} > 3000$  mg/kg). [MM4] The result of urea markedly rose to 76.71 mg/dL and 87.38 mg/dL compared to the control group (48.46 mg/dL) at doses of 1000 and 2000 mg/kg bw respectively. Similarly, creatinine value was also increased 0.87 mg/dL and 0.94 mg/dL compared to the control group (0.61 mg/dL) at doses of 1000 and 2000 mg/kg bw respectively. Moreover, the abnormal morphological finding was also found such as dilated tubules, focal degeneration, apoptosis, renal lesions/tissue haemorrhages of kidney tissue in the same doses (1000 and 2000 mg/kg bw. On the other hand, normal biochemical and histological findings were found at doses of 250 and 500 mg/kg bw in comparison to the normal control group. **Conclusion:** The findings revealed that Mahkota dewa fruit extract up to 500 mg/kg bw is a safe dose that would offer a greater therapeutic benefit without causing any nephrotoxicity effects. However, further clinical trials are still warranted to determine a safe dose before its commercialization.

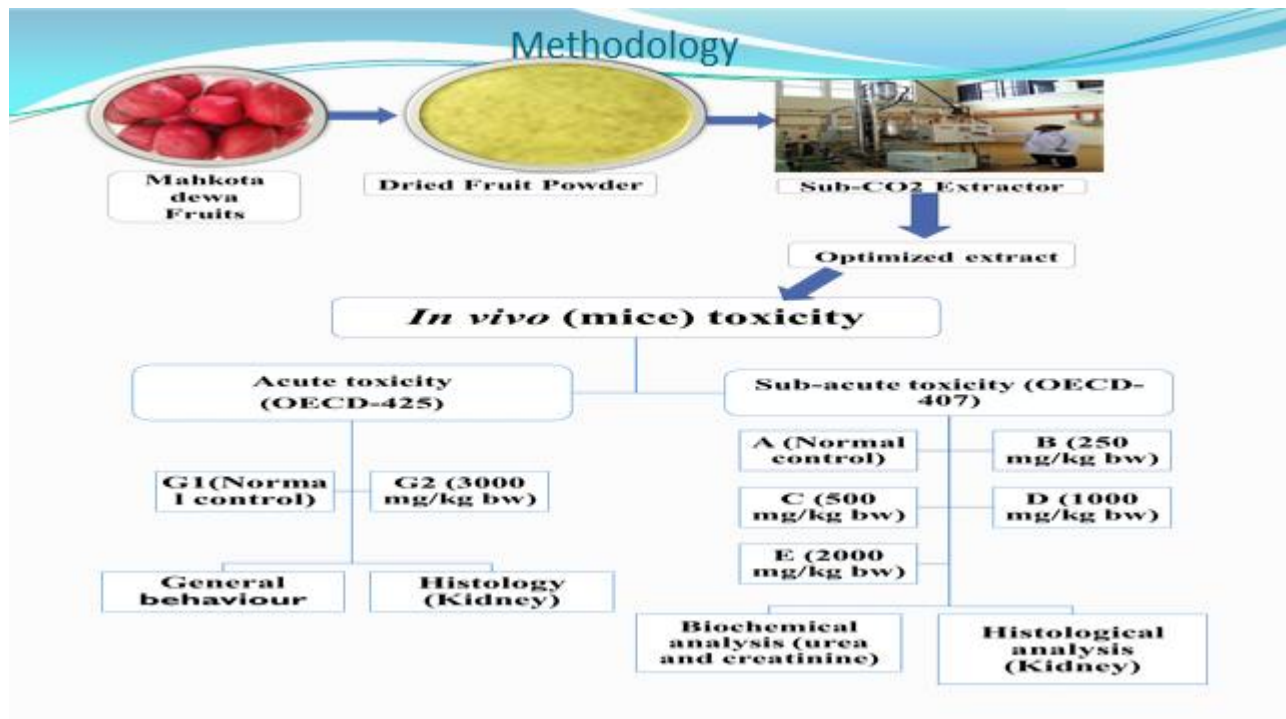


# Effect of Mahkota Dewa Fruit Extract on kidney functions in Mice

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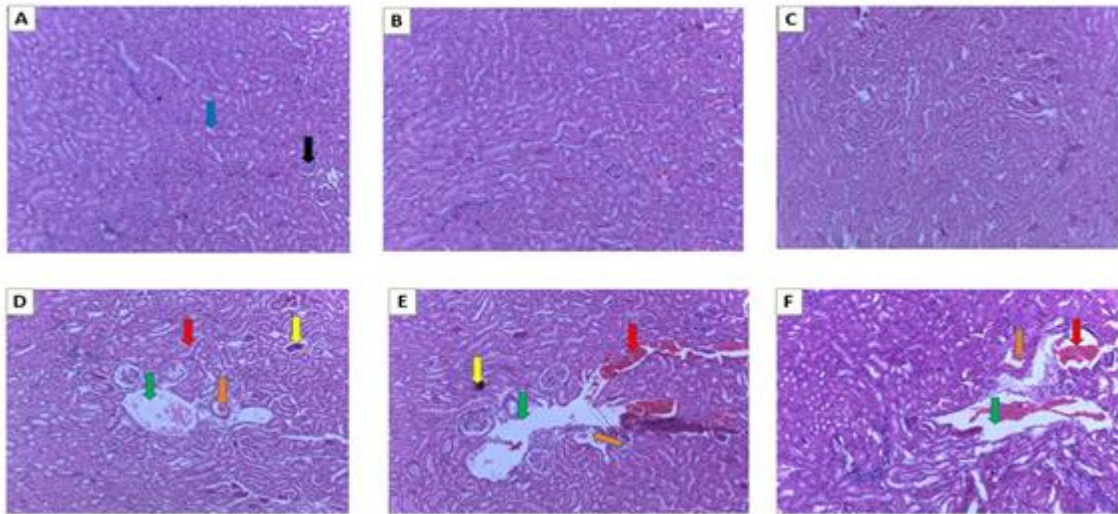
## Background

- Mahkota dewa (*Phaleria macrocarpa*) fruit is traditionally used in Malaysia, Indonesia, Thailand, Philippine and Oceania to treat diabetes, kidney, cancer, impotency, heart disease, and skin related problems. The use of herbal products in a safe manner is considered important for human. However, there is still insufficient information