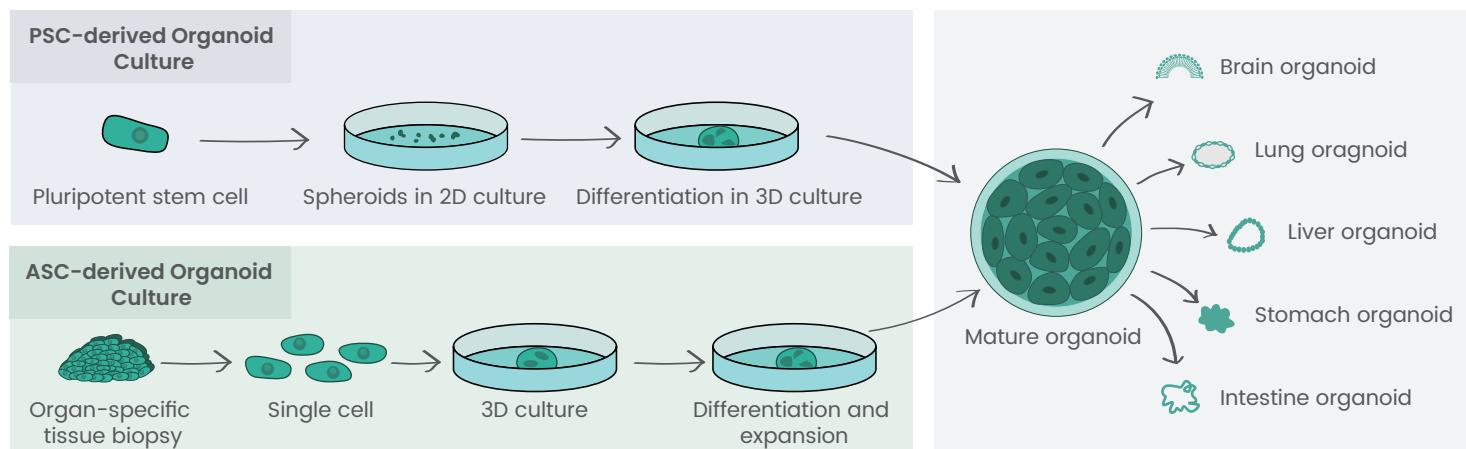


# Using *Ex Vivo* Models to Accelerate Drug Discovery and Development

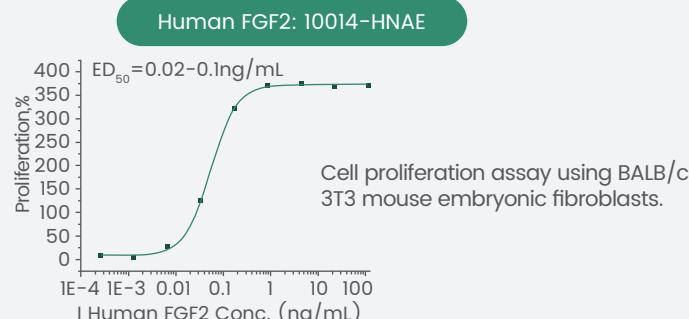
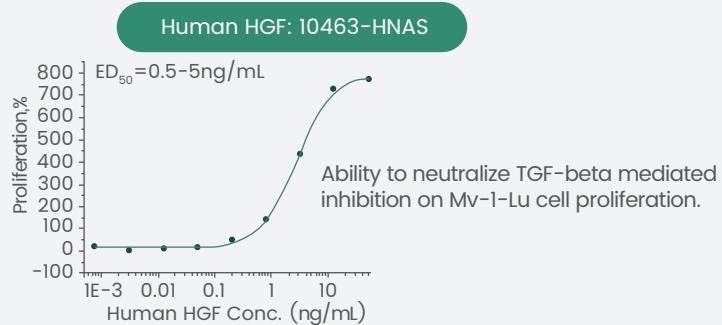
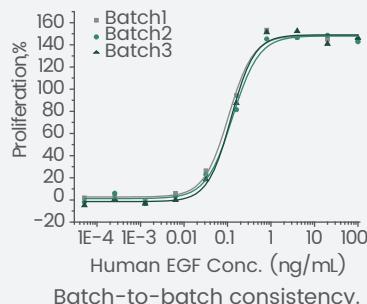
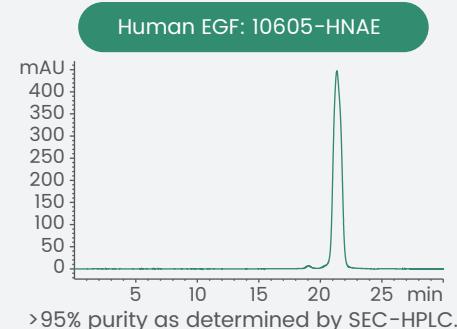
## Abstract

The majority of cell-based *in vitro* high-throughput screening is carried out on 2D tissue culture, but 3D cell culture is expected to accommodate better precision in drug discovery. 3D culture provides valuable pharmacology insights as organoids maintain homeostatic regulation and whole organ influence *ex vivo*. Organoid cultures can be used to test medical treatments for specific diseases or individuals. Organoid biobanks, patient-derived organoids, can greatly improve drug discovery and development and potentially pave the way for precision medicine.

