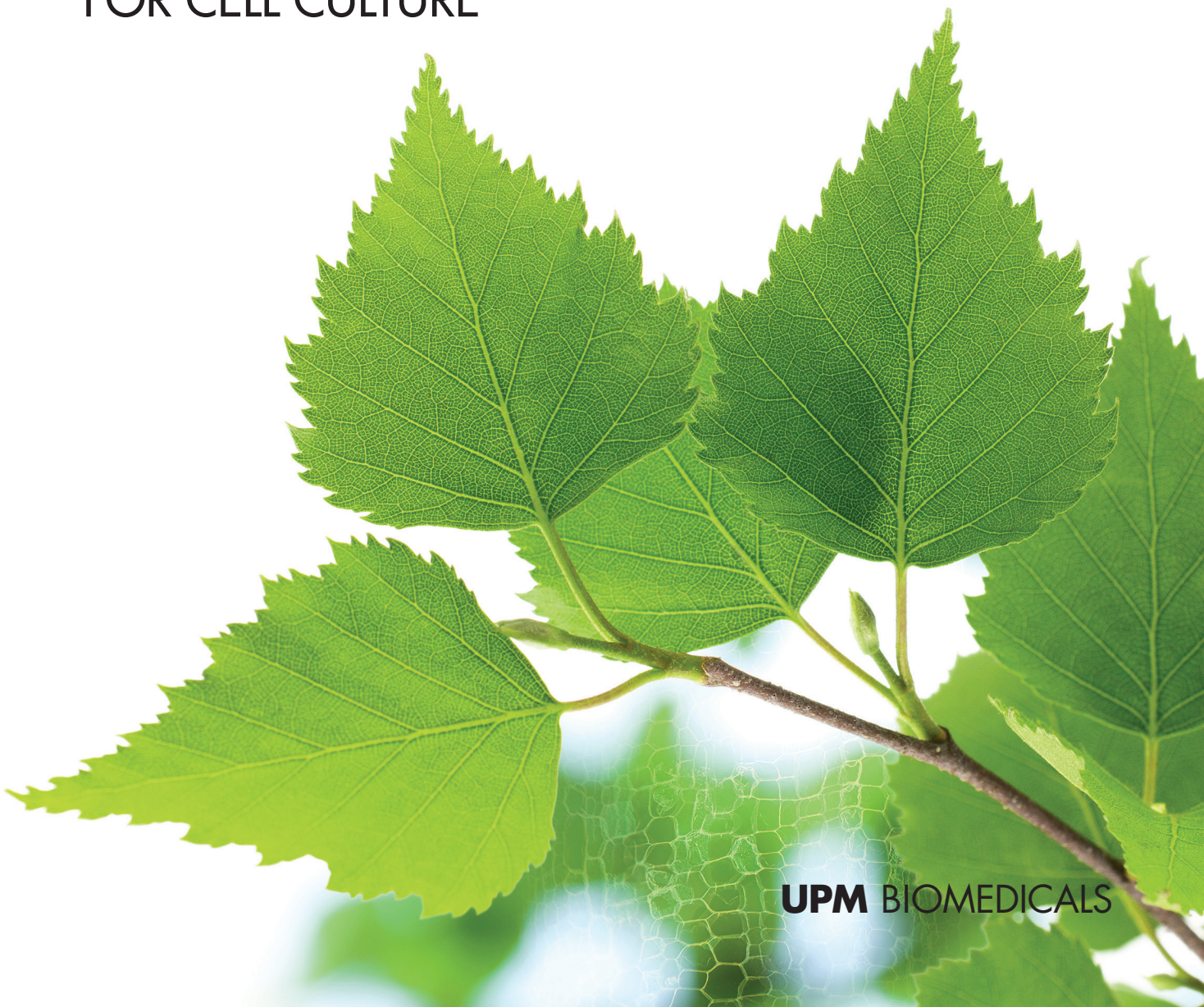


GrowDex[®]

THE NATURAL CHOICE
FOR CELL CULTURE



UPM BIOMEDICALS

GrowDex[®]

Nature's solution – a bio-friendly hydrogel extracted from birch and sourced from sustainable and responsibly managed forests. GrowDex[®] is a ready to use hydrogel that mimics the extracellular matrix (ECM), supporting cell growth and differentiation with consistent results. The versatility of GrowDex has seen it used in numerous applications ranging from: 3D cell culture and organ-on-a-chip models, through to drug release studies and 3D printing. GrowDex is ideal for these and other applications due to its unique properties:



ANIMAL FREE

Xeno-free with no detectable endotoxins, GrowDex is pH neutral and supplied in a user friendly syringe for convenience and ease of use.



ROOM TEMPERATURE STABLE

Stored, shipped and used at room temperature, this stable hydrogel eliminates the need for temperature control, costly transportation and is ideal for use in liquid handling system for the automation of any cell-based assay.



