Press Release
21 March 2016

Metrion Biosciences and EU partners receive €2.2M funding award under Eurostars SME programme

Consortium to develop stem cell-derived cardiomyocyte reagents, platforms and phenotypic screening assays

- **Consortium includes Metrion Biosciences (UK), Nanion Technologies (Germany) and Leiden University Medical Center (Netherlands)**
- **CiPA compliant stem cell-derived cardiomyocyte assays will complement Metrion's existing CiPA cardiac ion channel panel**
- **CiPA initiative aims to replace current cardiac safety regulations and allow a more accurate determination of proarrhythmic risk earlier in the drug R&D process**

Cambridge, UK, 21 March 2016: Metrion Biosciences Ltd ("Metrion"), the specialist ion channel CRO, today announced it is leading a consortium in receipt of a €2.2 million funding award under the Eurostars SME programme. Metrion, with partners Nanion Technologies ("Nanion", www.nanion.de) and the stem cell cardiomyocyte group at Leiden University Medical Center ("Leiden", www.lumc.nl), will use the funding to develop improved human inducible pluripotent stem cell (iPSC)-derived cardiomyocytes and screening platforms. The goal of the project is to develop innovative phenotypic cardiac safety assays enabling improved evaluation of the proarrhythmic risk of novel therapeutics. The project has received funding from the Eurostars-2 joint programme with co-funding from the European Union Horizon 2020 research and innovation programme and from Innovate UK, the UK's innovation agency.

Metrion will use Nanion's CardioExcyte96 platform, which enables simultaneous recording of cardiac cell electrical activity and contractility, to develop CiPA (Comprehensive *in vitro* Proarrhythmic Assay) compliant cardiac safety assays using human iPSC-derived cardiomyocytes developed at Leiden. The resulting proprietary phenotypic assays will be commercialised by Metrion and offered to customers, alongside the company's existing CiPA-approved human cardiac ion channel panel and manual patch clamp electrophysiology capabilities.

The CiPA initiative is being sponsored by the FDA to improve the protocols for assessing proarrhythmic risk for novel therapeutics. The new initiative aims to combine screening of an expanded panel of *in vitro* human cardiac ion channel targets (including hERG) with computer modelling to assess the overall risk of new chemical entities to induce arrhythmia in human cardiac cells. The *in vitro* screening data and *in silico* predictions will be validated using translational assays employing human iPSC-derived cardiomyocytes. This approach should enhance the accuracy with which new drugs are evaluated for proarrhythmic risk and allow earlier detection of cardiac safety issues. The CiPA initiative may also prevent the exclusion of potentially useful therapeutics as well as enabling the repurposing of previous drug candidates sidelined solely as a result of their *in vitro* hERG

liability. The more predictive evaluation of proarrhythmic risk may also mitigate the requirement to perform costly Thorough QT studies in the clinic.

Dr Marc Rogers, CSO of Metrion Biosciences, commented: “We are delighted to be working alongside leading experts in stem cell cardiomyocytes and screening platform technologies to develop these new assay capabilities. This project supports Metrion’s goal of becoming a leading CRO provider in the cardiac safety screening market, enabling customers to access all three CiPA-related services through one provider.”

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Notes to editors

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About Metrion Biosciences www.metrionbiosciences.com
Metrion Biosciences provides customers with access to a range of high quality ion channel assays on a fee-for-service or collaboration basis. Metrion Biosciences’ specialist ion channel expertise includes an industry leading panel of *in vitro* cardiac ion channel safety assays, translational native cell and phenotypic assays for neurological and cardiotoxicity testing, and a range of other ion channel screening services such as cell line development and optimisation. Metrion Biosciences is able to provide tailored assay formats, data analysis and reporting solutions, effective project management and quality assured data packages.

About the CiPA Initiative https://www.ilsiextra.org/hesi/science/cardiac/cipa/SitePages/Home.aspx
The CiPA initiative is being developed by the FDA in collaboration with other international regulatory bodies to improve the regulations for assessing proarrhythmic risk for novel therapeutics. The current cardiac safety regulatory requirements have successfully prevented any new drugs coming to market with unknown proarrhythmic risk, but require expensive and time-consuming screening before a new drug can reach the clinic. This approach also places too much emphasis on *in vitro* studies evaluating the promiscuous action of compounds on the hERG potassium channel, and has removed otherwise promising chemical scaffolds from the drug discovery pipeline even though they may not be associated with cardiac proarrhythmia.

The new CiPA initiative aims to combine screening of an expanded panel of *in vitro* human cardiac ion channel targets (including hERG) with computer modelling to assess the overall risk of new chemical entities to induce arrhythmia in human cardiac cells. The *in vitro* screening data and *in silico* predictions will be validated using translational assays employing human iPSC-derived cardiomyocytes. This approach should enhance the accuracy with which new drugs are evaluated for proarrhythmic risk and allow earlier detection of cardiac safety issues, as well as prevent the exclusion of potentially useful therapeutics; the CiPA approach may also enable the repurposing of

previous drug candidates sidelined solely through their *in vitro* hERG liability. Finally, it is anticipated that the thorough evaluation of proarrhythmic risk by the CiPA method will mitigate the requirement to perform costly Thorough QT studies in the clinic.

About the Eurostars Programme

The Eurostars programme is funded by EUREKA member countries and the European Union Horizon 2020 Framework Programme. For more information please visit: http://ec.europa.eu/programmes/horizon2020/en/h2020-section/eurostars-programme

About Innovate UK

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