

## Peer Review Report

# Review Report on Understanding mitochondrial potassium channels: 33 years after discovery

Mini Review, Acta Biochim. Pol.

Reviewer: Martin Jabůrek

Submitted on: 03 May 2024

Article DOI: 10.3389/abp.2024.13126

### EVALUATION

#### **Q 1** Please summarize the main theme of the mini review

This brief review termed "Understanding mitochondrial potassium channels: 33 years after discovery" covers and summarizes selected findings related to the research on mitochondrial potassium channels. comes from an author who has a well-documented history in the field of mitochondrial potassium channels. It presents his personal view on our understanding of the potassium channels and is readable and generally well-structured and organized.

#### **Q 2** Please highlight the limitations and strengths.

The concise review comes from an author who has a well-documented history in the field of mitochondrial potassium channels. It presents his personal view on our understanding of the potassium channels and is readable and generally well-structured and organized.

The limitations include several vague phrases and statements that would benefit from clarification. Also, several sentences would benefit from a grammar correction.

#### **Q 3** Does the review include a balanced, comprehensive and critical view of the research area?

Yes. It is a mini-review, not a comprehensive full review. Therefore, it is expected that the author is selective as to what research to focus on and what references to include.

### Check List

#### **Q 4** Is the English language of sufficient quality?

Yes.

#### **Q 5** Is the quality of the figure and/or table satisfactory?

Yes.

#### **Q 6** Does this manuscript refer only to published data? (unpublished or original data is not allowed for this article type)

Yes.

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**Q 7** Does the manuscript cover the topic in an objective and analytical manner?

Yes.

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**Q 8** Does the reference list cover the relevant literature adequately and in an unbiased manner?

Yes.

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**Q 9** Does the manuscript include recent developments?

Yes.

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**Q 10** Does the review add new insights to the scholarly literature with respect to previously published reviews?

Yes.

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**Q 11** Please provide your detailed review report to the editor and authors (including any comments on the Q4 Check List):

This brief review comes from an author who has a well-documented history in the field of mitochondrial potassium channels. It presents his personal view on our understanding of the potassium channels and is generally well-structured and organized. My points are minor and deal mainly with several vague statements and sentences, that lack clarity.

1. In the Abstract and in the main text, the author uses the phrases "synthesis of reactive oxygen species" and "ROS synthesis". These phrases are not usual in this context and may be generally misleading in the true meaning of the word synthesis. For example, we say that "superoxide is produced by the one-electron reduction of molecular oxygen:". Therefore, the words "formation" or "production" or "generation" are better to use in this context and should replace the word "synthesis".
2. The Abstract, line 14: add the word "membrane" to "mitochondrial potential" for clarity
3. Introduction, page 2, line 37: replace the word "synthesis" in the phrase "(ROS) synthesis"
4. Page 3, line 71: the abbreviation mitoKATP does not correspond to the general abbreviation used for mitochondrial potassium channels (mitoK) and the context of the sentence. Please, clarify.
5. Page 3, line 83: The sentence "It is probable that the indirect modulation of ROS synthesis by mitoK channels contributes to this phenomenon" would benefit from clarification. Not only because of the vague terminology but also because of the vague reasoning. What would be the reason? Are there experiments and related references to support this statement? Please, clarify.
6. Page 4, line 98: The sentence reads "...questioning in the 90's the presence of these presence at all". The author probably meant "... the presence of these channels...". Please, clarify.
7. Page 4, line 112: the sentence would benefit from clarification. A merging coupling "and" seems to be missing.
8. Page 5, lines 124-129: The author might consider mentioning that what he calls the "glibenclamide receptor" was termed ATP-binding subunit of the mitochondrial ATP-sensitive potassium channel and is a product of the gene ABCB8/MITOSUR
9. Page 6, line 155: please, replace the word "synthesis" in the phrase "the synthesis of ROS by mitochondria"
10. Page 7, line 185: The sentence "A recent report revealed a similar interaction..." is lacking a reference to that report.
11. Page 7, line 207: please, replace the word "synthesis" in the phrase "ROS synthesis"

## QUALITY ASSESSMENT

**Q 12** ➤ Quality of generalization and summary

☒☒☒☒☐

**Q 13** ➤ Significance to the field

☒☒☒☒☐

**Q 14** ➤ Interest to a general audience

☒☒☒☐☐

**Q 15** ➤ Quality of writing

☒☒☒☐☐