



Vivo Biosciences Inc.

Accelerating Preclinical Research, Drug Discovery & Therapeutics

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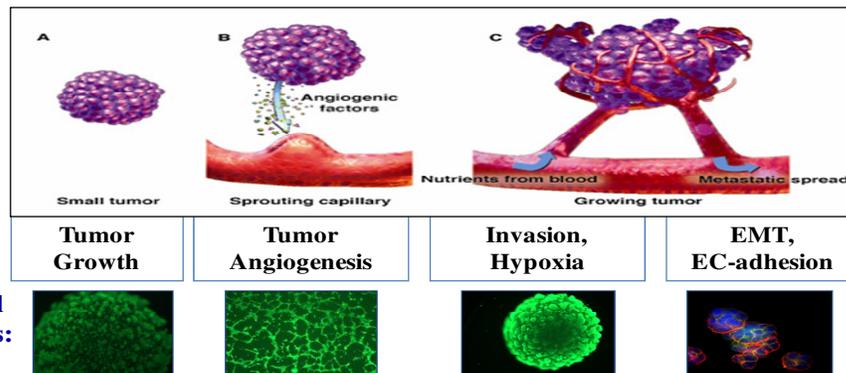
www.vivobiotech.com

New HuBiogel™ Technology & 3D-Tumor Bioassay Platform

Summary & Mission:

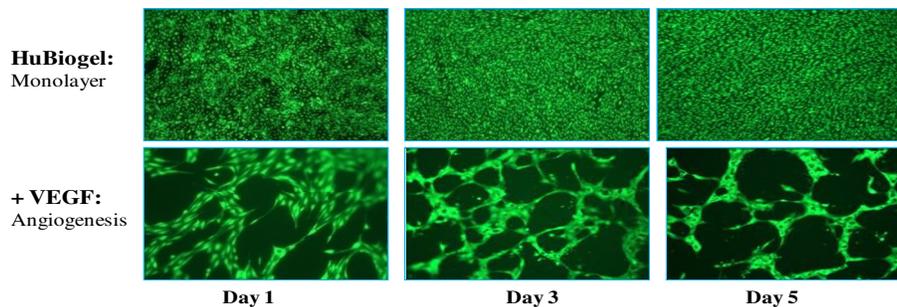
Vivo Biosciences Inc. (VBI) is an emerging, venture-backed biotech company founded in 2004. VBI is developing new human bioassay systems for accelerating preclinical research, drug discovery and therapeutics. The company relies on its patented **HuBiogel™** culture/assay technology (US PTO# 7727550), which emulates the biology of normal and disease tissues in vitro.

New Tumorigenesis Assay Systems: The promise of HuBiogel assay technology is driven by scientific unmet need/rationale that in vitro research on human systems should emulate the in vivo tissue conditions. In fact, multi-cellular growth and organization of host cells in HuBiogel scaffolds is supported by its unique tissue-like microenvironment. Unlike traditional 2D cell-based analysis (Flat biology), new 3D-tumor culture/assay platform offers physiologically relevant functional models. A series of fully-human bioassay systems are developed for functional analysis of key stages of tumorigenesis: growth, invasion, angiogenesis, EMT, hypoxia and vascular adhesion:



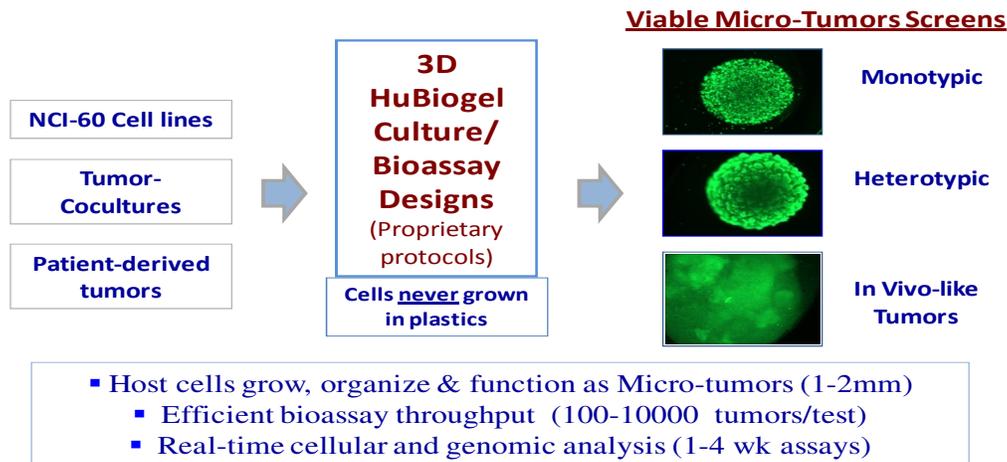
Replicating Human Tumor Microenvironment In Vitro

Real-time Angiogenesis Assay: To overcome the technical and biologic limitations of current Angiogenesis assays (Matrigel), VBI has developed a real-time functional assay (AngioStart™) for studying EC morphogenesis or capillary-formation, as induced by specific pro- and anti-angiogenesis agents. Case study: GF-free status of HuBiogel allows ECs to maintain undifferentiated monolayer (for days) and angiogenesis is triggered by FGF/VEGF or co-culture with tumor cells/media.



Time-lapsed images, Calcein-AM Staining

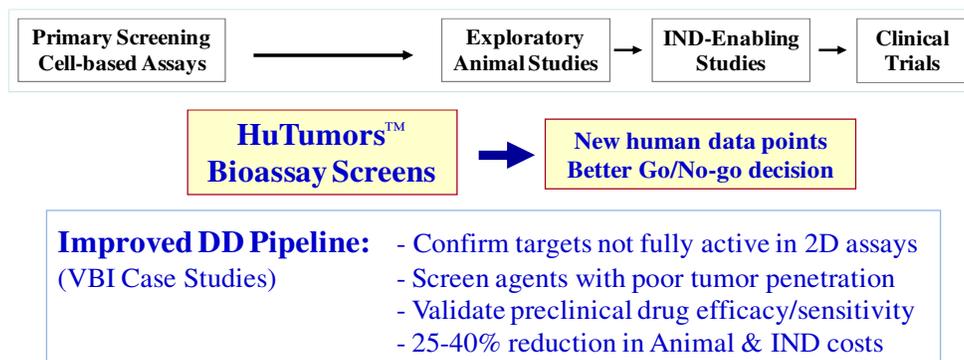
Human Micro-Tumor Assay Systems: For basic and preclinical oncology research, VBI is developing 3D-tumor bioassays replicating monotypic and heterotypic microenvironment which will provide high-value cellular, biochemical and genomic data points. Three fully-human Oncology assay screens are shown below for accelerating basic research and drug discovery programs.



VBI products and services are available worldwide to academic, private and government institutions.

Integrate Micro-tumor Assays to Improve Drug Discovery Efforts: Implementing VBI oncology platform in preclinical DD programs will provide *highly predictive and physiologically relevant data sets* for making critical 'go or no-go' decisions prior to expensive animal/human trials. Case studies from many academic and Pharma projects demonstrate this critical juncture: identified agents active only in micro-tumors, supplemented xenograft data, and success/failure of drug candidates. Thus HuTumor assays are truly enabling as they offer a secondary yet advanced drug screening tool:

Current DD Pipeline: Pre-IND costs \$1.2 - \$1.5M



In brief, current drug discovery efforts will benefit from our robust cost-efficient oncology drug screening platform. To date, 70–80 anti-tumor agents (compounds, antibodies, siRNA, nanopeptides) and several FDA-approved drugs have been evaluated. High-value utility is expected to improve biomedical research, accelerate drug development and therapeutics, thereby reducing the overall R&D costs. These in vitro assays will also reduce/refine animal usage/studies in future.

Other HuBiogel Assay Models: Based on success of oncology screens, VBI is now developing other 3D bioassay systems involving human liver, endothelial, Islets and stem cells for biological, drug toxicity and tissue regeneration applications. New multi-tissue biology platform is fully adaptable to current genomics or proteomics applications, profiling prior to expensive animal studies.

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