Responses to Reviewer #3’s comments:

In this manuscript, Liu et al reviews the potential anticancer interest of red seaweeds, particularly for compounds porphyrin and carrageenan. The subject is interesting, not only considering the high incidence of oncologic diseases but also to demonstrate the importance of marine products as a source of new bioactive compounds. In addition, as far as I could see, there is no similar published works. However, several problems can be detected which must be solved before being acceptable for publication:

1) Title, abstract and text: why “anti-cancer and anti-tumor”? In parts of the text, it seems that these terms are completely different things. In other parts of the text, it seems that they are the same thing... In addition, as can be seen in lines 32-33, the definition of tumor can be confounded with the definition of cancer... Therefore, the authors must clarify which means each term and include this information in the text and, accordingly, perform the needed text changes in title, abstract, body text...

In this context, the sentence “” (line 112) is another evidence of the confusion between anticancer, antitumor, antiproliferative, cytotoxic,... terms.

Response: As reviewer’s suggestion, we only used "anti-cancer".

2) In the abstract, the aim of the review should be better established – in my opinion, the last sentence of the introduction is not a complete reflex of the review.

Response: The last sentence was changed to “This review attempts to review the current study of anti-cancer activity and the possible mechanism of porphyran and carrageenan derived from red seaweeds to various cancer, and the cooperative action with other anti-cancer chemotherapeutic agents was also discussed”.

End of introduction: the focus of the review must be clarified as the authors are presenting not only mechanisms of action. In addition, the searching strategy, databases consulted, timespan covered in the search, keyword used in the search should
be included

Response: As reviewer’s suggestion, we added “The key words, “red seaweed”, “cancer”, “polysaccharide”, “porphyran” and “carrageenan”, were searching in “google scholar” and “web of science” in the period between 1980 and 2019” in the end of introduction.

As the authors want to focus this work on mechanism of action, a figure including the main biochemical pathways affected by these compounds should be included in order to help the readers to better understand the given information

Response: As reviewer’s suggestion, we added figure 3 to exhibit main biochemical pathways affected by porphyran and carrageenan.

3) Writing mistakes – examples:

Anti-cancer vs anticancer
Anti-tumor vs antitumor

In vitro and In vivo should be written in italics

Other examples of written English problems: Lines 38 “the all”, 41, 43, 47-48, 54, 57, 129, 131, 313-314,...

Therefore all text must be carefully reviewed.

Response: Done accordingly.

4) References – several problems can be detected:

-lines 30-33 – reference 1 is a 2013 article, however, in this part of the text, data from 2018 is presented!

Response: Now we added web link of WHO as reference 1.

-lines 35-36 – reference 2 is not adequate for the information given

Recent reviews which should be included:

https://www.mdpi.com/1420-3049/23/10/2451
Response: As reviewer’s suggestion, the two reviews “Oligosaccharides Derived from Red Seaweed: Production, Properties, and Potential Health and Cosmetic Applications” and “Biological activities and pharmaceutical applications of polysaccharide from natural resources: A review” were added as reference 62 and 20, respectively.

Example of other important articles to be included:

https://www.mdpi.com/1660-3397/16/8/277

Response: The article “Green Synthesis of Gold Nanoparticles Using Carrageenan Oligosaccharide and Their In Vitro Antitumor Activity” was added as reference 93 and relevant discussion was inserted in line 320-322.

Authors are not following the order of numbering after first appearance in the text, for example: after reference 2 we can find reference 73? This must be reviewed thorough the text!

Response: Now references were arranged according to the order of appearance in the text.