Nik Soriani Yaacob

Universiti Sains Malaysia, Malaysia

Anticancer effects of *Strobilanthes crispus* in experimental breast cancer

Limited efficacy and concerns over toxicity of chemotherapeutic drugs have contributed to the worldwide increase in the use of herbal products by cancer patients. Natural products have always been an unrivalled source of anticancer therapeutics due to their seemingly compatible biological activities. We investigated the anticancer activities of a native plant, *Strobilanthes crispus*, valued for its traditional medicinal use. A number of studies demonstrated that *S. crispus* crude extracts are cytotoxic to cancer cell lines. We showed that a bioactive sub-fraction of *S. crispus* leaves (SCS) induced cell cycle arrest and apoptosis of human breast cancer cell lines. The mechanism involves perturbation of mitochondrial function and modulation of cell cycle regulatory proteins and apoptotic signaling molecules. SCS acted synergistically with the anti-estrogen, Tamoxifen, suggesting the potential to achieve the desired cytotoxic effect in cancer treatment at lower drug doses with the potential for reduction in side effects or toxicity of the drug on non-cancerous cells. SCS also displayed potent anticancer effects in vivo. SCS reduced tumour volume and tumour multiplicity in rats bearing N-methyl nitrosourea-induced mammary tumors. These were accompanied by modulation of the expression of cyclins and cyclin-dependent kinases as well as various signaling molecules of both the intrinsic and extrinsic pathways. Interestingly, SCS is also capable of activating the immune system in vivo that may contribute to the anticancer effects of SCS. Importantly, hematological and clinical biochemistry profiles indicated that SCS is relatively safe, further lending support for the therapeutic potential of SCS.

Biography

Nik Soriani Yaacob is a Professor at the School of Medical Sciences, Universiti Sains Malaysia. She obtained her BSc and MSc from Australia and completed her PhD in UK. She has held several administrative posts in USM, including the Deputy Dean for Research at the School of Medical Sciences and currently holds the Directorship of the Medical and Health Sciences Nexus of the university, which is tasked to bring together various research groups to address a particular health issue for the country. Her own research focuses on the use of natural products as potential anti-cancer agents.

niksoriani@usm.my

Notes: