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## Anti-inflammatory Effects of Thai Herbal Extracts on RAW264.7 Cells: Nitric Oxide Production and Proinflammatory Cytokine Secretion

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**S**tatement of the Problem: The prevailing methods of cancer treatment possess risks, severe adverse effects, and may require excessive costs. Kerra, Minoza, KS, RID-ZY, and Hepa 2 are five formulas of Thai herbs which as an amalgamation can treat cancer through immunomodulatory actions and anti-tumor activities. The herbs offer efficacious therapy, without severe side effects, alleviate quality of life specially in advanced care patients, and are inexpensive, which can become extremely accessible for use on a widescale. The stimulatory effects of Thai herbs on nitric oxide (NO) production, roinflammatory cytokine secretion, and cell viability of RAW264.7 cells was explored. Methodology & Theoretical Orientation: NO production was calculated, and cell viability was determined using a microplate reader. MILLIPLEX Multiplex Assay analyzed expression of IL-6, IL-10, and TNF- $\alpha$  from RAW264.7 cells when stimulated by lipopolysaccharides (LPS) with Kerra, Minoza, KS, RID-ZY, and Hepa 2 compared to untreated cells and stimulation by LPS only, after 24 hours. Findings: The herbs are not cytotoxic, where cell viability is over 80%, apart from RID-ZY which was less than 80% but over 60%. NO production was not reduced compared to stimulation by LPS only for all herbs, except Kerra which reduced levels likewise to in untreated cells. IL-6 concentration was comparable to LPS only for all, apart from Kerra which decreased IL-6 to a similar amount to untreated cells. IL-10 secretion was lower than that of IL-6 for all including LPS only, except RID-ZY which exhibited higher levels of IL-10 compared to IL-6. Kerra induced results similar to untreated cells. No herbs decreased TNF- $\alpha$ . Conclusion & Significance: The Thai herbal extracts are safe, RID-ZY may have a small effect on cell viability. The anti-inflammatory effects of Kerra are favorable for cancer therapy. Immunomodulation needs to be further investigated for prospective cancer treatment.

### Biography

Chatchaya Nangsue is a third year medical student at Chiang Mai University, Thailand, and is intrigued in learning and sharing research on diverse works in the field of medicine. She is passionate about obstetrics and gynecology, oncology, infectious diseases, and public health. She has research experience in systematic reviews and meta-analyses and has ongoing research in other areas.

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