Reviewer's report

Title: Assessment of phytochemical content, polyphenolic composition, antioxidant and antibacterial activities of Leguminosae medicinal plants in Peninsular Malaysia

Version: 1 Date: 27 October 2010

Reviewer: Shela Gorinstein

Reviewer's report:

It is written (P 2):"High total phenolic content (TPC) and strong DPPH radical scavenging ability were observed for B. kockiana flowers and C. pulcherrima leaves”.
Comment. Please, put in data.

It is written (P 2): "This paper presented some of these medicinal plants are potential source of antioxidant and antibacterial agents, especially in MRSA infections treatment”.
Comment. Please, name the “some of these medicinal plants.

Background

It is written (P 3): "Natural products and secondary metabolites that are formed by living systems, notably from plant origin have shown great potential in treating human diseases such as cancer, coronary heart diseases, diabetes and infectious diseases”.
Comment. Please, put in references.

It is written (P 3): " The compounds from plants that are useful in the development of new drugs are phytochemicals. Phytochemicals are natural, non-nutritive, bioactive compounds produced by plants that act as protective agents against external stress and pathogenic attack”.
Comment. Please, put in references.

It is written (P4): " Some of these plants are medicinal plants, which have been used traditionally to treat various diseases”.
Comment. Please, name the “some of these medicinal plants.

It is written (P5): "... (kan cao) root extracts have chemopreventive properties where they were found to induce apoptosis in MCF-7 breast cancer cells [9]
Comment. Please, put in the kind of the extract.

Materials and Methods

It is written (P 9): "Phytochemical screening for flavonoids, tannins, saponins and
alkaloids was determined as described by Parekh et al. [17] and Aiyegoro et al. [18] with a slight modification”.

Comment. Please, describe the modification.

Comment. I didn’t find a description of the statistical evaluation.

Results

It is written: (P10): "Slightly different ranking was seen in TPC of the leaves: C. pulcherrima has the highest TPC (5030 ± 602 mg GAE/100g), followed by P. pterocarpum (4880 ± 275 mg GAE/100g), B. kockiana (4220 ± 104 mg GAE/100g), C.tergemina (5030 ± 602 mg GAE/100g), C. surattensis (3330 ± 309 mg GAE/100g), A.auriculiformis (2280 ± 294 mg GAE/100g), L. leucocephala (1700 ± 277 mg/GAE/100g), S.saman (1340 ± 22 mg GAE/100g) and B. purpurea (1310 ± 124 mg GAE/100g)".

Comment. Please, indicate, if the differences were significant.

It is written: (P11): "Statistical analysis showed that TPC and antioxidant activity of flowers and leaves of the same species are significantly different to each other".

Comment. Please, show data.

Discussion

It is written: (P13): "Plants produce diverse arrays of phytochemicals which are useful in the development of new drugs. These phytochemicals are mostly secondary metabolites constantly synthesized by the plant for defensive purposes. For instance, antioxidants are biologically produced as defensive mechanism to prevent tissues destruction caused by highly reactive chemical species, which are formed from various biochemical reactions”.

Comment. Put in references.

It is written: (P15): "Our previous study [13] has shown that flavonoid is present in C. surattensis flowers and leaves extracts (13.3 mg rutin equivalent/100g and 29.6 mg rutin equivalent/100g, respectively), assessed using aluminium chloride method. Rutin (95.7 mg/100g) and chlorogenic acid (9.13 mg/100g) in extract would exhibit antioxidant activities [13]”.

Comment. Please change to"Our previous study [13] has shown that flavonoids are present in C. surattensis flowers and leaves extracts (13.3 mg rutin equivalent/100g and 29.6 mg rutin equivalent/100g, respectively), assessed using aluminium chloride method. Rutin (95.7 mg/100g) and chlorogenic acid (9.13 mg/100g) in extract would exhibit antioxidant activities [13]”.

It is written: (P18): "This is the first antioxidant, antibacterial and phytochemical screening study for S. saman flowers. The presence of low tannin and flavonoid content in flower (Table 4) could have contributed to medium low TPC and free radical scavenging activity (Table 1)”.
Comment. Please change to "This is the first antioxidant, antibacterial and phytochemical screening study for S. saman flowers. The presence of low tannin and flavonoid contents in flower (Table 4) could have contributed to medium low TPC and free radical scavenging activity (Table 1)."

Tables
Comment. All 4 Tables are very complicated and have to be divided into Figures.

Conclusions
The conclusions has to be rewritten in order to name the concrete results of this investigation.

References
A very long list of references (60): it is not a review.
Some of them are of old date:

The reviewed manuscript can not be published in the present form.
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With respect