

# Use Case: Mitochondrial Health Assay

- › Cell Type: U2OS human osteosarcoma cell line in 384-well plate format

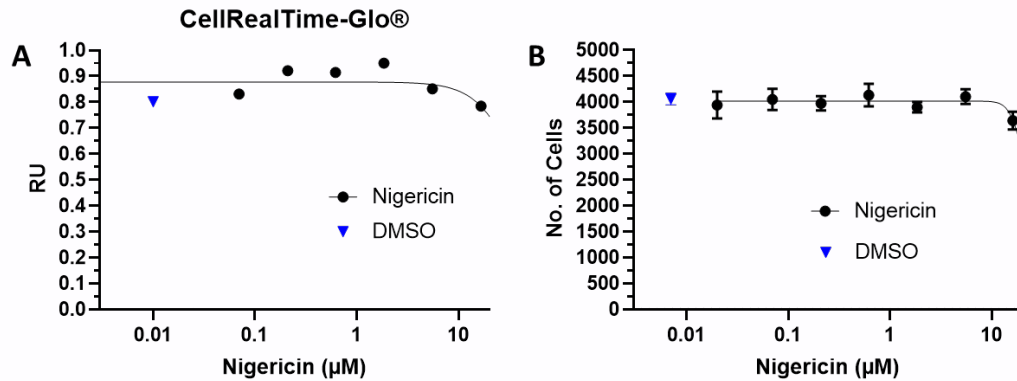


Figure 1: Evaluation of nigericin cytotoxicity, 24 hours treatment, shown by the cell viability assay "CellRealTime-Glo®" (A) and the number of the cells per well (B)

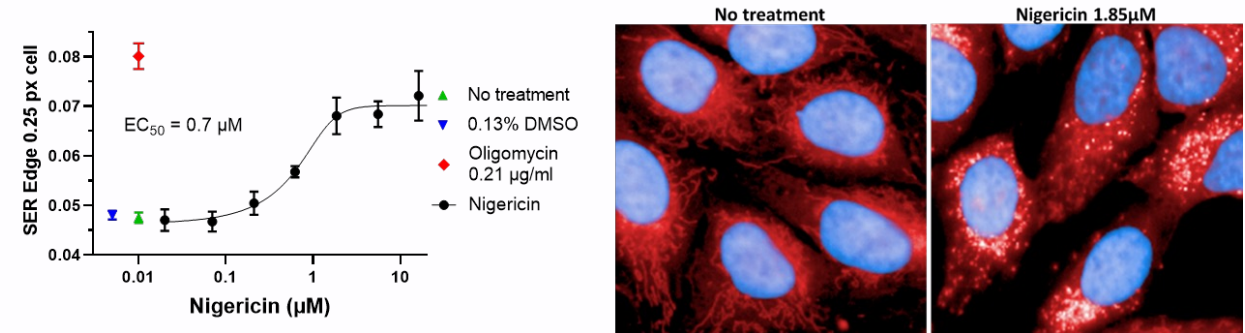


Figure 2: Texture features are useful descriptors of cellular phenotypes and treatment effects. Texture analysis, particularly the 'SER Edge' feature, enhances the assay's sensitivity in detecting cellular changes and generating dose-response curves for test compounds like nigericin.

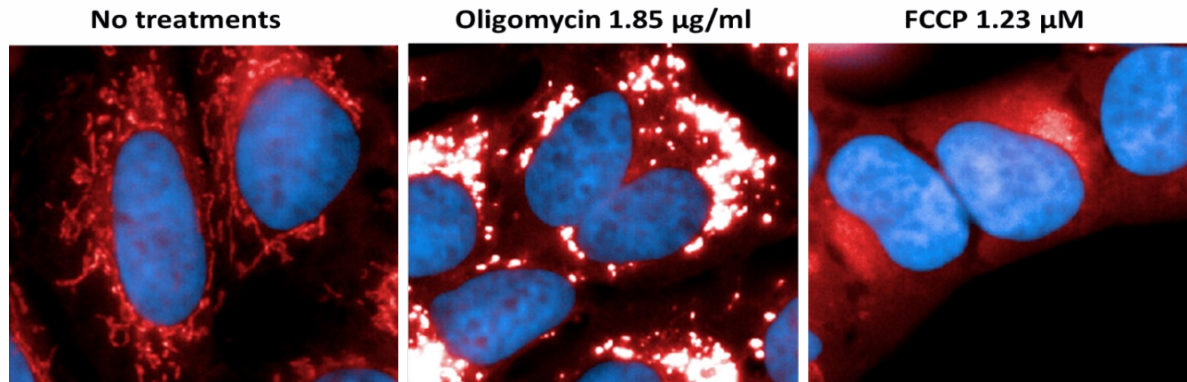


Figure 3: Mitochondrial staining of U2OS cells following neutral and scale control treatments.

Cationic dyes accumulate in mitochondria due to negative potential. Fixable stains enable multiplexed imaging. Healthy mitochondria appear reticular. FCCP depletes mitochondria by decreasing potential; oligomycin increases it, causing granular phenotype. Morphology and texture analysis reveal toxicity.