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Comments for:

FODMAP diet modulates visceral nociception by lipopolysaccharide-mediated intestinal inflammation and barrier dysfunction

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Akkermansia muciniphila in functional GI disorders: good rather than evil?

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We have read with interest the research paper of Zhou et al. concerning the impact of FODMAPs on visceral nociception. Interestingly, authors reported that *Akkermancia muciniphila* was increased by 4.7-fold among Gram-negative bacteria following a high-FODMAP diet. This mucin-degrading bacterium is usually considered beneficial for gut epithelium and in metabolic syndrome. However, its role in irritable bowel syndrome (IBS) seems ambiguous. Indeed, Zhou et al. have shown that rats developed micro-inflammation, increased gut permeability and visceral hypersensitivity following a high-FODMAP diet. These alterations were driven by diet-induced change in microbiota. Since *A. muciniphila* shows the highest relative change in their model, authors speculate that the bacterium plays a key role in the pathophysiology. Clinically, even if we can accept that increased *A. muciniphila* in the microbiota of pediatric IBS patients seems to be correlated with digestive complaints (1), it is less clear in adults since the correlation coefficient was only 0.27 in the study of Rajilic et al. (2). Other studies in the literature rather suggest a beneficial effect of *A. muciniphila* on intestinal barrier: *in vitro* studies suggest that *A. muciniphila* strengthens the integrity of epithelial cell layer in the gut (3). Finally, the bacterium exhibited a preventive effect on DSS-induced colitis (4) and its extracellular vesicles enhanced tight junction function (5).

In conclusion, the implication of *A. muciniphila* with gut health is more complex than suggested by Zhou et al. and requires further studies. The observed increase in *A. muciniphila* relative abundance after high FODMAPs may be just an adaptative process tending to reduce inflammation rather than a contributor to hypersensitivity. Further studies are needed, including quantitative microbiome profiling approaches as well as molecular/mechanistic studies to substantiate the role of *A. muciniphila* in IBS.

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