# Article information:

An ultra-small fluid oscillation unit for pumping driven by self-organized three-dimensional bridging of pulsatile cardiomyocytes on elastic micro-piers - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S0925400519306100>

# Article summary:

1. An ultra-small fluid oscillation unit was developed using cardiomyocytes.

2. Self-organized bridging of cardiomyocytes in microgrooves was investigated to power the pump.

3. The theoretical flow rate of the pump was 1.0 nL/min, and it could be used for applications such as in vivo micropumps, small-scale organs-on-a-chip and large-scale drug discovery assays.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is generally reliable and trustworthy, as it provides a detailed description of the research conducted and its results. The authors provide evidence for their claims by citing relevant literature and providing experimental data to support their findings. Furthermore, they discuss potential applications of their device, which adds to its credibility.

However, there are some points that could be improved upon in terms of trustworthiness and reliability. For example, the authors do not explore any counterarguments or potential risks associated with their device or its applications. Additionally, they do not present both sides equally when discussing potential applications; instead, they focus on the positive aspects without considering any possible drawbacks or limitations that may arise from using this device in certain contexts. Furthermore, there is a lack of discussion regarding ethical considerations related to using cardiomyocytes as an energy source for the pump; this should be addressed in future research on this topic. Finally, there is a lack of detail regarding how the device will be implemented in practice; more information should be provided on this aspect if possible.

# Topics for further research:

* Ethical considerations of cardiomyocyte energy sources
* Potential risks associated with cardiomyocyte-powered pumps
* Practical implementation of cardiomyocyte-powered pumps
* Counterarguments to cardiomyocyte-powered pumps
* Limitations of cardiomyocyte-powered pumps
* Advantages and disadvantages of cardiomyocyte-powered pumps

# Report location:

<https://www.fullpicture.app/item/0e0b3ce4feac23bdb410668d338c69aa>