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Cardiomyocytes from human pluripotent stem cells: From laboratory curiosity to industrial biomedical platform

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## **ACCEPTED MANUSCRIPT**

# Cardiomyocytes from human pluripotent stem cells: From laboratory curiosity to industrial biomedical platform

Chris Denning<sup>1</sup>, Viola Borgdorff<sup>1</sup>, James Crutchley<sup>1</sup>, Karl S. A. Firth<sup>1</sup>, Vinoj George<sup>1</sup>, Spandan Kalra<sup>1</sup>, Alexander Kondrashov<sup>1</sup>, Minh Duc Hoang<sup>1</sup>, Diogo Mosqueira<sup>1</sup>, Asha Patel<sup>1</sup>, Ljupcho Prodanov<sup>1</sup>, Divya Rajamohan<sup>1</sup>, William C. Skarnes<sup>2</sup>, James G. W. Smith<sup>1</sup>, Lorraine E. Young<sup>1</sup>.

#### Address:

<sup>1</sup> Department of Stem Cell Biology, Centre for Biomolecular Sciences, University of Nottingham, NG7 2RD, United Kingdom.

<sup>2</sup> Wellcome Trust Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge, UK

**Key words**: human embryonic stem cells; human induced pluripotent stem cells; Cas9/CRISPR genome editing; cardiomyocytes; drug screening; disease modelling; maturation factors; muscular thin films; engineered heart tissue; automated scalability; high content platforms; calcium imaging; electrophysiology; mitochondria; contractility.

Running title: hPSC-CMs: From laboratory to industry

Corresponding author: chris.denning@nottingham.ac.uk

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