

The presented manuscript is related to the study of an exopolysaccharide isolated from the extremophilic microorganism *Bacillus haynesii* CamB6. The authors used the RSM based on central composite design technique to maximize the EPS production by *B. haynesii*, and also conducted a diverse study of the EPS properties. The studied EPS showed promising properties to use in the food industry. In combination with a high yield of polysaccharide from the bacterial mass, this makes it attractive for practical use.

Basically, the work was done at a fairly high professional level, the material is presented clearly, well structured, the data obtained are discussed with the previously obtained literature data. Methods are described adequately.

Comment 1: To my deep regret the structural characteristic of EPS is the weak point of this publication. Fourier transform infrared spectroscopy (FTIR) and NMR spectroscopy data can only be regarded as preliminary. According to the ¹H NMR spectrum, it can be assumed that EPS has a complex branched structure. Probably, to establish its structure, it is necessary to use chemical methods (hydrolysis, methylation, etc.), as well as two-dimensional NMR spectroscopy.

Answer 1: To better understand EPS chemical structure, further 2D NMR experiments were performed and results are presented inside the manuscript. In short, they allow to clearly identify the D-mannose α -(1→2) and α -(1→4) linkages in EPS. These results suggest they are the prevailing units of the EPS backbone making it a branched one. Also, β -glucopyranose and β -galactopyranose structures were identified and the acetylation was confirmed.

Comment 2: EPC is isolated from a thermal spring of volcanic origin, which contains a set of various elements, including heavy metals. It is advisable, in my opinion, to provide information on the content of heavy metals in the EPS, since the authors plan to offer this product for the food industry in the future.

Answer 2: According to the composition of EPS no metal was found to be attached with the structure of purified EPS. Likewise, in this study the monomeric composition was analysed to demonstrate the structure of purified EPS, where no metal was found to be attached with the chemical structure of it. This is also mentioned and referred in the revised version of the manuscript.

Comment 3: Line 42: It is premature to include the term "structure" in keywords at this stage.

Answer 3: As suggested by the reviewer, this keyword is removed from the revised version of the manuscript.

Comment 4: Line 526-527: The proposal should be reformulated. According to Figure 7. the activity of the ascorbic acid is higher than the activity of EPS produced by CamB6.

Answer 4: Thank you so much dear reviewer for mentioning this point. The correction has been made now in the revised version of the manuscript.