

Defined. Tissue-like. Injectable. Translational.

Discover a better way to create and maintain 3D cell cultures. BRTI Life Sciences' 3D cell culture system creates a more realistic environment for your cells, facilitating discovery of new therapies and complex cellular mechanisms. Model disease and study tissue development with ease and efficiency.

About Cell-Mate3D™

Cell-Mate3D™ is an injectable, tissue-like matrix that offers researchers a biologically relevant micro-environment for in vitro and in vivo biomedical research. It is chemically defined, composed of naturally occurring biopolymers Hyaluronic Acid (HA) and Chitosan (CT).

Researchers benefit, because Cell-Mate3D™

- Is chemically defined and is translatable to therapeutic applications
- Exhibits tissue-like stiffness, mimicking the natural cell environment
- Does NOT require chemical or UV cross linkers, thus non-toxic to cells
- Enables long term cultures for study of development and disease
- Is Injectable for use in animal models
- Saves time and is easy to use – 5 min setup

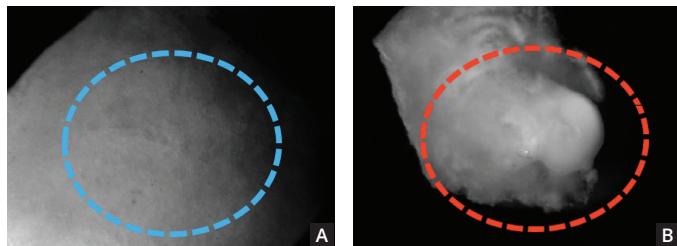
Cancer Research

- Use cancer cells and normal cells to model tumors
- Create a hypoxic gradient without producing a necrotic core
- Culture long term (6 months or more)

Stem Cell Research

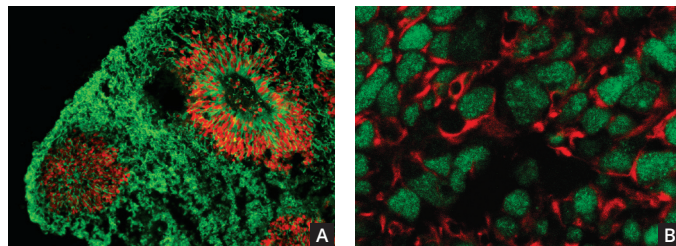
- MSCs differentiate in Cell-Mate3D™¹
- iPSCs form cerebral organoids when embedded in Cell-Mate3D™²

Cancer Modeling

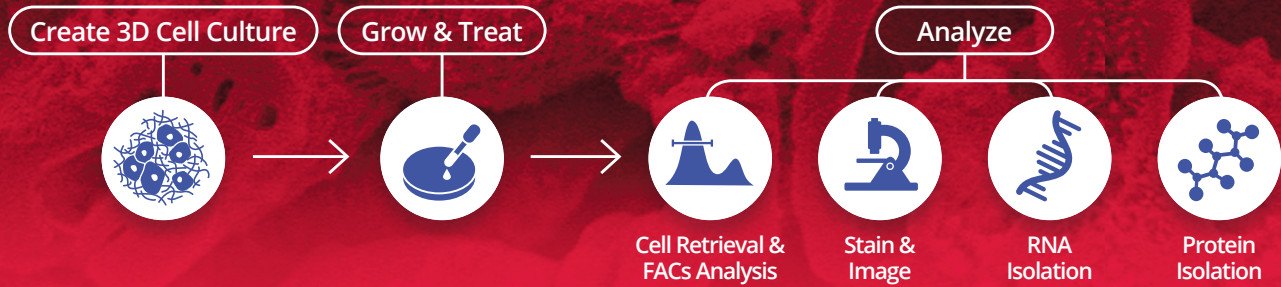


MCF10A (A) or MCF-7 (B) cells were embedded into the Cell-Mate3D Matrix. After 4 weeks, the MCF10A constructs demonstrated a smooth cell surface (A) while the MCF-7 constructs produced tumor-like nodules that emerged from the surfaces of the matrix (B).

Organoid Formation

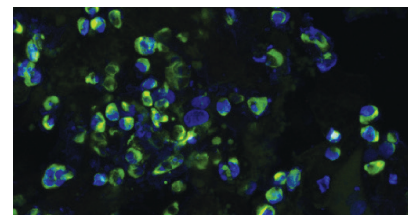
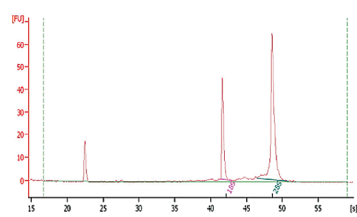
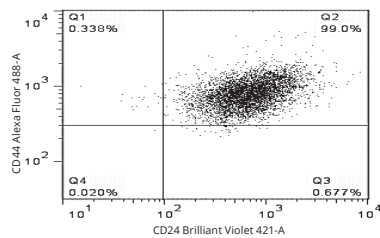


IHC Staining and cell organization indicates presence of neural tube-like structures (Nestin-Green/Sox1-Red) (A) and neural rosette structures (Sox2-Green/Nestin-Red) (B).



