

PEER-REVIEW REPORT

Name of journal: *World Journal of Virology*

Manuscript NO: 80792

Title: Intestinal barrier dysfunction as a key driver of severe COVID-19

Provenance and peer review: Invited manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 02446337

Position: Editorial Board

Academic degree: MD, PhD

Professional title: Academic Research, Assistant Professor, Doctor

Reviewer's Country/Territory: United States

Author's Country/Territory: Greece

Manuscript submission date: 2022-10-12

Reviewer chosen by: AI Technique

Reviewer accepted review: 2022-10-12 21:30

Reviewer performed review: 2022-10-12 23:05

Review time: 1 Hour

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input checked="" type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Judgment by peer reviewers	Does this manuscript meet the code of ethics standards? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Does this manuscript have important novelty? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Does this manuscript have important creativity or innovation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Does this manuscript use reliable research methods?

	<input type="checkbox"/> [41] Yes <input type="checkbox"/> [40] No Are the manuscript-accompanying data and figures authentic? <input type="checkbox"/> [51] Yes <input type="checkbox"/> [50] No Does this manuscript make scientifically significant conclusions? <input type="checkbox"/> [61] Yes <input type="checkbox"/> [60] No
Language quality	<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
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

The fundamental role of endothelial dysfunction in the systemic manifestations of COVID-19 should be better discussed: -J Clin Med. 2020;9(5):1417; doi: 10.3390/jcm9051417 -Expert Opin Ther Targets. 2020 Jun 27;1-8. doi: 10.1080/14728222.2020.1783243 -Cells. 2020 Jul 9;9(7):E1652. doi: 10.3390/cells9071652 -Biomedicines 2020, 8(11), 462; doi: 10.3390/biomedicines8110462 -Eur Heart J. 2021 May 23;7(3):e2-e3. doi: 10.1093/ehjcvp/pvaa145. -Noncoding RNA. 2021 Feb 2;7(1):9. doi: 10.3390/ncrna7010009 -J Pharmacol Exp Ther. 2022:JPET-AR-2022-001209. doi: 10.1124/jpet.122.001209. -Antioxidants. 2021;10(6):971. doi: 10.3390/antiox10060971. -Pharmacol Res. 2022 Sep;183:106360 -Atherosclerosis. 2021;322:39-50. doi: 10.1016/j.atherosclerosis.2021.02.009. -EClinicalMedicine. 2021 Sep 9;101125. doi: 10.1016/j.eclinm.2021.101125. -Oxid Med Cell Longev. 2021 Aug 21;2021:8671713 -Nutrients. 2021 Nov 5;13(11):3951. doi: 10.3390/nu13113951. -Theranostics. 2021;11(16):8076-8091. -Crit Care. 2021 Aug 25;25(1):306. -Int J Mol Sci. 2022 Sep



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6;23(18):10242. -Front Physiol. 2020 Aug 4;11:989. doi:10.3389/fphys.2020.00989
(chronological appraisal of the publications on COVID-19 and endothelial dysfunction).

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Reviewer's code: 05480683

Position: Peer Reviewer

Academic degree: PhD

Professional title: Academic Fellow, Academic Research, Adjunct Professor

Reviewer's Country/Territory: Italy

Author's Country/Territory: Greece

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Reviewer accepted review: 2022-10-13 18:26

Reviewer performed review: 2022-10-16 18:09

Review time: 2 Days and 23 Hours

Scientific quality	<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
Judgment by peer reviewers	Does this manuscript meet the code of ethics standards? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Does this manuscript have important novelty? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Does this manuscript have important creativity or innovation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Does this manuscript use reliable research methods?

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Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

The review manuscript entitled “Intestinal barrier dysfunction as a key driver of severe COVID-19” by Dr. Tsounis and colleagues provides a detailed overview on the mechanisms of impairment of the gut barrier homeostasis upon SARS-CoV-2 infection. The current state of the art about how intestinal barrier dysfunction might drive severe COVID-19 or induce detrimental complications is also provided. The text is interesting, highly informative, well written and easy to follow. Overall, this topic is quite important and interesting. This review can help to better understand the role of intestinal barrier in counteracting SARS-CoV-2 infection. Figures are highly informative and well organized. While I recommend the article for publication, I have some minor concerns to be reviewed by authors before such publication: Major Although informative, the abstract should be reorganized by reducing its length by 20% for a better readability and by introducing the aim of the review A general introductive paragraph describing general notions on intestinal homeostasis and intestinal immune function, before section



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4, would be helpful for the reader. Authors can check doi: 10.2183/pjab.92.423 and <https://pubs.rsc.org/en/content/articlelanding/2022/fo/d2fo00911k> The topic on SARS-CoV-2 infection and colon cancer should be at least briefly mentioned PMID: 36191449, PMID: 36096812 Minor 1. Abstract, GI, COVID-19, SARS-CoV-2, as well as other acronyms should be carefully checked and mentioned with their complete name the first time being mentioned. 2. Section 2. "The principal route SARS-CoV-2 infection [8]." --->Additional notions on viral proteins and genome are described here <https://www.mdpi.com/2076-2607/10/6/1193> this supporting reference should be included 3. Some words throughout the text are highlighted in bold style which should be removed.