Mahkota Dewa Prevents Renal Damage

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**Mahkota Dewa** (Phaleria macrocarpa) is a indigenous plant of Indonesia. It hails from Papua and normally planted as shrubs or decorative plants. But in other communities it is used as herbs.

Four UGM students, Meirizky Zulharini S, Annishfia L. R, Siti Nurul H and Naisbitt Iman H, joining a research on Phaleria macrocarpa as Antinephrotoxicity. The research showed that the plant can reduce the side effect of Cisplatin that brought the four students to National Student Week event (PIMNAS XXVI) in the Student Creativity Programme in Research area in Lombok, West Nusa Tenggara.

Meirizky Zulharini S said Cisplatin is a chemotherapy agent or drug for cancer that is very effective and used widely. The statistics in the National Cancer Institute in 2013 showed that Cisplatin increase the chance for patients of cervical cancer from 32 to 62%. Like other chemotherapy agents, however, Cisplatin has serious side effects, which is nephrotoxicity or renal damage.

"Renal damage or nephrotoxicity is caused by oxidative stress from cisplatin radical metabolites. Nefrotoxicity has pretty high prevalence," said Meirizky on campus on Friday (6/9).

Said by Meirizky, Medscape records that in 2013 there is 1 of 3 patients with cisplatin having the nephrotoxicity risk, which adds to the sufferings of cancerous patients.

"So, an agent that is antioxidative is required to overcome the cisplatin oxidative stress," said Meirizky.

Therefore, Meirizky and friends offered Phaleria macrocarpa as alternative as it has dominant flavonoid content in the form of Kaempferol-3-O-B-D glucoside and known as antioxidant with high effectivity that is expected to be able to neutralise the effect.
"Based on the problem, we were conducting a research in vitro with MTT assay in the Cancer Chemoprevention Research Center (CCRC), Faculty of Pharmacy of Universitas Gadjah Mada”, he said.

The flavonoid content in the extract used, said Rizky, has been proven with Thin Layer Chromatography. Using Vero cells as modeling of normal kidney cells and HeLa cells as modeling of cervical cancer cells, it found out that the combination of cisplatin and Phaleria macrocarpa extract in 284 µM cisplatin concentrate and 183µg/mL in vero cells can increase the viability or the number of living cells.

"Thus, we concluded that the extract of Phaleria macrocarpa has the potential as nephroprotector agent or kidney protector. We hope this research would be appreciated as the best endeavour in the National Student Week 2013,” he concluded.

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