Reviewer’s report

Title: In vitro antimicrobial activity of geopropolis produced by stingless bee (Melipona fasciculata Smith) against oral pathogens and biofilm viability

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Reviewer: MARCOS LUCIANO BRUSCHI

Reviewer’s report:

This article reports on the activity of Brazilian geopropolis extracts on microorganism ATCC (oral pathogens) and biofilm viability. The text could be better written. There are some grammar mistakes. A short review of English is required. Moreover, the manuscript needs more references about use of propolis in dentistry. The results are of interest but there are several questions that need clarification by the authors: (major compulsory revisions)

Page 2 (Abstract/Methods) – Ethanol 70%?? Chlorhexidine 0.12%?? (v/v or p/p)??? Please, describe!

Page 2 (Abstract/Results) – The concentrations are confused: “...12,5 mg/mL for HAE-3...” and 14,5 mg/mL for chloroform...”. Please, verify and correct!

Page 5 (Background) – Line 2 to 6: Correct: “...Gram-positive...” and “…Gram-negative...”. Moreover, the sentence is confused and needs to be rewritten.

Page 5 (Background) – Line 7 to 13: Some part of the paragraph is a resume of background sentences. Please, correct and rewrite the paragraph.

Page 5 (Methods) – Line 23 to 25: Please, explain better the proportion of propolis:ethanol 70% (v/v). Moreover, explain how were the propolis samples triturated? In a homogenizer?

Page 6 (Methods) – Line 1: Was the inorganic phase separated by vacuum? Please, rewrite the sentence explaining better.

Page 6 (Methods) – Line 2 to 3: Please, describe the drying method of extracts. Moreover, write with more details the storage (in a refrigerator? What was the temperature?).

Page 8 (Methods) – Chemical- characterization section: This section needs more details. The methods used in this section need to be written with more details and more references are necessary about phenol content and total flavonoids content (Pharmacopoeias and so on). Why have the authors used 5% of aluminium chloride? Please, verify! Regarding the chemical aspects, the authors should have justify their option for phenols and total flavonoids content as a criterion “chemical characterization”. While it is true that Brazilian propolis is a rich source of phenolic substances, it is also true that most of such substances are not flavonoids. It is widely known that most phenolic substances from Brazilian propolis are prenylated phenylpropanoids, one of the most important
being artepillin C (mainly for proplis from Apis mellifera). The quantification of total flavonoids and phenolics was performed with calibration graph, but the results are not showed.

Page 10 (Discussion): The results obtained for HAE-1 were not discussed! The authors didn’t discuss their results comparing with others, including ethanolic extracts from Apis mellifera propolis. There are many studies that could be compared in the literature!

Page 12 (Conclusions): The data shown the geopropolis ethanolic extracts (and some fractions) have activity against the microorganism tested. Moreover, just one extract (HAE-2) was tested about biofilm viability. Please, rewrite the conclusions!

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.