Contractile force measurement is an important prerequisite for applications of human induced pluripotent stem cell-derived cardiomyocytes (hiPSC-CMs) in disease modeling and in vitro drug screens. Contractile force calculation is available as an analysis parameter for the FLEXcyte 96. This innovative technology greatly enhances the evaluation of drug candidates in cardiac safety, tox, efficacy studies or basic research.
Throughput, flexibility, pro-maturation

» Flexibility is key for a pro-maturation effect on cultured human iPSC-derived cardiomyocytes. «

Throughput is essential when working with precious materials, such as patient cells or when running multiple drug assays. Standard format 96-well plates ensure optimal experimental flexibility, data reliability and speed. Electrical, optical and pressure stimulation options offer the perfect tool for contractility research in the pre-clinical field.

The graph on the right shows contractile force values as identified in different 2D or 3D cell models with different culture times. hiPSC-CMs cultured on FLEXcyte 96 plates show increasing contractile force over prolonged culture times (hEHT = human engineered heart tissue). [1Tulloch et al., 2011; 2Schaaf et al., 2011; 3Turnbull et al., 2014; 4Masumoto et al., 2016; 5Ruan et al., 2016; 6Sasaki., 2018; 7Tiburcy et al., 2017; 8Zhang et al., 2013; 9Jackman et al., 2018]

Maturity indicators beat rate and contractile force in iCell® Cardiomyocytes are shown in the graphs on the right. Cells were being cultured on FLEXcyte 96 plates over 40 days.