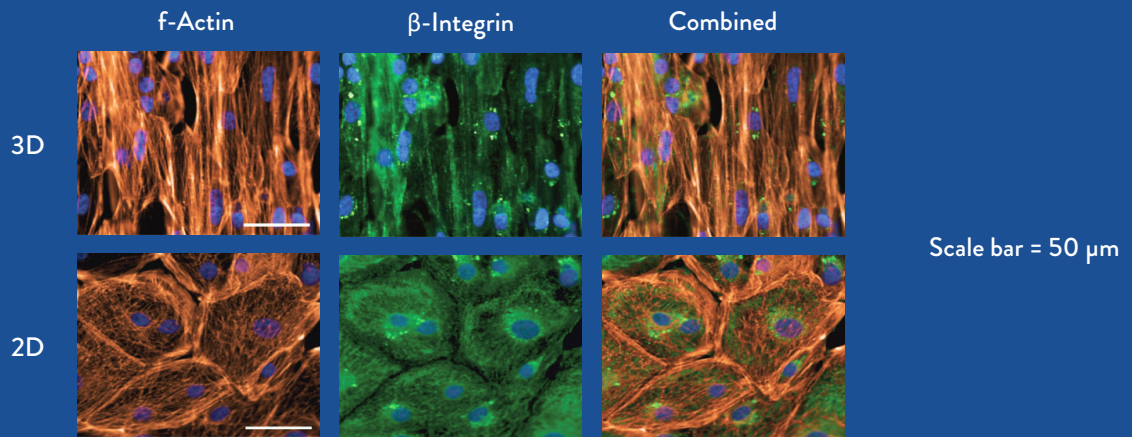


MIMETIX® CARDIOTOXICITY

STRUCTURAL DIFFERENCES OF CARDIOMYOCYTES ON MIMETIX ALIGNED VS 2D

Cells were grown for 14 days, fixed and stained with antibodies for f-actin (orange) and integrin b-1 (green), and imaged with GE InCell2000 Analyzer. Blue: Nuclei (Hoechst staining).

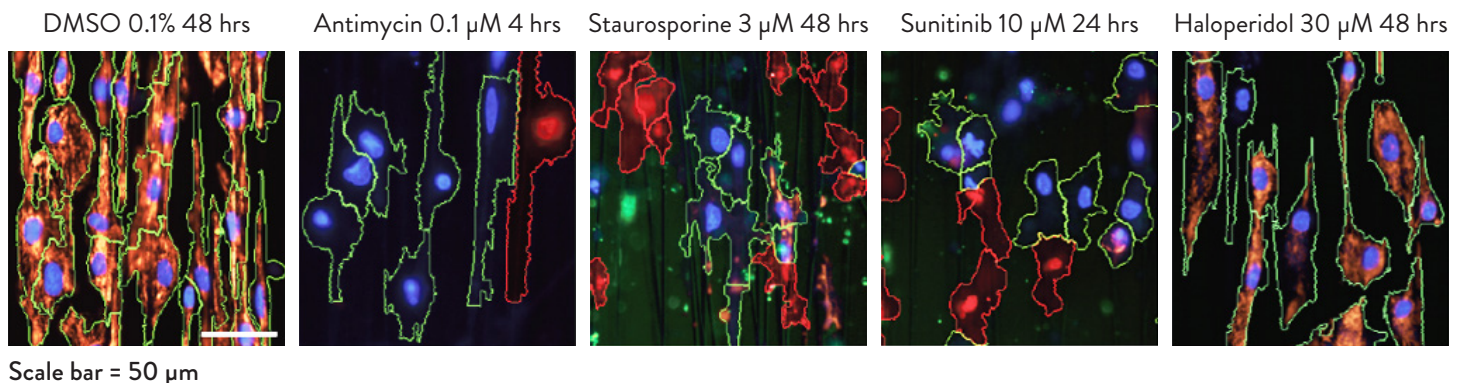
hiPSCCMs grown on Mimetix® resembled a native human cardiac tissue, and the inner cell structures shared closer similarity to the native CMs, with myofibrils aligned along the long cell axis and clearly visible Z-lines.*



CARDIOMYOCYTES RESPOND TO DRUGS AS EXPECTED IN THE MIMETIX SCAFFOLD

Effects of antimycin, staurosporine, sunitinib, and haloperidol on hiPSC-CMs after 12 days of culture. Cells were stained with Annexin V (green), TMRM (orange), RedDot (red) and Hoechst (blue). Green mask : cytoplasm outline; red mask : dead cells (excluded from analysis); cells without mask : out of focus (excluded from analysis).

