

Behind The Scenes: Stemming the Tide of Inflammation



by Dr. Amy Keller

This summer, the Journal of Natural Products published an article from ASP member Dr. Young Ho Kim and his colleagues entitled, "Anti-inflammatory Triterpenoid Saponins from the Stem Bark of *Kalopanax pictus*." The Newsletter interviewed Dr. Kim about this exciting research; he graciously gave us insight into the exciting anti-inflammatory activity of *K. pictus* compounds. Please read the full article in the Journal of Natural Products, 2011, 74(9), 1908-1915.

left: *Kalopanax pictus* tree; right: *Kalopanax pictus* bark.



How did you become interested in *K. pictus* and the anti-inflammatory phytochemicals therein?

Kalopanax pictus (Araliaceae) is a deciduous tree growing in East Asian countries. The stem bark of *K. pictus* has been used in traditional medicine to treat some diseases linked to inflammation. With the aim to research bioactive natural products on anti-inflammatory activity, we selected *K. pictus* to investigate chemical components from its stem bark and their anti-inflammatory properties.

Who in your laboratory carried out the research?

All the members in the paper carried out the research, especially the first author Tran Hong Quang.

Could you provide a brief explanation of the work and results in your own words? In what way are the data in your paper new?

This study described isolation of 15 compounds, including five new compounds and 10 known compounds from the stem bark of *K. pictus*. Thirteen of the compounds inhibited TNF α -induced NF- κ B transcriptional activity in HepG2 cells in a dose-dependent manner. The transcriptional inhibitory function of these compounds was confirmed based on decreases in COX-2 and iNOS gene expression in HepG2 cells. The structure-activity relationship (SAR) of the compounds on anti-inflammatory activity is also discussed.



Top row: Bui H. Tai, Nguyen P. Thao, Tran H. Quang, Nguyen T. T. Ngan.
Bottom row: Dr. Young Ho Kim, Seok B. Song

What impact does this research have on natural product science?

This research provides the scientific information including IR, NMR, and MS data and structures of five new compounds, the anti-inflammatory activities of the compounds, and SAR of the compounds on anti-inflammatory activity.

What is a favorite nonscientific activity of your lab?

A favorite nonscientific activity of our lab is traveling.

What is your lab's motto?

Do your best.

What is your greatest extravagance in the lab?

Everything is useful, there is no extravagance at all.