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TITLE

Difficulties of Drug Development from Thai Herbal Medicine

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Our research group is searching for the novel drugs from Thai herbal medicine especially anticancer, and immunomodulatory drugs for treating or relieving symptoms in malignant patients. Several difficulties have been confronted during drug development and discovery processes.

Several kinds of specific plants including the combined plants in Thai herbal remedies mentioned in the Thai traditional books have now been investigated by our group such as *Ficus hispida* L., *Sapindus rarax* DC., *Erycibe elliptilimba* M.&C., *Pouzolzia indica* L., *Trichosanthes cucumerina* L. including two Thai herbal remedies. The antiproliferative properties of these plants on several human cancer cell lines have been elucidated. All of these plants showed the promising results on growth inhibition of these cancer cells. Some plant such as *Sapindus rarax* could inhibit growth by activating the caspase pathway which increased the apoptotic cells in A549 human lung cancer cell line. *Trichosanthes cucumerina* not only showed the anticancer effect via the inhibition of telomerase activity but also demonstrated the immunosuppressive property on human peripheral blood lymphocytes at the lower dose of 0.5 µg/ml or 0.8 µM. However, two Thai herbal remedies containing at least 5 plants in each remedy showed no inhibitory effect on cancer cells. Interestingly, they increased the activity of doxorubicin when combined with herbal remedies.

Searching for novel drugs from Thai medicinal plants has several difficulties during completion of these steps. Though no clinical staging in drug development is needed because they have been prescribed for treating patients for over centuries. Cost and time consuming are still unavoidable. Additionally, after the purification process, the active compound from plant might show no growth inhibitory effect. Amount of special plants for production is not enough. The quality associated with the production of Thai herbal remedy which contains several plant and/or animal materials is a threatened risk for drug development from Thai herbal medicine.

Biography

Dr. Tanawan Kummalue has completed her MD. from Faculty of Medicine Siriraj Hospital, Mahidol University in the year 1985. She also completed her training in hematology&oncology from the same institution and research fellowship from Johns Hopkins University, USA. She has performed research in the field of Thai medicinal plants and has published for over 30 papers since then