Peer Review Report

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

Mini Review, Acta Biochim. Pol.

Reviewer: Dominika Malińska
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EVALUATION

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

The review summarizes the historical and recent discoveries in the field of mitochondrial potassium channels. It also points at the gaps in our knowledge which are worth of further clarification.

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

Strength of the manuscript is the synthetic way of presenting the current knowledge on mitochondrial potassium channels, and pointing the valuable research directions. Due to short form of the article, some important aspects are only briefly mentioned, but always with redirection to recent reviews covering the topic in more details.

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

Yes, the review includes a balanced, comprehensive and critical view of the research area.

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 (unpublished or original data is not allowed for this article type)**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.

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

Yes.

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

Yes.

Q 9 Does the manuscript include recent developments?

Yes.

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

Yes.

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

The manuscript presents current state of knowledge on the topic in clear, synthetic and well structured way. I have only minor remarks to take into consideration before publication:
1. lines 221-222 - since mitochondrial membrane potential of -180 mV occurs only in highly polarized mitochondria (mostly in isolated mitochondria provided with excess of respiratory substrates and in absence of potential dissipating processes) I would recommend to write "up to -180 mV" instead of "around -180 mV", since in most of physiological conditions this potential is for sure lower.
2. line 143 - would be good to add citations mentioning cytoprotective effects in cardiac and neuronal tissue.
Editing remarks:
3. line 98 - "...the presence of these channels/proteins"?
4. line 242 - "to identify pharmacological modulators? specific only for mitoK channels"

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