

HIGH THROUGHPUT 3D CELL CULTURE

Scientists have cultured cells in 2D monolayers for decades due to the practicality of this approach. Now, however, scientists are switching to 3D cell cultures, which have many advantages. These models approximate the *in vivo*-like extracellular environment much more closely, improve cell

differentiation, and are considered to be morphologically and physiologically superior for studying, for example, the effects of drug candidates or cell microenvironments. Nevertheless, 3D cultures also have drawbacks such as the need for larger numbers of cells, tedious manual workflows, and high overall

costs, which combine to limit their use.

These drawbacks could be overcome by automating the 3D cell culturing process. We supply several products that let scientists work more comfortably with automated 3D cell cultures.

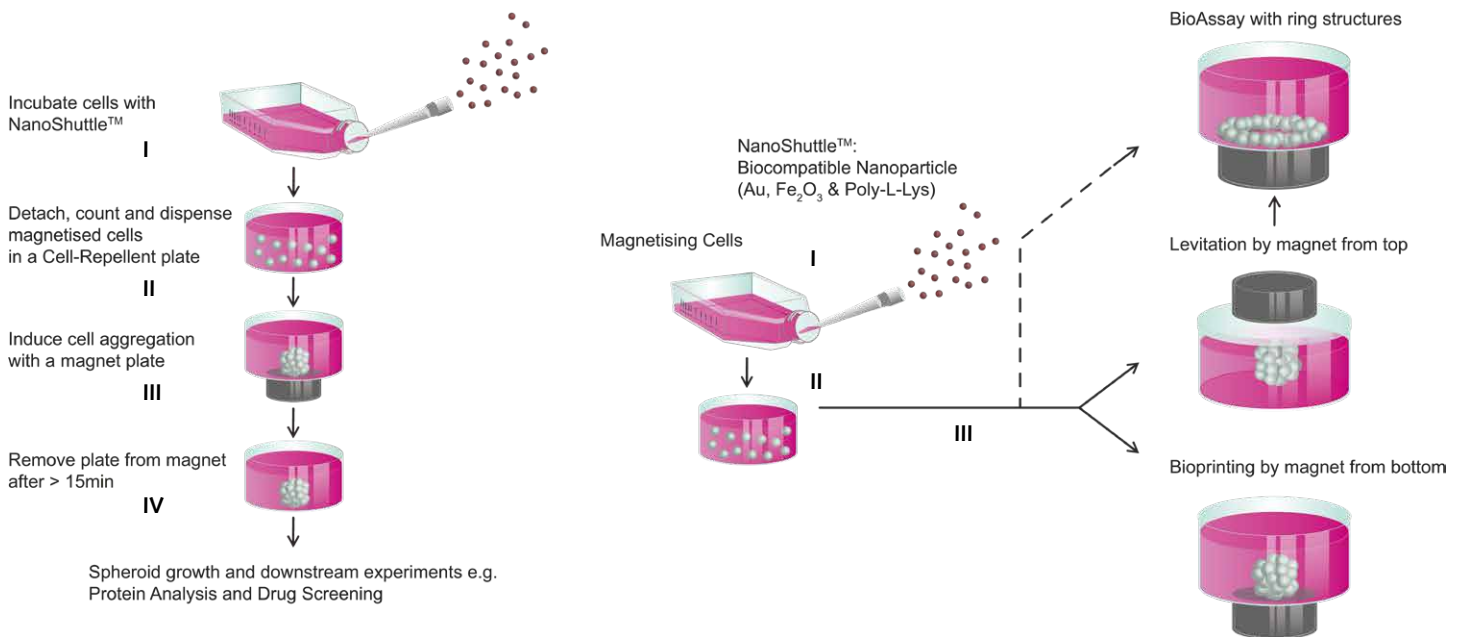


Fig. 1: High throughput 3D cell culture with magnetic bioprinting workflow. I, propagate your MSCs in PromoCell MSC Growth Medium and magnetize your MSCs with NanoShuttle™ with static overnight incubation. II, detach, count and dispense your MSCs into a cell-repellant plate. III, induce cell aggregation with a magnetic plate. Different structures can be generated: rings and spheres. IV, the magnetic plate can be removed after 15 minutes and subsequent procedures started.

Why use our products for automated 3D cell culture?

- **CONVENIENT.** Save valuable time with prequalified cell lots and our ready-to-use 3D Cell Culture Scaffold Kit in a multiwell format.
- **OPTIMIZED.** Our xeno- & serum-free, high quality media are already optimized for 3D cell cultures.
- **REPRODUCIBLE.** Predefined media and ready-to-use cellular assays ensure reliable and consistent performance of your cell culture experiments.
- **EASY TO USE.** Ideal for routine use, with excellent technical support.

Key applications of high throughput 3D cell cultures

- Faster and better *ex vivo* screening of drugs
- Continual assessment of cell viability and other functions with our 3D assay kits
- High throughput rapid bioprinting of cells for advanced tissue engineering
- Faster development of spheres/co-cultures with various cell types
- High throughput *ex vivo* toxicological testing

Note: Our products are classified for research use only and are not for use / implantation in humans or animals.

