

# Centipede Has Potential to Cure Breast Cancer

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In 2012, the number of cancer-related deaths worldwide has reached 8.2 million people. From this number, breast cancer is the first case with 43,10% of new cases and 12,90% of deaths. However, breast cancer treatment still relies on chemotherapy that has several disadvantages in resistance, side effects, and efficacy.

UGM students have tried to utilize the wild animal found in specific region of Indonesia, centipede, as a breast cancer treatment. The three Pharmacy students are Gemilang Sekar Hapsari, Alya Lulu'ah, and Firda Ridhayani. Under the guidance of drh. Retno Murwanti, M.P., Ph.D., they studied the potential of centipedes as anticancer.

From the literature study obtained, explained Sekar, centipedes contain para-benzoquinone believed to have anticancer activities. "Para-benzoquinone compounds can induce apoptosis or simultaneous cell deaths," said Sekar on Wednesday (8/1) at the campus.

The research started with collecting centipedes from Ajibarang area in Banyumas. After that, Sekar said, their team determined the species. "Centipedes are macerated with 96% ethanol to obtain the extract."



Then, to identify the compounds they performed the Thin-Layer Chromatography Test. Meanwhile, the cytotoxicity test (MTT Assay) was aimed to determine the biological aspects and computer-based molecular docking to identify the interaction of compounds with anticancer activities to bind molecularly with the target protein.

The result shows that centipede extract contains benzoquinone compounds. The extract holds 50% inhibitory level in breast cancer cells. “It discovers that centipedes are not toxic to breast cancer cells and its benzoquinone compounds can interact with native ligand to bind enzymes,” said Firda Ridhayani, member of research team.

Firda concluded centipedes with benzoquinone compounds have the potential as a chemoprevention agent in targeted breast cancer treatment.

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