

## Tessara Therapeutics and NETRI to collaborate on the development of next generation 3D brain-on-a-chip model

- Tessara and NETRI will collaborate to combine the RealBrain® neural micro-tissues with the NeoBento™ high-throughput microfluidic platform
- The combination of the physiological relevance of fully functional 3D neural micro-tissues with the high-throughput microfluidics platform is expected to deliver a family of next generation drug discovery tools

5<sup>th</sup> December 2022: Tessara Therapeutics Pty Ltd and NETRI have established a collaboration to develop a family of next generation organ-on-chip models for neurological disease.

The new models will combine Tessara's RealBrain® 3D neural micro-tissues with NETRI's NeoBento™ microfluidic platform, thereby enabling investigation of normal and disease states in a high-throughput, multi-tissue interconnected architecture that incorporates 3D micro-tissues with heterogeneous cell populations and functional neural networks.

RealBrain® micro-tissues combine high biological complexity in a model that is also scalable and reproducible. Automated production of RealBrain® micro-tissues starts with encapsulation of human neural precursor cells in Tessara's proprietary biomaterials, followed by only 3 weeks of *in vitro* development in a single culture medium. The resulting micro-tissues have intrinsic optical clarity and contain heterogeneous populations of neurons and glia, with mature, functional neural networks supported by cell-secreted extracellular matrix. **RealBrain® models** include the **ArtiBrain™** model of normal brain tissue and the **ADBrain™** model of Alzheimer's disease.

Preclinical *in vitro* assays based on conventional techniques are not able to reproduce the complexity of human neurodegenerative diseases, leading to a significant failure rate in clinical trials of innovative treatments. Based on an ongoing momentum of high adoption of alternative to animal models, NETRI has developed a highly disruptive approach using organs-on-chip technologies particularly suited for long-term culture of neuronal 3D organoids (reference publication) and for co-culture of neural and non-neural cells. NETRI's compartmentalized microfluidic devices combine several technological building blocks based on the proprietary **NeoBento™ format** (matching 96-well microplate alignment for high-throughput screening and imaging on microscopes, including confocal microscopy), **3D Deposition Chamber** (for precise control of cell density and homogeneity as well as media change), **Microchannels** (to connect compartments and ensure fluidic isolation), **Integrated porous membranes** (to mimic interfaces as blood/brain, skin...) and **MEA compatibility** (to continuously record electrophysiological signals and dynamics of the entire array).

Dr Christos Papadimitriou, CEO of Tessara Therapeutics said: "Tessara is excited to collaborate with NETRI and combine our deep insights in neuroscience, 3D cell-based assays and biomaterials with the unique potential of their microfluidic platform. With commercialisation of the RealBrain® platform, Tessara aims to create a new "gold standard" for neurological drug screening. We very much look forward to joining forces with NETRI to maximise the impact of both our companies' platforms."

Dr Thibault Honegger, CEO of NETRI said: "We are currently observing a rising market traction from the pharmaceutical industrial for organs on chip that combine both high-throughput compatibility to maximize predictability of our models but also high relevance using human-derived models. This collaboration will certainly open the route to address the market needs thanks to NETRI's NeoBento

neurofluidics and multifluidics products for repeatable assays and Tessara's RealBrain® 3D cell culture for high relevancy. I believe such collaboration will expand possibilities of both companies and lead to faster, more reliable and more ethical preclinical trials."

**For more information please contact:**

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### ***About Tessara Therapeutics***

Tessara Therapeutics is developing RealBrain® technology to break therapeutic barriers in neurology and realise a world in which we can protect, restore and rebuild the brain. The RealBrain® technology is based on human mimetic 3D neural micro-tissues designed not only to have high physiological relevance, but also to be manufactured at industrial scale with unprecedented reproducibility. Priority applications are a high-throughput drug screening platform that includes a range of models of healthy and diseased brain tissue, and a regenerative medicine platform to develop next-generation, safe and efficacious tissue replacement therapies for significant unmet medical needs in neurology and neurodegenerative diseases.

[www.tessaratherapeutics.com](http://www.tessaratherapeutics.com)

### ***About NETRI***

NETRI is an industrial start-up developing innovative technologies for the pharmaceutical industry. In everything NETRI does, it believes in challenging the way we discover new treatments. NETRI uses neural activity at the network level to elucidate the mode of action of investigational drug candidates. NETRI designs, manufactures and sells standardized neural organoids-on-a-chip. Its patented organs-on-chip technologies allow the creation of standardized and predictive human *in vitro* models to predict efficacy, accelerate preclinical research and reposition compounds for new indications, while limiting animal testing. The use of human neural circuits coupled with multiple cell types opens the way to more personalized medicine as well as faster and more relevant diagnostics. Current application areas include neurological disorders, dermo-cosmetics and toxicology.

[www.netri.com](http://www.netri.com)