



PEER-REVIEW REPORT

Name of journal: *World Journal of Gastroenterology*

Manuscript NO: 85636

Title: Linolenic acid-metronidazole inhibits the growth of *Helicobacter pylori* through oxidation

Provenance and peer review: Unsolicited manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05072111

Position: Peer Reviewer

Academic degree: PhD

Professional title: Assistant Professor

Reviewer's Country/Territory: Poland

Author's Country/Territory: China

Manuscript submission date: 2023-05-31

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-06-14 05:31

Reviewer performed review: 2023-06-26 07:08

Review time: 12 Days and 1 Hour

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 Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
Creativity or innovation of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation



Scientific significance of the conclusion in this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
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 checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input type="checkbox"/> Yes <input checked="" 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 original article entitled "Linolenic acid-Metronidazole inhibits the growth of Helicobacter pylori through oxidation" focuses on determining the molecular mechanisms of the antibacterial activity of the linolenic acid-metronidazole combination against Helicobacter pylori. Overall, I find the manuscript interesting and accurately describing the experiments carried out to discover this mechanism. To further improve the quality of the manuscript, several modifications are suggested: 1. "Although metonidazole is a relatively cheap ..." -> Although metonidazole is a widely used and cost-effective 2. Please modify the sentences: "Therefore, Lla-Met could be used for preparing antibiotics. It is ideal. But the antibacterial mechanism of the Lla-Met compound remains unclear, this study explored this mechanism", as currently it is difficult to understand the meaning. 3. Section 1.3. -> please provide the model of microscope used here. 4. Please modify the sentence: "a final concentration of 10 ug/mL PI at 37 oC protected fro mthe light 30 min", as currently it is difficult to understand the meaning. 5. Please modify the sentence: "Lla-Met induced the expression of ROS, MdaB, and SodB, all anti-oxidation-related genes in Table 2" -> I believe that it should be stated



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that Lla-Met is inducing production of ROS in H. pylori, and therefore an increased expression of MdaB and SodB, both of which are associated with protection against the oxidative stress. 6. Please modify the sentence: "In this paper, the mechanism of linolenic-metronidazole compound was demonstrated to involve inhibiting H. pylori growth by up-regulating superoxide dismutase MdaB and SodB genes, resulting in excessive ROS accumulation" -> logical mistake. It should be stated that linolenic-metronidazole compound demonstrated antibacterial activity against H. pylori by inducing excessive ROS accumulation, which was not buffered by up-regulating antioxidant-related MdaB and SodB genes. 7. Please modify the sentence: "The results showed that excessive accumulation ROS could affect viability of H. pylori by 20.5% ..." -> The results showed that excessive accumulation of ROS could affect viability of H. pylori by reducing it to 20.5% ...



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Reviewer's code: 04861666

Position: Peer Reviewer

Academic degree: BSc, MSc, PhD

Professional title: Assistant Professor

Reviewer's Country/Territory: India

Author's Country/Territory: China

Manuscript submission date: 2023-05-31

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-06-19 12:54

Reviewer performed review: 2023-06-27 06:12

Review time: 7 Days and 17 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
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	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

As a result of the excessive and improper utilization of antibiotics, the prevalence of drug-resistant H. pylori strains, including those resistant to multiple drugs, is steadily rising. This situation has detrimental effects on the management and treatment of H. pylori infections. Consequently, the development of novel anti-H. pylori agents has become an urgent necessity. In the current study, authors have used a combination of linoleic acid-metronidazole (Lla-Met) for the managing H. pylori. Fortunately, a positive aspect is that H. pylori strains do not developed resistance to Lla-Met. Authors have used different assay to explore the mechanism of their action and concluded that Lla-Met kills H. pylori mainly by inducing oxidative stress, DNA damage, PS ectropionation, and changes on cell morphology. Comments 1. Authors should include details about the combination of Lla-Met, such as the formulation ratio and instructions on how to make it. 2. How many replicates were used for each experiment?