

Banana Pseudostem Has Potential to Prevent Breast Cancer

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Universitas Gadjah Mada students have unveiled the potential of banana pseudostem as breast cancer therapy.

The students, Ida Nur Aini, Ahmad Syauqy Tafrihani, and Dhuriyatun Khasanah in a Student Creativity Programme have explored the potential of banana pseudostem as breast cancer anti-metastasis agent.

"Banana pseudostem is usually thrown away whereas it contains flavonoids that have antioxidant activities," said Ida on Friday (23/8) at UGM.

Ida said one of flavonoid types in the trunk is quercetin that can inhibit cancer metastasis by reducing MMP-9.2 expressions.

The students extracted the trunk by macerating it with cold ethanol solvent 95%. Afterwards, they quantify the quercetin content in the extract using $AlCl_3$ colourimetry method.

After calculating the flavonoid content, an in vitro test is done using breast cancer cell model, 4T1,

which has the character of quick metastasis. The extract is tested on its inhibition effect on cancer cell growth under MTT Assay test.

"The result showed that the pseudostem extract did not inhibit the growth of 4T1 cells, meaning it was not toxic," she said.

Next, they adopted the Gelatin Zymography and scratch wound healing assay methods to know the extract activity as anti-agent of the spread of breast cancer. It was also to know its effect on the reduction of MMP-9 expression and cancer cell migration.

"The results of extract which was combined with doxorubicin could reduce the MMP-9 expression and inhibit cell migration. So, it's fair to conclude that it has the potential as agent of anti-metastasis in breast cancer," she explained.

In addition, the students made the extract in the form of food powder in order to increase its acceptability for easy consumption.

She concluded that the potential of banana pseudostem could be developed as cancer prevention or medication. Further research, however, is needed to turn the ingredient as cancer medicine alternatives.

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