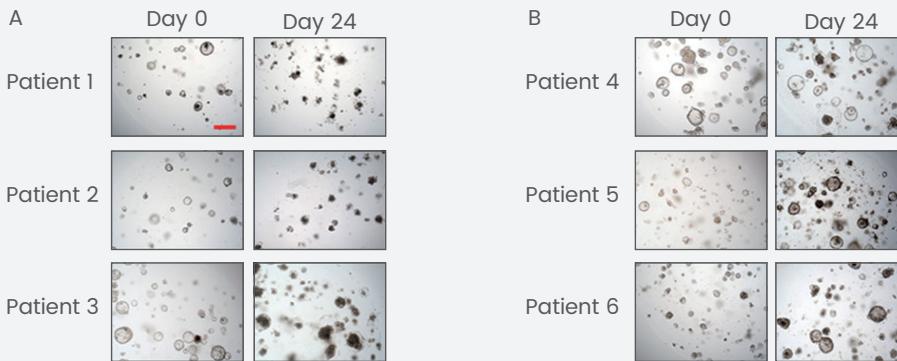
## Organoid Culture Protocol



## Protein Products with Bioactivity Data



## Applications in Literature

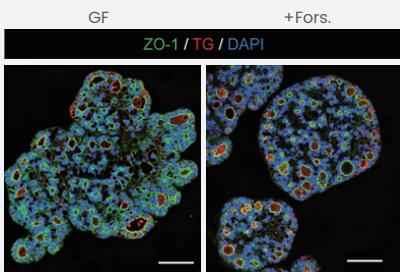


Representative bright-field images for colorectal cancer organoids on day 0 and day 24 in response to 5-Fu treatment.

(A) 5-Fu sensitive organoids; (B) 5-Fu resistant organoids

Sino Biological proteins used in the organoid culture: RSPO1 ([11083-HNAS](#)), NOG ([50688-M02H](#)), EGF ([50482-MNCH](#))

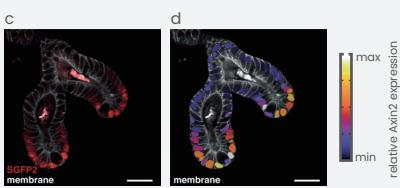
Chen, L., Tian, B., Liu, W., Liang, H., You, Y., & Liu, W. Molecular Biomarker of Drug Resistance Developed From Patient-Derived Organoids Predicts Survival of Colorectal Cancer Patients. *Frontiers in oncology*. 2022; 12, 855674. <https://doi.org/10.3389/fonc.2022.855674>



Immunofluorescence double-labeled thyroid organoid of ZO-1 and TG, and nuclei staining with DAPI. Scale bar = 50  $\mu$ m.

Proteins used in the organoid culture: EGF ([10605-HNAE](#))

Liang, J., Qian, J., Yang, L., Chen, X., Wang, X., Lin, X., Wang, X., Zhao, B., Modeling Human Thyroid Development by Fetal Tissue-Derived Organoid Culture. *Adv. Sci.* 2022; 9, 2105568. <https://doi.org/10.1002/advs.202105568>



Visualization and manipulation of endogenous WNT signaling in small intestinal organoids.

(c) Confocal microscopy image of two crypts from a fixed Axin2<sup>P2A-rtTA3-T2A-3xNLS-SGFP2 HOM</sup>; Rosa26<sup>mTmG</sup> HET small intestinal organoid.

(d) Heat map showing the relative Axin2 expression superimposed on the confocal image in (c)

Sino Biological proteins used in the organoid culture: RSPO1 ([11083-HNAS](#))

van de Moosdijk, AAA, van de Grift, YBC, de Man, SMA, Zeeman, AL, van Amerongen, R. A novel Axin2 knock-in mouse model for visualization and lineage tracing of WNT/CTNNB1 responsive cells. *genesis*. 2020; 58:e23387.

<https://doi.org/10.1002/dvg.23387>

## Product Features

High-purity

Batch-to-batch consistency

Validated bioactivity

ISO9001 and ISO13485 certified



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