

## PEER-REVIEW REPORT

**Name of journal:** *World Journal of Gastroenterology*

**Manuscript NO:** 75427

**Title:** Colon mucus in colorectal neoplasia and beyond

**Provenance and peer review:** Invited manuscript; Externally peer reviewed

**Peer-review model:** Single blind

**Reviewer's code:** 05867627

**Position:** Peer Reviewer

**Academic degree:** MD

**Professional title:** Doctor

**Reviewer's Country/Territory:** Portugal

**Author's Country/Territory:** United Kingdom

**Manuscript submission date:** 2022-01-27

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-01-27 16:42

**Reviewer performed review:** 2022-02-01 18:55

**Review time:** 5 Days and 2 Hours

<b>Scientific quality</b>	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
<b>Language quality</b>	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
<b>Conclusion</b>	<input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Peer-reviewer</b>	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous

statements

Conflicts-of-Interest: [ ] Yes [Y] No

## SPECIFIC COMMENTS TO AUTHORS

I found this manuscript very interesting, very well written and the subject in question addressed by the authors is still growing in the scientific community. The importance of CM for the integrity of the barrier is known, whether to prevent contact with harmful bacteria or maintain homeostasis, and impairments in CM structure and function can lead to colonic barrier deterioration that opens direct bacterial access to the epithelium, which can lead to dysregulates epithelial proliferation and causes inflammatory responses with possible carcinogenesis scenarios. I consider the use of images a great asset that will allow the reader to better understand the constitution and function of the CM. This manuscript requires some literature review, especially in terms that are poorly written, as is the case with Firmicutes on page 10, a minor repair. It's a very complete and the importance for the pathogenesis of major colorectal diseases is already recognised. Continuing progress in colon mucus exploration is interesting and likely to be confirmed in further studies.

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**Reviewer's code:** 01587889

**Position:** Editorial Board

**Academic degree:** MD, MSc, PhD

**Professional title:** Associate Professor, Consultant Physician-Scientist

**Reviewer's Country/Territory:** United States

**Author's Country/Territory:** United Kingdom

**Manuscript submission date:** 2022-01-27

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-01-27 16:51

**Reviewer performed review:** 2022-02-06 02:52

**Review time:** 9 Days and 10 Hours

<b>Scientific quality</b>	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
<b>Language quality</b>	<input checked="" type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
<b>Conclusion</b>	<input checked="" type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Peer-reviewer</b>	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous

statements

Conflicts-of-Interest: [ ] Yes [Y] No

## SPECIFIC COMMENTS TO AUTHORS

I enjoyed reading Loktionov et al review article which is focused on the colon specific proteins, mucins, defining structural and functional characteristics of this substance. The paper provides importance of colon mucus which was largely ignored because its structure and functions were obscure. Human colon mucus comprises a dense inner layer impenetrable for bacteria and a loose outer layer providing a habitat for abundant commensal microbiota. Mucus barrier integrity is essential for maintaining homeostatic balance between colonic mucosa and gut microbiota, and its impairment opens direct bacterial access to the epithelium, which induces inflammation and can cause severe disorders, including inflammatory bowel disease and colorectal cancer. Recent advances in colorectal mucus exploration and emerging new clinical applications based on this knowledge are herein discussed. More interesting, the author described recent formation of bacterial biofilms within the inner colon mucus (CM) layer was shown to be associated with both inflammation and cancer. Although obvious gaps in public knowledge of human CM remain, its importance for the pathogenesis of major colorectal diseases, comprising inflammatory bowel disease (IBD) and associated colorectal cancer (IBD-CRC), is generally recognized. Continuing progress in the field of CM exploration promises considerable future achievements and is likely to result in the development of a range of new useful clinical applications addressing colorectal disease diagnosis, prevention, and therapy. It is an outstanding well summarized review. Good job