available to validate the safe dose of Mahkota dewa extract for human use. Hence, toxicological testing of Mahkota dewa extract in experimental animals is a requirement for clinical trials and future therapeutic applications. The aim of this research was to determine the safe dose of optimised Mahkota dewa extract, using subcritical liquid carbon dioxide, in oral acute and sub-acute toxicity in the mice model.



# Result

Characteristics	30 min		1 hr		3 hr		6 hr		24 hr		7days		14 days	
	G1	G2	G1	G2	G1	G2	G1	G2	G1	G2	G1	G2	G1	G2
Itching	N	N	N	O	N	N	N	N	N	N	N	N	N	N
Respiration	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Feces consistency	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Convulsion	N	O	N	O	N	N	N	N	N	N	N	N	N	N
Sleep	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Coma	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Salivation	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Eyes	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fur & skin	N	O	N	O	N	N	N	N	N	N	N	N	N	N
Mortality	-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Conclusion

In summary, the LD<sub>50</sub> of Mahkota dewa extract for mice was >3000 mg/kg bw. The abnormal biochemical and morphological findings were found at doses of 1000 and 2000 mg/kg bw. The findings revealed that Mahkota dewa fruit extract up to 500 mg/kg bw is a safe dose that would offer a greater therapeutic benefit without causing any nephrotoxicity effects. However, further clinical trials are still warranted to determine a safe dose before its commercialization.

THANK YOU