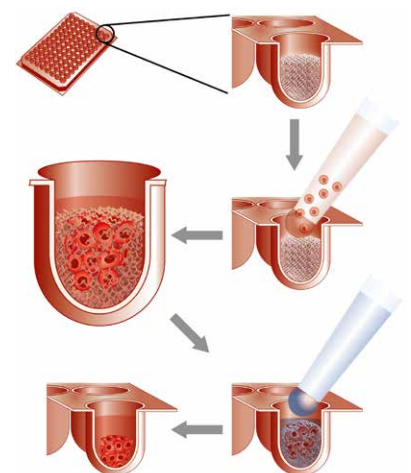
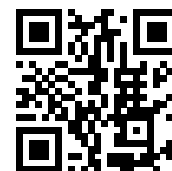


Fig. 2: 3D Cell Culture Scaffold Kit. Cells are seeded on ready-to-use scaffolds, which they attach to. They then form 3D structures (e.g. spheroids) that can be easily harvested by dissolving the scaffold.



Products

Product	Description	Catalog Number
3D Tumorsphere Medium XF	Xeno-free medium for cultivating cancer cell lines as 3D tumorspheres.	C-28070
Cancer Cell Line Medium XF	Xeno-free medium for standardized <i>in vitro</i> cultivation of established cancer cell lines.	C-28077
Primary Cancer Culture System	A complete cell culture solution designed for selective culture of malignant cells derived from primary tumors or patient-derived xenografts.	C-28081
Hematopoietic Progenitor Expansion Medium DXF	Defined, xeno-free medium for expansion of primitive human hematopoietic cells.	C-28021
MSC growth medium DXF	Defined and xeno-free cell culture medium for proliferation of mesenchymal stem cells. Fibronectin coating required.	C-28019
3D Cell Culture Scaffold Kit	Enables standardized strategies (also for high throughput) with a 96-well microtiter plate containing proprietary 3D scaffolds.	PK-CA577-K990
3D Cell Culture Matrix Kit (BME)	Enables standardized, user-friendly setup of spheroid or organoid formations and pharmacological studies.	PK-CA577-K518
3D Cell Culture Matrix Kit (Alginate-Hydrogel)	Enables standardized, user-friendly setup of spheroid or organoid formations and pharmacological studies.	PK-CA577-K517
3D Cell Culture Matrix Kit (Duo-Matrix)	Enables standardized, user-friendly setup of spheroid or organoid formations and pharmacological studies.	PK-CA577-K519
3D Cell Culture Harvesting Kit	Provides an optimized and standardized saline-based solution for isolating cells and spheroids from 3D matrices.	PK-CA577-K982
3D Cell Culture Viability Assay Kit	Provides a standardized fluorometric method (calcein-based) for sensitive quantification of viable cells in 3D cell culture.	PK-CA577-K948
Live/Dead Cell Staining Kit I	Fluorometric detection of viable and dead cells using CFSE/7-AAD.	PK-CA577-K315
Live/Dead Cell Staining Kit II	Fluorometric detection of viable and dead eukaryotic cells using Calcein-AM/EthD-III.	PK-CA707-30002
Fluorometric Cell Viability Kit I (Resazurin)	Fluorometric and colorimetric cell viability and cytotoxicity detection.	PK-CA707-30025
Colorimetric Cell Viability Kit I (WST-8)	Colorimetric cell viability, cell proliferation and cytotoxicity detection	PK-CA705-CK04
Bioluminescent Cell Viability Kit I (ATP)	This kit utilizes bioluminescent detection of the ATP level via luciferase catalyzed reaction for rapid screening of cell viability in mammalian cells.	PK-CA577-K254
Laminin Matrix Solution (mouse)	Laminin matrix for 3D cell culture.	PK-CA577-K914-4
Collagen I Matrix Solution (rat)	Collagen I matrix for 3D cell culture.	PK-CA577-K916-5
Collagen IV Matrix Solution (mouse)	Collagen IV matrix for 3D cell culture	PK-CA577-K918-5
Fibronectin Matrix Solution (human, 1 mg/ml)	Fibronectin matrix for 3D cell culture.	PK-CA577-K925-05
CELLSTAR® Cell-Repellent cell culture plates	Plates with a cell-repellent surface treatment to effectively prevent cell attachment; available in different formats	Various part numbers, for details www.gbo.com
M3D Bio-Assembler™ Kit	Kit for quick & easy 3D cell culture by magnetic levitation; includes magnet plates, NanoShuttle™-PL and cell-repellent plates; 6- and 24-well versions	657840 662840
M3D Bioprinting Kit	Kit for quick & easy magnetic 3D bioprinting; includes magnet plates, NanoShuttle™-PL and cell-repellent plates (clear or black, µClear®); 96- and 384-well versions	655840, 655841 781840, 781841
M3D BIO Assay™ Kit	Kit for the fast and easy magnetic 3D bioprinting of 3D ring structures to perform migration assays, available in 96- and 384-well versions	655846 781846
NanoShuttle™-PL Refill	Biocompatible magnetic nanoparticles for magnetizing cells for m3D technology, available in different sizes (single or pack of 3, 6 or 12)	657841, 657843 657846, 657852

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