Grow 3D Cultures

Cell-Mate3D™ is a chemically defined, tissue-like, and injectable 3D matrix ideal for cancer, tissue engineering, and regenerative medicine research.



Cell Retrieval Kit

Recover cells from your Cell-Mate3D™ cultures in 15 minutes using BRTI's Cell Retrieval Kit. Analyze your cells using Flow Cytometry.

Cell Retrieval Kit preserves cancer stem cell markers

HeLa cells were retrieved from Cell-Mate3D™ culture, stained with CD44-AlexaFluor 488 and CD24-Brilliant Violet 421 antibodies and analyzed by Flow Cytometry.

RNA Isolation Kit

Isolate RNA from Cell-Mate3D™ cultures. Reagents and workflow are optimized for efficient RNA extraction and recovery.

Isolation of RNA from Cell-Mate3D™ cultures

Agilent Bioanalyzer electropherogram depicting high quality total RNA isolated from Cell-Mate3D™ culture followed by Qiagen® RNA clean-up. Note clearly delineated 28S and 18S peaks and minimal low molecular weight noise. rRNA Ratio 28S/18S=2.2.

Staining & Imaging Protocols

Use our easy to follow protocols to prepare cells for whole mount, cryosectioning and staining, and FFPE. Stain your 3D cultures with antibodies or chemical stains and image using inverted confocal microscopy.

Cell Replication in Cell-Mate3D™

EdU Staining of Cell-Mate3D HeLa Cultures. 3D cultures were prepared by embedding 7 million HeLa cells into a 250µL Cell-Mate3D matrix. After 4 days in culture, cells were pulsed with 10µM EdU for 2 hours, stained with the Click-iT Edu Staining kit, and imaged using a Nikon A1 inverted confocal microscope at a 60X magnification.

Ordering Information

VWR Cat. No.	BRTI Cat. No.	Description	Size	Qty/PK
76036-028	CM-1001	Cell-Mate3D Standard Kit	250uL gel (750uL total)	3
76036-000	CM-1002	Cell-Mate3D Large Kit	500uL gel (1500uL total)	3
76036-002	RXT-1001	RNA Isolation Kit without ceramic beads	30 rxn	1
76036-026	RET-1001	Cell Retrieval Kit	25ml/tube	3

References

1.) Lindborg BA, Brekke JH, Vegoe AL, et al. Rapid Induction of Cerebral Organoids From Human Induced Pluripotent Stem Cells Using a Chemically Defined Hydrogel and Defined Cell Culture Medium. *Stem Cells Transl Med.* 2016 Jul;5(7):970-9. 2.) Cost of organoid generation using Lancaster method is approximately \$150 per organoid and cost of O'Brien method is approximately \$100 per organoid. Cost of organoid generation is reduced because neural induction factors are not needed. 3.) Schwartz MP, Hou Z, Propson NE, et al. Human pluripotent stem cell-derived neural constructs for predicting neural toxicity. *Proceedings of the National Academy of Sciences of the United States of America.* 2015;112(40):12516-12521. doi:10.1073/pnas.1516645112. 4.) Images courtesy of Dr. Timothy O'Brien at the University of Minnesota. 5.) Kelly Rae Chi. Orchestrating Organoids A guide to crafting tissues in a dish that reprise in vivo organs. *The Scientist.* September 1, 2015. <http://www.the-scientist.com/?articles.view/articleNo/43842/title/Orchestrating-Organoids/> accessed Feb 22 2017.



© 2017 BRTI Life Sciences



1.800.932.5000 | vwr.com

Prices and product details are current when published; subject to change without notice. | Certain products may be limited by federal, state, provincial, or local regulations. | VWR makes no claims or warranties concerning sustainable/green products. Any claims concerning sustainable/green products are the sole claims of the manufacturer and not those of VWR International, LLC. All prices are in US dollars unless otherwise noted. Offers valid in US and Canada, void where prohibited by law or company policy, while supplies last. | VWR, the VWR logo and variations on the foregoing are registered (®) or unregistered trademarks and service marks, of VWR International, LLC and its related companies. All other marks referenced are registered by their respective owner(s). | Visit vwr.com to view our privacy policy, trademark owners and additional disclaimers. ©2017 VWR International, LLC. All rights reserved.