READY TO USE

GrowDex truly is a ready-to-use hydrogel. No cross-linking, no gelation, no sonication or any other steps required prior to use. Just mix with your media and cells, dispense and incubate.



REPRODUCIBLE LOTS

Raw material supply, production procedures and quality control checks, to ensure that GrowDex is manufactured reproducibly to the highest standards.



BIOCOMPATIBLE

The biocompatible nanofibrillar network allows easy diffusion of small molecules such as nutrients and oxygen supporting the culture of various cell types.



TUNABLE VISCOSITY

The viscosity "stiffness" of GrowDex can be tuned by dilution with media. As different cell types thrive in different micro-environments, determining the optimum conditions for your cells is imperative. Being ready to use, dilution curves with GrowDex are quick and easy to prepare.



MICROSCOPE & IMAGING COMPATIBLE

GrowDex is not auto-fluorescent, is compatible with microscope and cell imaging systems and can be used for brightfield, phase contrast or fluorescence image capture.



ONE-STEP CELL RECOVERY

GrowDase enzyme allows easy recovery of cells, spheroids or other sample from GrowDex without disrupting or destroying the structure.

VISIT WWW.GROWDEX.COM
FOR MORE INFORMATION,
VIEW THE LATEST PUBLICATIONS
AND TO DOWNLOAD OUR
APPLICATION NOTES.



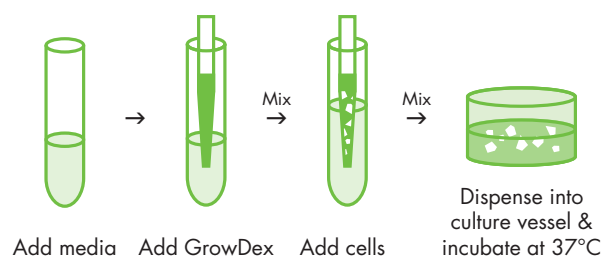
Culture your cells with confidence

Being a completely xeno-free hydrogel, GrowDex enables you to have complete control over the culture environment for you cells. This flexibility has enabled GrowDex to be used in a wide variety of assays culturing cells from many different sources, such as primary hepatocytes for *in vitro* drug screening or patient derived cells in a personalized medicine study. Other examples include:

- 3D organoid formation
- Hepatocyte toxicity, induction and metabolism
- Stem cell proliferation and differentiation, ES, iPS & MSCs
- Tumor cell migration and invasion
- Neurite outgrowth and network formation
- Patient specific cells and biopsies
- Human corneal cells
- Lung adenocarcinoma
- Osteoblast and chondrocyte
- Melanoma
- Co-culture of various cell types
- Regenerative medicine and tissue engineering

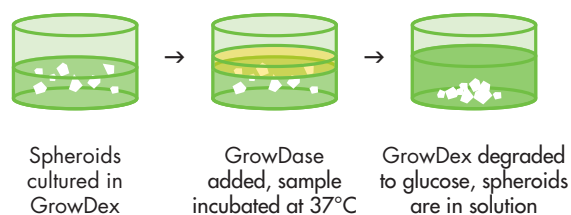
Mix & use

Ready to use GrowDex makes cell culture simple.
Just mix media, cells and GrowDex together and dispense.
What could be easier!



Harvest your cells

Recovering your cells or organoids post culture is a one step process. Add our GrowDase™ enzyme to your culture and incubate at 37°C. The enzyme digests the GrowDex leaving your cells in solution for re-plating or downstream processing



Ordering information

Visit our webshop at www.growdex.com or contact us at growdex.sales@upm.com.

CATALOGUE CODE	DESCRIPTION
100 103 005	GrowDex® 5 ml syringe
100 103 010	GrowDex® 10 ml syringe
100 103 305	Multi-pack GrowDex® 3 x 5 ml syringe
100 103 905	GrowDex® 5 ml syringe + GrowDase™ 2.5 ml Combo pack
900 102 002	GrowDase™ 2.5 ml, 10 mg/ml

Not just for cell culture

GrowDex is not limited to 2D and 3D plate-based assays, but it has been used successfully in a number of other areas. Here are a few examples to give you an insight:

Organ-on-a-Chip Models

The thixotropic nature of GrowDex allows the hydrogel to be dispensed into the channels of a microfluidic device. GrowDex is able to retain its structure once in place making it ideal for use with organ-on-a-chip models.

Drug Delivery Vehicle

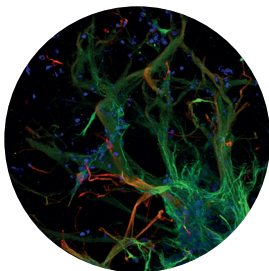
The biocompatible hydrogel can be mixed with test drug for use in drug release studies.

Cell Barrier

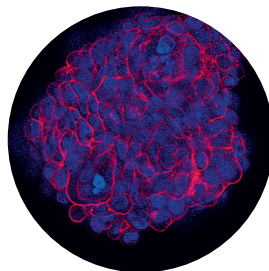
GrowDex at high concentration can be used to form a barrier preventing cell migration but allowing nutrient, drug or metabolite diffusion.

