

UGM Students Utilize Green Tea Extract to Cure Gingivitis


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Gingivitis is one of mouth diseases that quite disturbs the sufferer due to its severe pain, causing eating and speaking hard. The prevalence level of gingivitis in Indonesia increases from time to time. Based on this issue, five UGM students consisting of Annisa Hidaratri Uningojati, Urfa Tabtila, and Dilla Asriyani from Faculty of Dentistry as well as Fathul Muin and Bramanti Nadya Kausara from Faculty of Pharmacy conducted research on an effective gingivitis medicine made from green tea extract using nano-chitosan encapsulation. This gingivitis medicine is formed into gel, namely Chicaflo (Chitosan-encapsulated Flavonoid) gel.

Annisa said her team had chosen green tea extract because tea has become the most consumed beverage by the society in Indonesia. Moreover, the tea plant itself is widely grown here so it always available and affordable. As we know, tea contains active substances such as flavonoid that has an anti-inflammatory characteristic which is effective to cure gingivitis. "Green tea contains higher flavonoid content than black tea," said Annisa on Wednesday (21/6).

Meanwhile, according to Annisa, nano-chitosan encapsulation is used to add the effectivity of the medicine. It is proven to be one of the best drug carriers for flavonoid. It is made in nanoscale in order to make the medicine get absorbed faster by the body so the effect can be seen in shorter time.



This research obtained funding from the Ministry of Research, Technology, and Higher Education through the Students Creativity Programme on Exact Research (PKM-PE). Under the supervision of drg. Indra Bramanti, M.Sc., Sp. KGA, those five students tested Chicaflo gel by in vivo method on the male white Wistar strain mouse. The result shows the Chicaflo gel is quite effective to cure gingivitis. “It is proven by the significant decrease in the number of inflammation cells,” said Nadya, another team member.

Nadya further said her team had conducted some research to encourage the production of Chicaflo gel, including testing flavonoid content in three grades of green tea that are sold in Indonesia and the one with the highest flavonoid content is chosen to make the Chicaflo gel. In addition, they performed Particle Size Analyzer Test to ensure the size of the Chicaflo gel particles is already at a nanoscale. “We also tested the quality of Chicaflo gel so it is proven to fulfill the standard and safe to be used as a medicine,” she added.

Although it is only an initial research, Annisa and her team said they would keep developing this gel so it can be applied to human. “We hope our research to continue so the Chicaflo gel can obtain a patent and be used by the society, thus it can decrease the prevalence of gingivitis in Indonesia,” said Annisa.

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