Review of: "Inhibiting Efflux Pumps and Resistance Mechanisms: A Mini Review"

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Potential competing interests: No potential competing interests to declare.

[This review is meant for the November 20, 2023 version of the article.]

Dear Authors,

I accepted the invitation from Alberto Bedogni of the Peer Review Team, Qeios mainly because this min-review was focused on the narrow field of efflux mechanism of antibiotic resistance which was warranted after our recently published review titled “Revisiting Antibiotic Resistance: Mechanistic Foundations to Evolutionary Outlook” DOI: https://doi.org/10.3390/antibiotics11010040).

Here are some comments to improve the article:

1. A picture is worth a thousand words. A simplistic diagram of the efflux pump will make the readers better understand its structure than writing a voluminous amount of text. Please do the needful for the readers.
2. In section 1.2., you have written “Efflux pumps come in different shapes, sizes, and flavors. Okay, maybe not flavors, but you get the point.” However, you have not classified the efflux pumps based on shape or size (the ‘flavor’ joke is unnecessary). Instead, you classified them based on specificity to certain antibiotics or multiple groups of antibiotics. Please stay precise and avoid unnecessary phrases.
3. In the same section (i.e., 1.2) What are MVPs? Please expand at first use.
4. In section 2.1, you have written “Picture this: you throw a wild party (the bacteria) and invite some unwelcome guests (the antibiotics).” Please write straightforwardly instead of using this analogy. The use of this kind of analogy diverts readers from the scientific thoroughness.
5. In section 4.2, “4.2. Developing Small Molecule Inhibitors”, you have written, “These small molecule inhibitors are designed to specifically target and inhibit the efflux pumps without interfering with other cellular processes.” Site examples of small molecule inhibitors you are talking about. Similarly, use examples of natural compounds for the “4.3. Utilizing Natural Compounds as Efflux Pump Inhibitors” section.
6. In section 7.2, you could also outline specific names (describe specific case studies) of Efflux Pump Inhibitors (EPIs) that have been trialed and failed.

In fine, this mini-review on the role of efflux pumps in antibiotic resistance could be revised further to equip researchers with leads for forthcoming studies.

With best wishes,

Dr. Debprasad Dutta