

## RESPONSE TO REVIEWERS:

**REVIEWER 1:** *good general overview, - a revision would benefit from some in-depth description regarding (current) proposed mechanistic and signaling of probiotic strains (maybe with a figure) in the intestinal mucosa (and beyond!)*

R: We thank Reviewer for interest and appreciation on our paper. According to his suggestion, we added more details about probiotic mechanism, also by a figure (figure 1) and by a table (table 1)

**REVIEWER 2:** *Descriptive, little mechanistic details are provided, good figures are required for a good review. On the other hand, some references are not included, for example; Chung WS1, Walker AW1,2, Louis P1, Parkhill J2, Vermeiren J3, Bosscher D3, Duncan SH1, Flint HJ4. Modulation of the human gut microbiota by dietary fibres occurs at the species level. BMC Biol. 2016 Jan 11;14(1):3. Mendis M1, Leclerc E2, Simsek S3. Arabinoxylans, gut microbiota and immunity. Carbohydr Polym. 2016 Mar 30;139:159-66. de Jesus Raposo MF1, de Moraes AM2, de Moraes RM Emergent Sources of Prebiotics: Seaweeds and Microalgae. Mar Drugs. 2016 Jan 28;14(2). pii: E27. Conlon MA1, Topping DL Dietary polysaccharides and polyphenols can promote health by influencing gut microbiota populations. Food Funct. 2016 Apr 12. [Epub ahead of print] Xu X, Zhang X. Lentinula edodes-derived polysaccharide alters the spatial structure of gut microbiota in mice. PLoS One. 2015 Jan 21;10(1):e0115037. Xu X, Xu P, Ma C, Tang J, Zhang X. Gut microbiota, host health, and polysaccharides. Biotechnol Adv. 2013 Mar-Apr;31(2):318-37.*

R: *We added figure, tables, and more details about probiotic mechanisms. We also added the above mentioned references in the text, together with more recent review and meta-analysis on this topic*

**REVIEWER 3 :** *There are many missing meta-analysis studies that should be considered for improvement of the article and to say current opinion about probiotics in GI. Also the article can be improved if written according to PRISMA.*

R: We added more recent meta-analysis about this topic, and reviewed the manuscript according to the new evidences. We analyzed more than three hundred studies, reporting a great heterogeneity among them, not leading to perform a systematic review and meta-analysis. Therefore our manuscript represents just a clinical update than a systematic review itself, and PRISMA guidelines are only partially followed. However, we try to better summarize our results in larger and more detailed tables, reporting all trials we analyzed.