

Review of: "Self-Driving Development of Perfusion Processes for Monoclonal Antibody Production"

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Potential competing interests: No potential competing interests to declare.

Strengths:

1. **Relevance of the Topic:** The article highlights the increasing need for automated biotechnological processes in the pharmaceutical industry, which is a key issue for optimizing time and resources.
2. **Integrated Framework:** The introduction of a framework that includes a Bayesian experimental design algorithm, a cognitive digital twin, and mini-bioreactor systems clearly demonstrates the article's innovation.
3. **Experimental Results:** Presenting experimental results from a 27-day cultivation operated by an autonomous software agent serves as a strong proof of concept, enhancing the scientific credibility of the article.

Weaknesses:

1. **Depth of Analysis:** The article could provide more details on the operational challenges and practical limitations of these systems, especially regarding implementation in industrial settings.
2. **Details of Results:** Including more specific data about the outcomes achieved, such as the particular metrics used to assess success, could make the article more persuasive.
3. **Future Developments:** Discussing future research directions and how to further develop these technologies could add more value to the article.

Conclusion:

The article clearly addresses a significant gap in the scientific literature and introduces interesting innovations regarding the use of autonomous technologies in biotechnology. However, it could be improved by incorporating more details about challenges and results.