Reviewer's report

Title: Anti-diabetic Indian Ayurvedic medicinal plants as potent inhibitors of pancreatic alpha-amylase activity

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Reviewer: Emmanouil Apostolidis

Reviewer's report:

This manuscript is presenting a very well organized and documented research. However, please allow me to express my concerns. For dietary mediated type 2 diabetes management, there are 2 targets: 1) insulin sensitivity increase and 2) retardation of glucose absorption via mainly alpha-glucosidase inhibition. Alpha-amylase can also be a target, however it is not desirable, due to the observed side effects resulting from undigested starch (see acarbose and miglitol). It is a fact that alpha-amylase inhibition could result in type 2 diabetes management. But, we need to understand that the major target for type 2 diabetes management at the GI level, according to the majority of the literature, is alpha-glucosidase.

Having said the above, I recommend the following changes in the manuscript.

Title: Potent alpha-amylase inhibitory activity of Indian ayurvedic medicinal plants.

Page 5: The authors mention that miglitol does not inhibit alpha-amylase. Miglitol inhibits alpha-amylase and should be mentioned.

Page 5 last sentence: The authors classify acarbose as an alpha-amylase inhibitor, which is not the case. Acarbose is an alpha-glucosidase inhibitor that has alpha-amylase inhibitory activity. So, the sentence: Pharmacological properties of alpha-amylase inhibitors (acarbose)... should change to: "Pharmacological properties of alpha-glucosidase inhibitors (acarbose), that can also inhibit pancreatic alpha-amylase,...". A reference should be added at the end of the sentence.

Page 6, line 2: "...,with these inhibitors..". The citation used studied the effect of acarbose, which is clearly defined as an alpha-glucosidase inhibitor. So this phrase should be changed to: "Long-term day-to-day management of diabetes, with acarbose is well tolerated...".

Page 6, line 13: The authors state that these plants possess antidiabetic properties. I understand that many facts of Ayurveda medicine are unpublished, but if the authors could find a few references it would make their case stronger.

Level of interest: An article of limited interest

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests