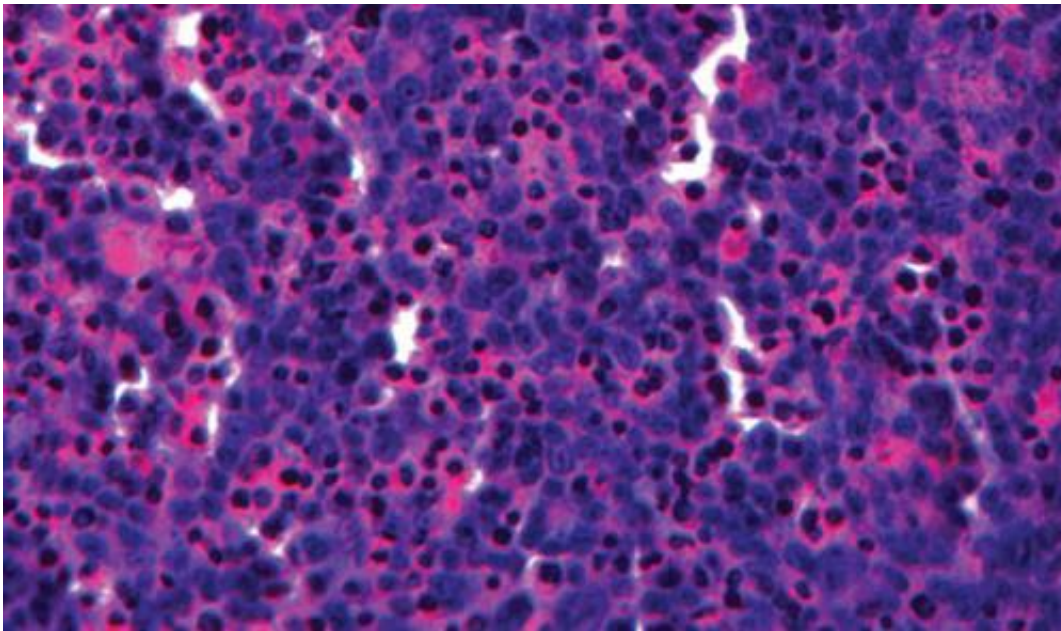


Organovo has 3D-printed liver tissue for drug testing

November 20 2014, by Nancy Owano



Cross-section of multi-cellular bioprinted human liver tissue, stained with hematoxylin & eosin (H&E).

(Medical Xpress)—The commercial release of 3D printed liver tissue was announced earlier this week. Organovo is the company behind the release. The product is intended for use for preclinical drug discovery testing to see if the drugs are toxic or not. This is intended to provide data to help predict liver tissue toxicity or ADME (absorption, distribution, metabolism and excretion) outcomes in later-stage preclinical drug discovery programs. The product is called exVive3D

Human Liver Tissue. According to the company, "The durability and [functionality](#) of the 3D liver product enable the assessment of the effects of low dose or repeated dosing regimens across a spectrum of biochemical, molecular, and histologic end points."

San Diego, California-based Organovo is described as a 3D biology company focused on 3D "bioprinting" technology. As the company explains, bioprinting combines the potential of engineering and biology to create living human tissues that mimic the form and function of native tissues. Bio-ink building blocks are dispensed from a bioprinter. This is a layer-by-layer approach scaled for the target output. "Organovo's 3D human tissues offer many advantages over standard cell-culture platforms due to the fact that three-dimensionality is achieved without dependence on biomaterial or scaffold components that would not be found in native tissues," said the company.

Creation is automated and reproducible, consistently yielding tissues with in vivo-like micro-architecture. "When cells are isolated from tissues and maintained outside of the body, they are typically purified to eliminate other cell types and subsequently cultured as monolayers of cells on sterile plasticware that is specially treated to foster cell adhesion. Thus, the benefits of having multiple cell types present and in a 3D architecture are lost; this is often accompanied by loss of tissue-specific function. By restoring the 3D [architecture](#) of the tissue and building the tissue with multiple [cell types](#), bioprinting enables re-establishment of in vivo-like form and function."

The models are living 3D human liver tissues consisting of primary human hepatocytes, stellate, and endothelial [cell](#) types found in the human liver. The tissues are functional and stable for at least 42 days.

Organovo is to act as service provider for their clients, said 3DPrint.com, enabling them to access this [technology](#) through a contract

research services program. The press release stated that "All testing will be performed at Organovo's facility by the company's laboratory services [tissue](#) experts." This allows the [company](#) to maintain control over the process, printing, testing, and data curating, noted 3DPrint.com.

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