Author's response to reviews

Title: Comparison of the antibacterial activity of essential oils and extracts of medicinal and culinary herbs to investigate potential new treatments for irritable bowel syndrome.

Authors:

Aiysha Thompson (486599@swansea.ac.uk)
Dilruba Meah (meahd@cardiff.ac.uk)
Nadia Ahmed (Nadiahmed@yahoo.com)
Rebecca Conniff-Jenikins (Beckij219@msn.com)
Emma Chileshe (Emma.chileshe@gmail.com)
Chris O Phillips (C.O.Phillips@swansea.ac.uk)
Tim C Claypole (T.C.Claypole@swansea.ac.uk)
Dan W Forman (D.W.Forman@swansea.ac.uk)
Paula E Row (paula.row@cantab.net)

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Author's response to reviews: see over
Response to Reviewers’ Comments about BMC CAM manuscript, Thompson et al., 12th November 2013.

Response to Reviewer, K. Husnu Can Baser

Reviewer’s Report:
The manuscript is fine except for a minor but important scientific point. Author epithets of botanical names of the plants must be indicated in their first mention in the text. Then, the manuscript can be published in your journal.

We thank the reviewer for his comment. We are delighted that he is happy for our manuscript to be published if we address the botanical naming of the plants. We have now gone through the manuscript and inserted the botanical names of the herbs that were studied or discussed as follows (page and line numbers refer to the new version that we have just uploaded):

For “peppermint” (page 10, line 8), the botanical name was already there (Mentha piperita).

For “bitter candytuft” or “clown’s mustard”, “German chamomile”, “angelica”, “caraway”, “lemon balm”, “greater celandine”, “liquorice” and “milk thistle” (page 10, line 24 to page 11 line 1), the botanical names were all there (Iberis amara, Matricaria recutita, Angelica archangelica, Carum carvi, Melissa officinalis, Chelidonium majus, Glycyrrhiza glabra and Silybum marianum L., respectively), although a dot has been added after Silybum marianum L.

For “spearmint” (page 11, line 10), Mentha spicata has been added in brackets.

For “coriander” (page 11, line 10), Coriandrum sativum has been added in brackets.

For “lavender” (page 11, line 18), Lavandula angustifolia has been added in brackets.

For “fennel” (page 11, line 21), Foeniculum vulgare has been added in brackets.

For “rosemary” (page 11, line 22), Rosmarinus officinalis has been added in brackets.

For “sage” (page 11, line 22), Salvia officinalis has been added in brackets.

For “lemon grass” (page 12, line 2), Cymbopogon citratus has been added in brackets.

For “Grapeseed” (page 13, line 24), Vitis vinifera seed has been added in brackets.

On page 17, line 1, “Mentha spicata” was removed, since it has now been inserted earlier on page 11.

For “pine” (page 18, line 1), Pinus sylvestris has been added in brackets.

For “thyme” (page 18, line 1), Thymus officinalis has been added in brackets.

For “tea tree” (page 18, line 1), Melaleuca alternifolia has been added in brackets.
For “mandarin” (page 18, line 13), *Citrus reticulata* has been added in brackets.

For “Ylang ylang” (page 18, line 19), *Cananga odorata var. genuina* has been added in brackets.

For “neem” (page 18, line 22), *Azadirachta indica* has been added in brackets.

For “anise” (page 28, line 1), *Pimpinella anisum* has been added in brackets.

On page 32, line 15, “*Citrus reticulata*” has been removed since it has now been inserted earlier, on page 18, line 5.

For “wormwood” (page 32, line 21), *Artemisia absinthium* L. has been added in brackets.

On page 32, line 21, the “green” of “green anise” has been removed, because we realised that this name referred to *Pimpinella anisum*, which had been referred to earlier just as “anise” (page 28, line 1).

For “Roman wormwood” (page 32, line 22), *Artemisia pontica* L. has been added in brackets.

For “hyssop” (page 32, line 22), *Hyssopus officinalis* has been added in brackets.

**Additional checking of references to coriander**

We have checked all of the mentions of coriander to make sure that it is clear whether the text refers to coriander seed or coriander herb (leaves and possibly stems).

On page 12, line 16, it says:

“We found that the essential oils with the most potent antibacterial activity in the three assays were coriander seed, lemon balm and peppermint, which are all present in herbal medicines that have been validated for use in the treatment of IBS by at least one clinical trial (without their mechanism of action being ascribed to an antibacterial effect).”

We have changed the text to:

“We found that the essential oils with the most potent antibacterial activity in the three assays were those of coriander seed, lemon balm and peppermint. Interestingly, essential oils or extracts of coriander, lemon balm and peppermint are all present in herbal medicines that have been validated for use in the treatment of IBS by at least one clinical trial (without their mechanism of action being ascribed to an antibacterial effect).”

The reason for this change is that, although carmint contains coriander extract (in addition to lemon balm and peppermint extracts), it is probably an extract of the leaves and stems of the plant, rather than the seeds, and our new version of the text makes that clearer. Alternatively, we would be happy to keep the text as it was, if the editors would prefer this. We would not want to hold up the publication of our manuscript due to this, and the reviewers and the editors were happy with this part of the text as it was before.
On page 19, line 14, where it says “Moreover the halos produced by peppermint and coriander essential oils…” we have inserted the word “seed” to give “coriander seed essential oils…”.

On page 21, line 16, “… 22.8 +/- 2.0 mm for coriander” becomes “… 22.8 +/- 2.0 mm for coriander seed”.

Response to Editorial comments

Editorial comments

- Please include information in your Methods section on the source of the plant material used in your study. We would also ask you to provide details on who undertook the formal identification of the plant material used in your study. Additionally, please confirm whether a voucher specimen of this material has been deposited in a publicly available herbarium, and include this information in your manuscript. A deposition number should be included, if available.

We bought the coriander plants from Tesco Supermarket in Swansea, the spearmint plants from Homebase in Swansea and the lemon balm plants from Swansea City Council’s Botanic Gardens shop. Since the plants were all purchased from a reputable source, we did not ask a qualified plant taxonomist to formally identify them. The plants certainly seemed to be coriander, spearmint and lemon balm, as far as we were concerned, because they exhibited the expected leaf shape and scent. We are sorry, but we did not deposit voucher specimens in a publicly available herbarium, either. We very much hope that this oversight will not preclude the publication of our manuscript.

Comma removed

On page 30 line 11, a comma has been removed from “Carmint (a mixture of coriander, lemon balm and spearmint extracts),” to give “Carmint (a mixture of coriander, lemon balm and spearmint extracts)”

Change to acknowledgements

We have altered the acknowledgements to thank our colleague, Dr Ed Dudley, for his advice about mass spectrometry.

We thank the reviewers and the editors at Biomed Central, and Biomed Central Complementary and Alternative Medicine for reviewing our manuscript, and for being so helpful during the review process.