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Media Release

InSphero Publication Honored for Potential to Reduce Use of Research Animals

Schlieren, Switzerland March 17, 2015 – Nature Communications paper co-authored with ETH Zurich wins 'highly commended" honor from NC3Rs.

Research conducted by InSphero AG, the world's leading supplier of 3D microtissues for in vitro safety and efficacy testing, and collaborators at ETH Zurich has received the "highly commended" honor from the British National Center for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs). Dr. Olivier Frey of ETH Zurich, first author on the paper published last June in the journal *Nature Communications*, accepted the award at the 3Rs Prize ceremony held last week in London.

The paper, entitled "Reconfigurable microfluidic hanging drop network for multi-tissue interaction and analysis," reported a novel approach to culturing multi-cellular 3D microtissues in vitro, and for the first time joined hanging drop cell culture with microfluidics. Growing spheroids in hanging drops removes restrictions associated with scaffolds, while microfluidics allow continuous medium and waste exchange, and allowing test substances such as candidate drugs to be dosed into the culture medium. The body-on-a-chip (BoC) system successfully displayed the ability to interconnect spheroids from two different tissue types (liver and tumor) which were able to communicate with each other via metabolite transfer. The principle was demonstrated using bioactivation of the anti-cancer drug Cyclophosphamide by the liver, and subsequent inhibition of tumor spheroid growth.

Dr. Jan Lichtenberg, CEO and co-founder of InSphero commented,"Multi-tissue in vitro test systems hold promise in the drug development industry as a better means of predicting the safety and efficacy of novel agents, while reducing the dependency on using animals for such studies." Lichtenberg noted most BoC concepts to date focus on joining individual chambers of cells cultured in 2-dimensional monolayers, which is the current industry standard for most in vitro cell based assays. "Our 3D InSight™ Liver, Islet, and Tumor Microtissues continue to provide striking evidence that 3D cell culture displays a more organotypic, biologically relevant phenotype than 2D. Naturally it follows that interconnecting spheroids would be an ideal approach to recapitulating a multi-organ system, something this research conceives in a scalable and flexible BoC format."

The collaboration has yielded two additional publications since the award winning Nature Communications paper last June, including recent articles in the Journal of Laboratory Automation and the Journal of Biotechnology.

NC3Rs is a UK-based scientific organization dedicated to replacing, refining and reducing the use of animals in research and testing. The 3Rs Prize is sponsored by GlaxoSmithKline.

For more information about InSphero, visit www.insphero.com.

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About InSphero

InSphero is the world's leading supplier of organotypic, biological in vitro 3D microtissues for highly predictive drug testing. The company, headquartered in Zurich, Switzerland, with subsidiaries in the USA and in Germany, currently counts all of the top ten global pharmaceutical and cosmetics companies as customers. InSphero 3D Insight™ Microtissues enable more biologically relevant in vitro applications in efficacy and toxicology. The spin-off company of the Swiss Federal Institute of Technology (ETH) Zurich and the University Zurich has been recognized for its scientific and commercial achievements with a number of national and international awards, including being named the #1 Swiss Startup and ACES Award Winner for 2014. InSphero is certified to the ISO 9001:2008 standard for its Quality Management System.

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