Metixene identified as a promising candidate in the treatment of metastatic brain cancer

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Graphical abstract. Credit: Journal of Clinical Investigation (2023). DOI: 10.1172/JCI161142
A new study has revealed that Metixene, an antiparkinsonian drug, has shown remarkable potential as a novel treatment for metastatic breast cancer and brain metastases, providing hope for patients facing this devastating disease. The study was conducted by a team of researchers led by Dr. Jawad Fares at Northwestern University and was published in the *Journal of Clinical Investigation*.

Metastatic brain cancer, particularly in the context of breast cancer, represents a significant challenge in the field of oncology, with limited therapeutic options and poor clinical outcomes. However, this study has identified Metixene as a potential game-changer in the fight against this formidable disease.

In a comprehensive investigation, the research team screened a library of 320 central nervous system small-molecule inhibitors known to be blood-brain barrier permeable and approved by the U.S. Food and Drug Administration. Metixene emerged as a standout candidate, demonstrating the ability to reduce cancer cell viability and induce cancer cell death in various metastatic breast cancer subtypes.

Key findings of the study include:

- **Effective Tumor Reduction:** Metixene significantly reduced mammary tumor size in orthotopic xenograft assays, highlighting its potential as a therapeutic agent.
- **Enhanced Survival:** In an intracardiac model of multiorgan site metastases, Metixene improved survival rates, offering hope to those with widespread metastatic disease.
- **Extended Survival in Brain Metastases:** Metixene also exhibited efficacy in mice with intracranial xenografts and in an intracarotid model of multiple brain metastases, significantly extending survival rates in these challenging scenarios.
These promising results open up new possibilities for the treatment of metastatic brain cancer. Furthermore, Metixene's reported minimal side effects in humans make it a strong candidate for clinical translation, offering a glimmer of hope for patients worldwide.

**More information:** Jawad Fares et al, Metixene is an incomplete autophagy inducer in preclinical models of metastatic cancer and brain metastases, *Journal of Clinical Investigation* (2023). [DOI: 10.1172/JCI161142](https://doi.org/10.1172/JCI161142)

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