

CASY^{VIVO} Cell Counter & Analyzer - Powering Breakthroughs in Cell Research

Pirfenidone's Anti-Proliferative Effect on Cardiac Fibroblasts

Meyer et al. (2023). Pirfenidone affects human cardiac fibroblast proliferation and cell cycle activity... **Archives of Pharmacology**, 396:1687-1699. DOI: 10.1007/s00210-023-02434-y.

2D & 3D Culture; human cardiac fibroblasts	
Index	CC12
Standardization	X
Counting	X
Viability	X
Volume	

The Challenge:

To accurately quantify the dose-dependent effect of the anti-fibrotic drug Pirfenidone (PFD) on the proliferation (cell number) of human cardiac fibroblasts (CF) in both 2D cultures and 3D engineered connective tissues (ECT).

CASY's Contribution:

CASY automated cell counts proved that Pirfenidone (PFD) inhibits human cardiac fibroblast (CF) proliferation concentration-dependently in 2D cultures and significantly reduces final cell populations in 3D engineered cardiac tissues (ECTs).

Key Benefits to Researchers:

- **High Precision:** CASY delivered exact automated cell counts, essential for determining the concentration-dependent inhibitory effects of PFD on CF proliferation.
- **Environment Versatility:** The system effectively measured cell numbers in both standard 2D cultures and complex 3D engineered cardiac tissues.
- **Reliable Validation:** Quantitative data provided robust validation of PFD's anti-proliferative impact, supporting its potential for treating cardiac fibrosis.

This figure illustrates the concentration-dependent reduction of CF counts in 2D and 3D environments, where cell density was strictly standardized by CASY for accurate comparison.

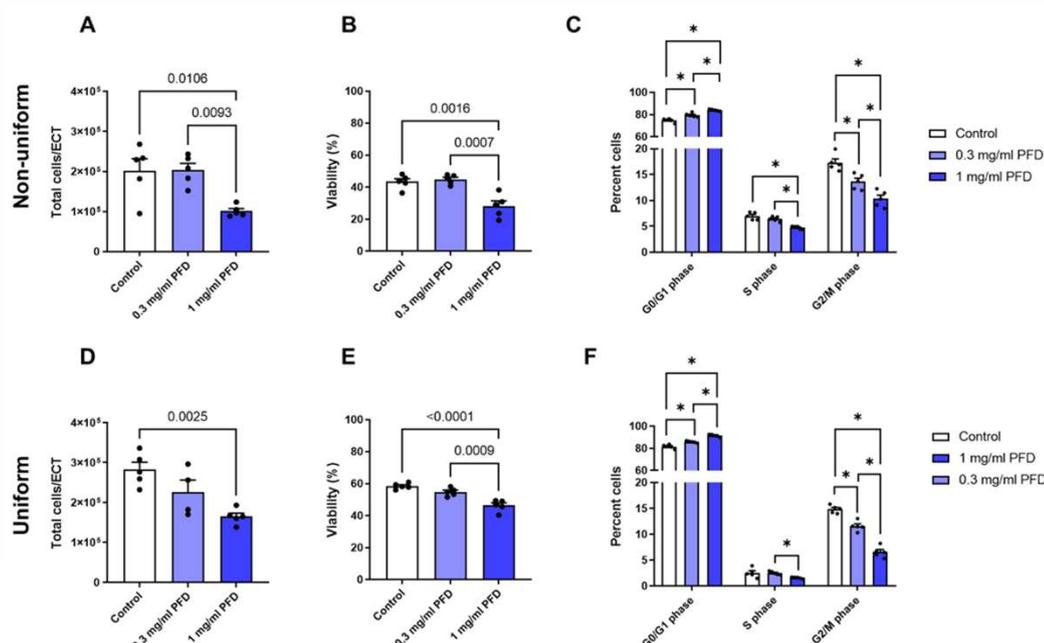


Fig. 4 PFD impairs cell viability and cell cycle activity of CF in ECT... Cell numbers and viability were analyzed with a CASY...