Author's response to reviews

Title: Antioxidant and acetylcholinesterase-inhibitory properties of long-term stored medicinal plants

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Author's response to reviews: see over
Dear Editor

We have addressed the reviewer’s comments in our revised manuscript attached herewith. Kindly find as stated below our response to the reviewer’s comment. Our point-by-point response is boldly-written after each comment.

Reviewer's report

Title: Antioxidant and acetylcholinesterase-inhibitory properties of long-term stored medicinal plants

Version: 1 Date: 26 April 2012

Reviewer: Maan Bahadur Rokaya

Reviewer’s comments

- Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached).

The research article ‘Antioxidant and acetylcholinesterase-inhibitory properties of long-term stored medicinal plants’ is interesting and well written. However, the manuscript needs some improvements and are specifically written below:

Introduction

Although authors argue that plants are used for various ailments, similar literature review in introduction is lacking. The manuscript would have been better if authors specifically mention about the similar research that have been carried out elsewhere in the world and should show how their study is different and what is its significance?

Response: In lines 84-85, we stated that the evaluated plant species are used in traditional medicine to prevent and/or treat pain-related ailments and infections. Appropriate references giving the details of the traditional uses and previous studies on these plants were cited in the original manuscript [References 20-23].

Lines 70-80 briefly has mentioned the research objectives but need to point our more specifically.

Response: The rationale as well as the objectives for this study has been clearly stated in lines 75-87.

Authors have mentioned 21 medicinal plants in Tables. Please mention their
uses, habitats, local status and harvesting season in a separate Table. Are they frequently used, endangered or just easy to get access and authors made an attempt to study some plants (out of many). Please also mention habitats, local status and harvesting season.

Response: The uses, habitats and harvesting season of the plant species evaluated in this study have previously been listed in the publications by Jäger et al. [21] and McGaw et al. [23], cited in this manuscript. Hence we have not included an additional Table, to avoid unnecessary duplication of information.

Methods
Lines 96-102: It is not clear. Do authors mean that stored materials are always stored once they are dried in oven at 50 degrees or just tested materials were stored by herbaria in such a way? Please be more explicit.

Response: As stated in lines 100-101, plant materials used for the study were oven-dried at 50 °C and then stored at room temperature (25 °C) in brown paper bags in the dark for 12 or 16 years. We did not use herbarium materials for the evaluation. The voucher specimens of the plant materials were deposited in the herbarium according to international scientific standard for referencing purpose.

Under what conditions were the plant materials stored, damp, dry, airy, in box, floor, etc? please mention this as it is important for degradation of plants that are stored for a long time.

Response: We stated in lines 100-101 that dried plant materials were stored at room temperature (25 °C) in brown paper bags in the dark.

Results and discussion

Results are well written but this section seriously lacks the discussion. Authors need to compare their findings with other researches and write what differences are there in their findings. They also need to mention why there are higher amounts of phenolic and flavonoid contents in stored materials than fresh materials. Was it because of drying or some other reasons?

Response: We have discussed our results in the light of relevant literature cited in the ‘Results and Discussion’ section of this manuscript (see lines 193-196, 202-205, 218-222, 235-240, 252-256, 266-272). It must be noted that there is a dearth of available literature on the effect of long-term storage (10 years upward) on the efficacy of medicinal plants.

As shown in lines 189-205, the phenolic and flavonoid contents of the stored materials were higher than or the same as freshly harvested materials in some cases. In other instances, freshly harvested materials had higher phenolic and
flavonoid contents. Hence, rather than generalizing which was higher (stored or freshly harvested materials), the degree of stability of the phenolics was species-specific.

In the discussion, authors should specifically mention the possible uses of plants in different diseases other than only AD.

Response: Rather than screening the plant materials for their possible uses in treating different diseases, the purpose of the study was to evaluate the effect of storage on biological activities (antioxidant and acetylcholinesterase-inhibition properties) of these plants. The possible uses of these plants in treating inflammatory and infectious conditions have been reported earlier by Jäger et al. [21] and McGaw et al. [23], cited in this manuscript.

In the conclusion, the authors should somehow suggest how the plants should be stored?

Response: This has been stated in the conclusion (lines 275-276).