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Regulation of Ferroptosis: Uncovering Mitochondria-Related Signalling Pathways in Breast Cancer

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Breast cancer, a multifaceted and prevalent disease, remains a formidable challenge in oncology. Recent

(e.g., DCFH-DA). Mitochondrial respiration was evaluated using the Seahorse XF Analyzer.

Immunoblotting and immuno uorescence

Protein expression levels of key mitochondrial and ferroptosis-related markers (e.g., GPX4, SLC7A11) were analyzed by immunoblotting. Mitochondrial morphology was visualized using immuno uorescence staining of TOM20 or electron microscopy.

Cell viability and Ferro ptosis assays

Cell viability was assessed by MTT or CellTiter-Glo assays. Ferroptosis was quanti ed by lipid peroxidation measurement (e.g., MDA levels) and assessment of morphological changes using light microscopy.

Results

Mitochondrial dysfunction sensitizes to Ferro ptosis

Treatment with mitochondria-targeting compounds resulted in altered mitochondrial function, as indicated by reduced ΔΨm and increased ROS production. ese changes were associated with heightened susceptibility to ferroptosis-inducing agents, as evidenced

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Con ict of Interest

None

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