Human induced pluripotent stem cells for translational cardiology – challenges and solutions

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Human induced pluripotent stem cells (hiPSC) provide an unlimited supply of differentiated human cells including cardiomyocytes and may advance translational cardiology in terms of cardiac safety pharmacology, in vitro modeling of cardiac disease and cardiac regeneration. 10 Years after their discovery, limitations are recognized and means developed to overcome them, but hiPSC are becoming a routine tool in experimental laboratories and first applications at the cusp of industrial application. Thomas Eschenhagen pioneered the engineering of 3-dimensional heart tissues from hiPSC to overcome some of the current limitations of hiPSC cardiomyocytes.