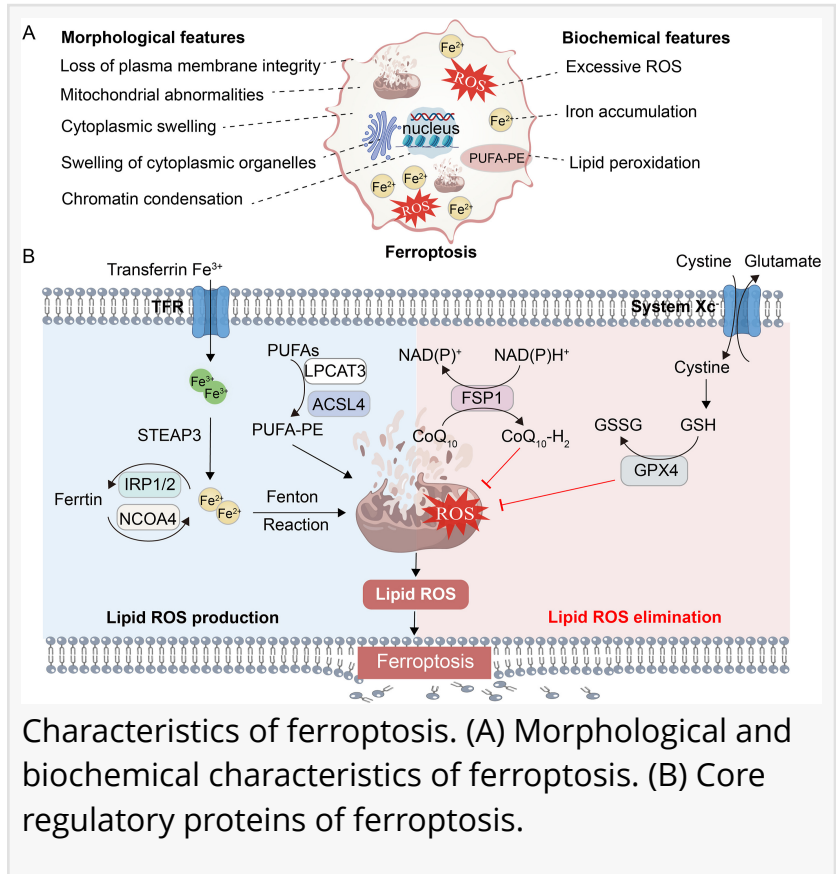


# Traditional Chinese Medicine Unlocks New Potential in Treating Diseases Through Ferroptosis Regulation

SHANNON, CLARE, IRELAND, March 10, 2025 /EINPresswire.com/ -- Innovative insights into the role of ferroptosis, a unique form of programmed cell death, are reshaping the landscape of disease treatment. This growing field highlights how Traditional Chinese Medicine (TCM) can effectively modulate ferroptosis, offering novel therapeutic approaches for various conditions, including cancer, cardiovascular diseases, neurodegenerative disorders, and organ injuries. The powerful bioactive compounds in TCM have demonstrated the ability to regulate iron metabolism, lipid peroxidation, and redox balance, positioning them as key players in advancing modern medicine.



Characteristics of ferroptosis. (A) Morphological and biochemical characteristics of ferroptosis. (B) Core regulatory proteins of ferroptosis.

With its rich history of holistic healing, TCM is emerging as a major force in precision medicine, providing targeted treatments that align with the body's natural processes. Certain TCM compounds and monomers exhibit remarkable efficacy in enhancing or inhibiting ferroptosis, thereby offering a dual strategy to either suppress tumor growth or protect healthy tissues from oxidative stress. These findings reinforce the importance of harnessing natural medicinal chemistry to refine therapeutic interventions, ultimately reducing side effects and improving patient outcomes.

The intricate mechanisms of ferroptosis involve a delicate interplay between glutathione metabolism, iron homeostasis, and oxidative stress pathways. The ability of TCM formulations to fine-tune these biological processes underscores their therapeutic versatility. By leveraging polyphenols, flavonoids, alkaloids, and terpenoids, researchers have unlocked potent strategies

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Significant traditional Chinese medicine (TCM) monomers involved in ferroptosis and their targets.

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## Reference

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