3D Printing

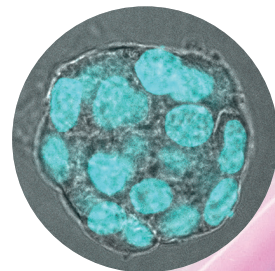
The interest in 3D printing, especially in regenerative medicine, has called for a reliable raw material with reproducible batch quality. GrowDex has both the physical qualities and supply credentials to support this rapidly growing area.



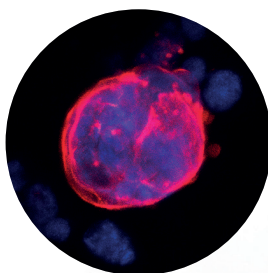
Human embryonic stem cell (hESC) derived neuronal cells
Biomeditech, Finland



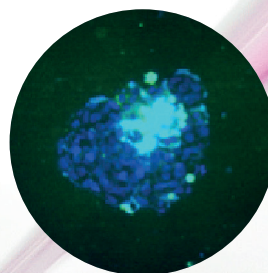
HCE-T Human corneal epithelial cells
Experimentica, Finland



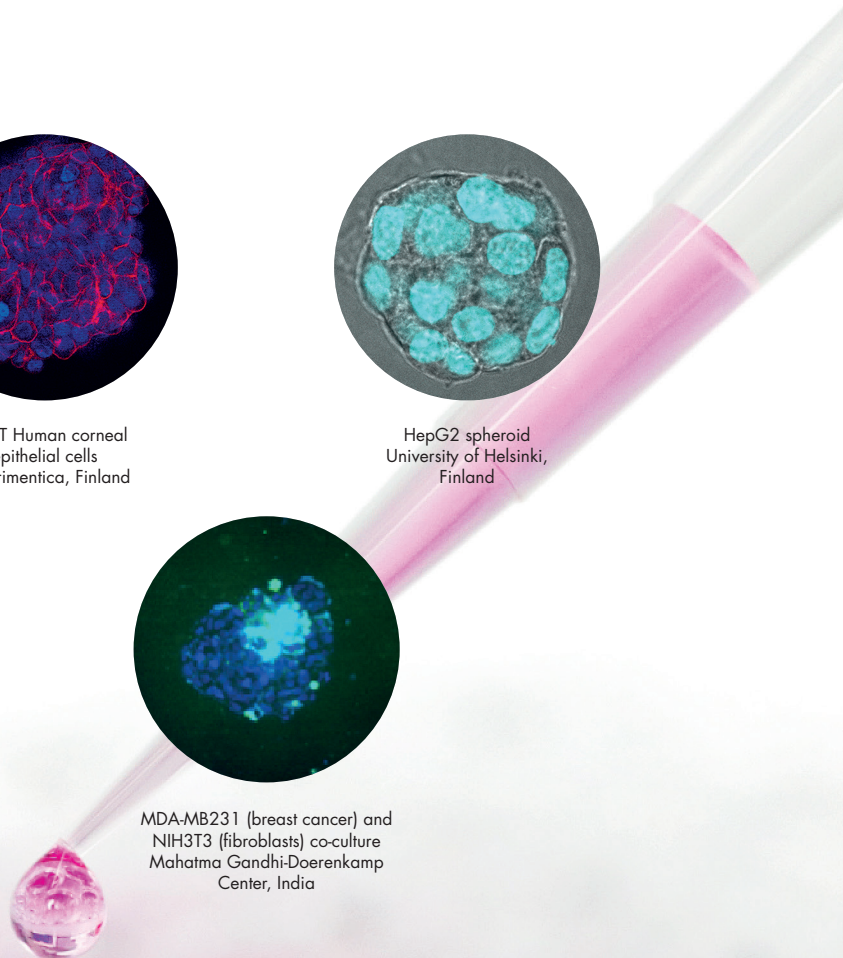
HepG2 spheroid
University of Helsinki, Finland



Co-culture human primary hepatocytes and Kupffer cells
Admescope, Finland



MDA-MB231 (breast cancer) and NIH3T3 (fibroblasts) co-culture
Mahatma Gandhi-Doerenkamp Center, India



Innovation with care
Automation-friendly
Tumor cells **fast set up** Transparent **Biofore** **Natural**
Recover cells **Innovative** **Animal free**
Sustainable **3D cell studies**
Responsible
Eco-friendly **Renewable** **Hydrogel**
Reproducible **Biocompatible** **Dilute and use**
Advanced **Room-temperature**
Sterile
Natural Simple protocols **Regenerative medicine**
Tunable **Ready-to-use** **Primary cell**

GrowDex[®]

www.growdex.com



UPM

www.upm.com

UPM Biomedicals

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For Research Use Only. Not for use in diagnostic or therapeutic procedures.