

# Studies on Anti-cancerous and Anti-malarial Substances from Simaroubaceae Plants

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## Summary

Cancer is a general term subjected to a series of malignant tumor diseases which may affect many different parts of the human body. These cancer diseases are characterized by a rapid and uncontrolled formation of abnormal cells in the body. Cancer chemotherapeutic agents can often provide the prolongation of life and occasionally cures. To date many kinds of compounds have been obtained from plants kingdom as anti-neoplastic and anti-cancerous agents. However, there is no special type of compounds for cancer therapy. In our laboratory, anti-tumor and cytotoxic screenings on higher plants collected in Japan, China, Korea, Southeast Asia and South America have been done by using Sarcoma 180 ascites in mice, P388 lymphocytic leukemia in mice, Chinese hamster lung V-79 cells, P388 cells and nasopharynx carcinoma (KB) cells.

The family, Simaroubaceae consists of about 20 genera and 120 species, mainly shrubs and trees, distributed in tropical and subtropical country. Simaroubaceae is classified as RUTALES, together with Rutaceae, Burseraceae, Meliaceae, Malpighiaceae and Polygalaceae. The members differ from the Rutaceae in not containing oil glands. Bitter principles are a characteristic of the family, Simaroubaceae. The genera include *Quassia* (*Simarouba*) (40 spp.), *Picrasma* (*Aeschrion*) (6 spp.), *Brucea* (10 spp.),

*Soulamea* (10 spp.), *Ailanthus* (10 spp.) and *Perriera* (1 spp.) etc.. Surinam quassia derived from *Quassia amara* growing in Guianas, north Brazil and Venezuela is used in traditional medicines for stomachic, anti-amoebic, anti-malarial and anti-anaemic properties. Also, various parts of a number of plants of the family Simaroubaceae have been used in traditional medicine for the treatment of a variety of diseases including cancer, amoebic, dysentery and malaria. Then, the research has established that it is the quassinoid content of these plants that is responsible for above activities.

In this meeting, I will present on anti-tumor and anti-malarial activities and their active principles of Simaroubaceae plants, *Eurycoma longifolia*, *Ailanthus vilmoriniana*, *Simaba cedron* and *Brucea mollis* which have been studied in our laboratory.

## Quassinoids from *Ailanthus Vilmoriniana*

Key Word Index *Ailanthus vilmoriniana*; Simaroubaceae; quassinoid; vilmorinine; spectroscopic analysis.

### Abstract

The new quassinoids, named vilmorinines B (1) - F (5), have been isolated from the cortex of *Ailanthus vilmoriniana* (Simaroubaceae). Their structures were established by various spectroscopic evidences.

## Eurycolactones A C, novel quassinoids from *Eurycoma longifolia*

### Abstract

Three novel quassinoids, eurycolactones A C (1 3), were isolated from the roots of *Eurycoma longifolia* Jack. Their structures were elucidated by interpretation of the spectroscopic data.