

# Three-dimensional cell cultures as predictive tools in early drug discovery

*SMI's Pharma is proud to announce the 3rd Annual 3D Cell Culture is taking place at the Copthorne Tara Hotel in London, UK on 20th and 21st February 2019.*

LONDON, LONDON, UNITED KINGDOM, January 8, 2019 /EINPresswire.com/ -- Based on the recent article from \*Drug Target Review, [three-dimensional cell cultures](#) (spheroids, organoids) are becoming widely used as a new predictive tool in early drug discovery. The use of [3D cell cultures](#) is believed to provide a more physiologically relevant response than monolayer (2D) cell cultures because they closely mimic the extracellular matrix and cell-cell interactions that occur in vivo.

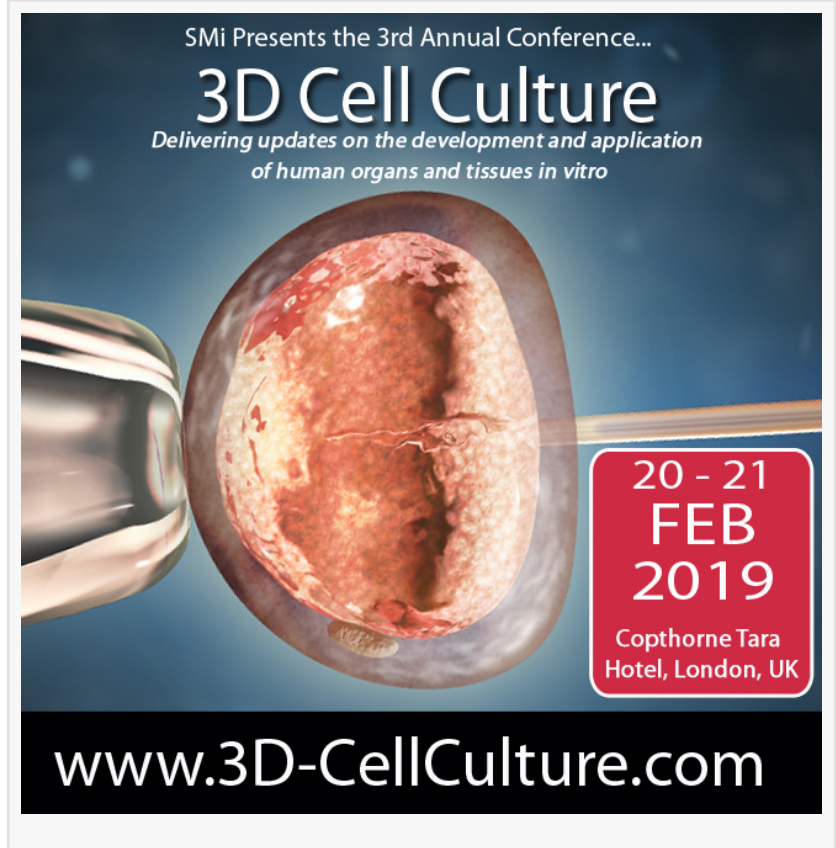
The drug discovery and development pipeline are retooling imaging technologies, such as high content analysis, to accommodate 3D cell cultures as the model of choice.

In a high-content assay, subcellular organelles are analysed by high-resolution images captured by automated microscopes. High content imaging and analysis of 3D cell cultures provides:

- Better predictive information on drug sensitivity
- Improved drug-target validation
- More accurate morphological and functional differentiation

At this year's 3rd Annual [3D Cell Culture Conference](#), SMI is delighted to have industry experts share their knowledge and discuss 5 key related sessions to the article above: Stefan Pryzborski, Professor of Cell Technology, University of Durham on

1) Development & application of bioengineering models of human tissues in vitro on Novel cell culture technologies are providing new opportunities to bioengineer human tissue constructs in vitro Such tissue equivalent models enable the development of new in vitro assays and assessment of drug activity Building models that more accurately simulate normal tissue structure for R&D use will enhance the predictive accuracy of in vitro assays Here we demonstrate the potential of such technology to create new opportunities for discovery research, drug assessment and safety screening



SMI Presents the 3rd Annual Conference...  
**3D Cell Culture**  
Delivering updates on the development and application  
of human organs and tissues in vitro

20 - 21  
**FEB**  
2019

Copthorne Tara  
Hotel, London, UK

[www.3D-CellCulture.com](http://www.3D-CellCulture.com)

The poster features a central image of a 3D cell culture spheroid being held by a pair of tweezers. The background is dark blue with a subtle grid pattern. The text is white and red, providing clear information about the conference dates and location.

Sally Price, Head of Cell and Translational Science, Medicines Discovery Catapult on

## 2) 3D Cell Culture in the Advancement of Medicines Discovery

The need for 3D models in developing new medicines and current challenges

Developments in 3D models that are advancing medicines discovery

How the Medicines Discovery Catapult is using 3D cell cultures in collaborative projects

Examples/case studies from our work

Melanie Matheu, Founder & CEO, Prellis Biologics on

## 3) The Future of 3D Cell Culture in Medicine: Blending Medical Devices & Cells to Build Organs

- Organ and tissue design and development

- State of the art for 3D Bioprinting

- Limitations of current systems and methods

- Pathways to full organ replacement

\* William Mattes, Director, Division of Systems Biology, U.S. Food and Drug Administration on

## 4) Tools, Not Toys: From Innovation to Regulatory Application

- An incredibly important consideration for any new technology is what decisions will be made by its use

- The "Context of Use" should guide what information is needed to "validate" a new technology

- The role of new technologies in regulatory processes can be informed by Biomarker / Drug

Development Tool Qualification process developed by FDA and EMA

\* remote presentation

Michael Raghunath, Head of Center for Cell Biology & Tissue Engineering Director Competence Center TEDD, Zurich University of Applied Sciences on

## 5) Amplification of Extracellular Matrix via Macromolecular Crowding in 2D, 3D, Cell Culture and in Bioprinting

- The importance of the cellular microenvironment in controlling cell behavior and fate

- Current highly aqueous culture conditions impair efficient ECM deposition

- Overcoming this issue by introducing macromolecular crowding (MMC) into the culture medium of monolayer cultures or hydrogels

- MMC adopted by the pharma industry for antifibrotic screening: production of stem cell matrix, and tuning the microarchitecture of bioprinted collagen hydrogels

If you are interested to learn more about the event or book your place visit <http://www.3d-cellculture.com/PR2>

We have tailored sponsorship packages still available, if you are interested contact Alia Malick, Director, on +44 (0) 20 827 6168 or email [amalick@smi-online.co.uk](mailto:amalick@smi-online.co.uk)

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3D Cell Culture Conference 2019

20 – 21 February 2019

Copthorne Tara Hotel, London, UK

<http://www.3d-cellculture.com/PR2>

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\* <https://www.drugtargetreview.com/article/37558/expert-view-three-dimensional-cell-cultures-as-predictive-tools-in-early-drug-discovery/>

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