Treatment with Antimycin Staurosporine and Sunitinib, 3 potent mitochondria and kinase inhibitors, disrupted the mitochondria and contributed to significant apoptosis. Haloperidol, an antipsychotic drug caused slight changes and was much less potent.*

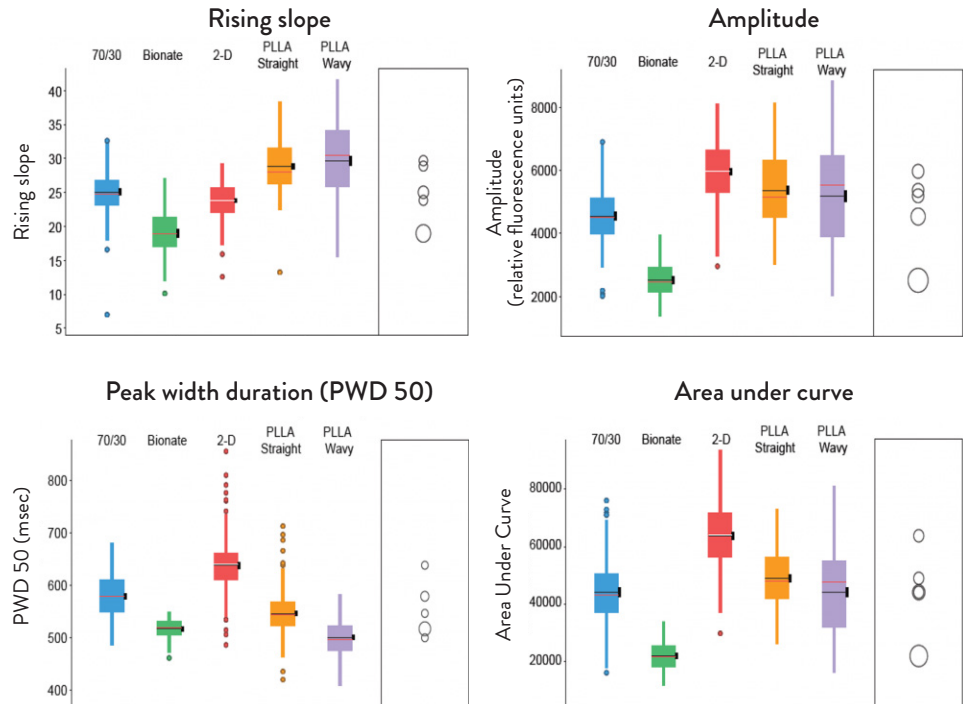


THE MIMETIX SCAFFOLD SIGNIFICANTLY IMPROVES CARDIOMYOCYTE FUNCTION

Calcium transient parameters from multiple wells across replicate plates (1 – 3) were averaged for each plating condition. Comparison circles to the right of each box plot show statistical significance of differences ($\alpha=0.01$), with no overlap indicating statistical significance.

Rising slopes in the PLLA plates are higher in 3D. This suggests faster kinetics of calcium response, as expected in more mature cells.

All of the 3D aligned plate conditions showed statistically significantly smaller amplitudes, as well as smaller peak width durations, thus making the total area under the curve smaller. This implies a more rapid clearance of calcium in the aligned cells as compared to 2D.*



*Experimental work performed at Merck, USA

Description	Pack Size	Catalogue No.
96-well plate with Mimetix aligned fibres (PLLA, 2 micron fibre diameter, 2-4 micron thick)	1 plate	AMS.TECL-005-1X
	8 plates	AMS.TECL-005-8X
12-well plate containing cell crown inserts of Mimetix aligned fibres (PLLA, 2 micron fibre diameter, 2-4 microns thick)	1 plate	AMS.TECL-006-1X
	8 plates	AMS.TECL-006-8X
384 well plate, Mimetix aligned fibres, 2 micron fibre diameter with rhodamine, sterile-PLLA-Fixed scaffold	1 plate	AMS.TECL-015-1X
	8 plates	AMS.TECL-015-8X