

Letter to Editor

THE RED BUTTERFLY WING (CHRISTIA VESPERTILIONIS): A PROMISING CANCER CURE IN MALAYSIA

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Recently, the use of *Christia vespertilionis* (L.) Bakh. f. decoction as anti-cancer agent has gained a lot of attention in Malaysia as an alternative medicine to the modern treatment [1]. This plant has been distributed and formulated as tea throughout Malaysia by traditional practitioners. It has gained a huge popularity among Malaysians, not only the cancer patient's but researchers in Malaysia to discover the real potential of this plant. *Christia vespertilionis* is an ornamental plant Fabaceae and it is known as red butterfly wing, island peak, mariposa (butterfly in Spanish) or rerama which means butterfly in Malaysia (fig. 1). This plant is widespread in tropical Southeast Asia and it is assumed to be native to Cambodia, Thailand, Vietnam, China, Indonesia, Myanmar and Malaysia. In traditional medicine, this plant is believed to treat snake bites, tuberculosis, heal bone fractures, increase blood circulation, bronchitis and cold [2, 3].



Fig. 1: *Christia vespertilionis* (L.) Bakh. f., commonly known as the red butterfly wing

An early study to highlight the potential of *C. vespertilionis* with a focus on its pharmacology properties was conducted by Nguyen-Pouplin *et al.* [3]. Cyclohexane extract of the whole plant was reported to have anti plasmodial activity towards *Plasmodium falciparum* FCB1 with IC₅₀ value of 10.8 µg/ml. The study also discovered high cytotoxicity against two different mammalian cell lines (Hela and MRC5) with a selectivity index of less than two [3]. *Christia vespertilionis* was further studied as anti plasmodial agent, *in-vitro* and *in-vivo*. An anti plasmodial assay was carried out and bioassay-guided studies were applied to characterize the active compound from this plant [4].

The aqueous methanolic stem was found to be the most potent and active towards *P. falciparum* NF-54. *In-vitro* assay showed 87.8% suppression of parasitaemia compared to control and fifteen metabolites was able to be isolated from this wonder plant.

Hofer *et al.* [5] conducted a study with a focus on neuroendocrine tumours. These tumours are known for their poor response to both radiation and standard chemotherapy, thus surgical removal is currently the most effective treatment. This study focused on the effects of *Christia vespertilionis* on human medullary thyroid carcinoma and human intestinal neuroendocrine tumours. It was found that ethyl acetate extracts of this magnificent plant have high inhibition of cancer cells whilst not affecting normal human fibroblasts. These extracts also caused a change of gene expression in both of the carcinomas and tumours. The results imply a great potential of use for *Christia vespertilionis* against cancer.

To our best knowledge, there is no comprehensive evidence concerning the phytochemistry, pharmacology and toxicology of this plant. Further studies on *C. vespertilionis* should be performed, especially concerning the toxicology of this plant. Safety assessments and clinical trials should be conducted before it can be integrated into medicinal practices.

CONFLICTS OF INTERESTS

The authors declare no conflict of interest

REFERENCES

1. Hamid RA, Sediadana RM, 20 juta. Available from: <http://www.hmetro.com.my/node/28746> [Last Accessed on 20 Apr 2015].
2. Brach AR, Song H. eFloras: New directions for online floras exemplified by the flora of china project. *Taxon* 2006;55(1):188-92.
3. Nguyen-Pouplin J, Tran H, Tran H, Phan TA, Dolecek C, Farrar J, *et al.* Antimalarial and cytotoxic activities of ethnopharmacologically selected medicinal plants from south vietnam. *J Ethnopharmacol* 2007;109(3):417-27.
4. Upadhyay HC, Sisodia BS, Cheema HS, Agrawal J, Pal A, Darokar MP, *et al.* Novel antiplasmodial agents from christiavespertilionis. *Nat Prod Commun* 2013;8(11):1591-4.
5. Hofer D, Schwach G, Tabrizi-Wizsy NG, Sadjak A, Sturm S, Stuppner H, *et al.* Christia vespertilionis plant extracts as novel antiproliferative agent against human neuroendocrine tumor cells. *Oncol Rep* 2013;29(6):2219-26.