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Switzerland 3Brain AG launches a revolutionary new approach to drug discovery

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Unveils groundbreaking CorePlateÃ¢â??Â¢ technology to allow the harvesting of big data on drug candidates before testing on humans to increase the chance of pharmaceutical success.



3Brain AG has announced a new technology based on a unique combination of microchips and AI that promises to change the way drug candidates are selected at the preclinical level to enter into clinical trials – and to maximize their chances of success.

Using CorePlate™ technology, preclinical cell assays are performed in multiwell plates that integrate a microchip in each well to collect rich information from cells, pre-process cell data and streamline it to the paired software. As a result, much more and better data can be extracted, which can be referred to as cell big data. This is fed to an AI with the aim of simplifying interpretation and enabling researchers to discover more information about drugs being tested.

During Preclinical studies 90% of the drugs that enter into human trials fail and never reach the market. Due to the limitations of conducting preclinical tests on animal models and the vast majority of drugs that pass tests on animals do not later work on humans because disease mechanisms vary significantly between species. New biotechnologies like human stem cells offer more successful alternatives to animal models. But, cell-based assay via optical systems has long distances and bandwidth issues that affect the quality and quantity of information and, consequently, prevent an accurate inspection of cell networks. The CorePlate™ technology devised by 3Brain disrupts this paradigm by bringing the processing unit in contact with the cells.

"We want to radically change the way preclinical drug screening is performed, offering pharmaceutical companies the opportunity to manage their pipelines more efficiently," says Mauro Gandolfo, CEO and co-founder of 3Brain AG. "Basically, we take traditional plastic multiwell plates and we turn them into intelligent devices with multi-core processing power, which can be programmed according to research needs. Integrated intelligence is a remarkable distinction from other instruments in the preclinical space. Importantly, despite the large amounts of data CorePlate™ devices can process, the user can still easily generate results thanks to the AI-driven interpretation of data. With the CorePlate™ technology, pharmaceutical companies can save time and money by better filtering and prioritizing drug candidates. Our ultimate goal is to provide our users with tools that help them more readily identify new cures for diseases."

Alessandro Maccione, CSO and co-founder of 3Brain AG, says, "We started focusing on brain diseases, such as Alzheimer's and epilepsy, given the high burden that they represent for our society. In addition, we are expanding to other sectors such as cardiac safety, which is one of the main reasons drugs fail in clinical trials. We are very attentive to the opportunities offered by advanced cell models such as spheroids and organoids".

Kilian Imfeld, CTO and co-founder of 3Brain AG, adds, "The processing power we have integrated into a CorePlate™ device is really striking. You can think of it as a modern multi-core CPU, but where the microchip is specifically designed for biological signals. Consequently, we call it BioSPU™, BioSignal Processing Unit".