

## **Pheophytin Content and Fibrinolytic Activity of Silkworm Feces in the Different Larval Stages of Silkworms**

**Mi Young Ahn, Kang Sun Ryu, Iksoo Kim, Jin Won Kim, Heui Sam Lee,  
Yong Ki Lee, and Eun Sun Kim**

*Department of Sericulture and Entomology, National Institute of Agricultural  
Science and Technology, Suwon 441-100, Korea*

In order to find potential anticancer agents, we extracted pheophytin in the silkworm feces from various larval stages by water, chloroform and methanol extraction. The cytotoxicity of the pheophytin extracts of various silkworm feces was measured in the CT-26 cells originated from murine metastatic colon cancer, by dye uptake assay. The cytotoxicity of those pheophytins in 2nd, 3rd and 4th instars was better than remaining larval stages. The *in vitro* anticoagulant and fibrinolytic activities of ethanol extract from varietal mulberry leaves, mulberry branches and silkworm feces and pheophytin extracts from silkworm feces from various larval stages were evaluated in order to find effective therapeutic drugs for the treatment of myocardial and cerebral thrombosis. The fibrinolytic activity was tested using the activated partial thromboplastin time (APTT) and thrombin time (TT) was measured for blood clotting activity. With regards to the fibrinolytic system, ethanol extracts of silkworm feces were better than varietal mulberry leaves and mulberry branches. The pheophytin extracts from 7th days of 5th instar contained the highest percentage of pheophytin and good fibrinolytic activity.