

## Response to reviewers' comments

Dear Editors, dear Reviewers,

We wish to express our appreciation to the Editors and Reviewers for their insightful comments, which have helped us significantly to improve our manuscript. According to the suggestions, we have thoroughly revised our manuscript and its final version is enclosed. Point-by-point responses to the comments are listed below.

### Reviewer #1

1. This topic highlight summarizes the latest data on gut-brain axis. Gut microbiota play a very important role in intestinal function and especially intestinal inflammation as the author mentioned through this paper. Therefore, the author should improve the title and abstract of this paper so that readers know that gut microbiota is primarily involved in this article.

Response: As Review highlighted, we modified the abstract and the title text, thus adding the relevance of microbiota in both the sections

2. It is not clear what the meaning of the blue line and red line and the thickness of the line shown in Figure. 1 mean. The authors should clearly explain in the figure legend.

Response: We are very grateful for this precious suggestion. As You suggested, we added a detailed figure legend in order to clarify the roles of the different actors of microbiota-gut-brain axys

### Reviewer #2

Good work...

Response: Many thanks for Your appreciation!

Reviewer #3

1. There are some grammatical or spelling mistakes. Such as “There are numerous murine models of IBD, which include, for example, the use of dextran sodium sulfate...”; ”DDS colitis”; “changes in in the integrity of”.

Response: In accordance with Your comment, we re-checked the whole manuscript, thus deleting the aforementioned typos. Furthermore, the manuscript was again corrected by a native English speaker.

2. The full names of abbreviations should be given when they were appeared first time in the text. Then it is better that the abbreviation was used in the following section instead of the abbreviation mix with the full name.

Response: In accordance with Your comment, we re-checked the whole manuscript, thus mentioning the abbreviation with the full name only one time, therefore only the abbreviations.

3. If the passage ”Other animal models have been used to investigate the relationship between ...although not entirely specific to IBD.” should move to section 3.3?

Response: Dear reviewer, many thanks for Your comment. We decided to leave the aforementioned passage in the section 3.2 in order to make easier to the reader the meaning of the way through which inflammation could modify the function of the gut-brain microbiota axis, by explaining the link between stress and inflammation by focusing on animal studies