

Colorectal cancer organoid lines

Cellesce's technology enables the growth and expansion of Patient-Derived Organoids (PDOs). Derived from adult stem cells PDOs make better cancer models that we grow to the scale and consistency demanded in early stage drug discovery. Cellesce supplies PDO models to the pharma and biotech industry that predict patient response, leading to improved cancer drug discovery, more products to market and in due course better treatments for patients.

Cellesce uses patented organoid expansion technologies that minimise manual handling time and maximise reproducibility, to position organoid technology as a cost-effective and accurate tool in early-stage drug discovery.

We currently have 10 patient-derived colorectal cancer organoids lines available for sale from a range of genetic backgrounds, in fixed density vials from large scale batches. Lines have been well characterised, and batches validated in-house for response against a number of CRC-targeting agents. Vials are provided for use 'off-the-shelf' in small to high throughput assays, with protocols and further technical support available from Cellesce.

Applications

Cellesce's Organoids are compatible with:

- Drug discovery
- Metabolic readouts
- Biomarker analysis
- Image based analysis

- Testing of advanced therapies
- Microfluidic ("-on-chip") studies
- CRISPR screening
- Organoid-derived Xenograft generation

Features

Derived from patient tissue:

- Available from a range of colorectal sites and TNM stages
- Varied morphologies and growth profiles
- Tissue obtained with full ethical consent

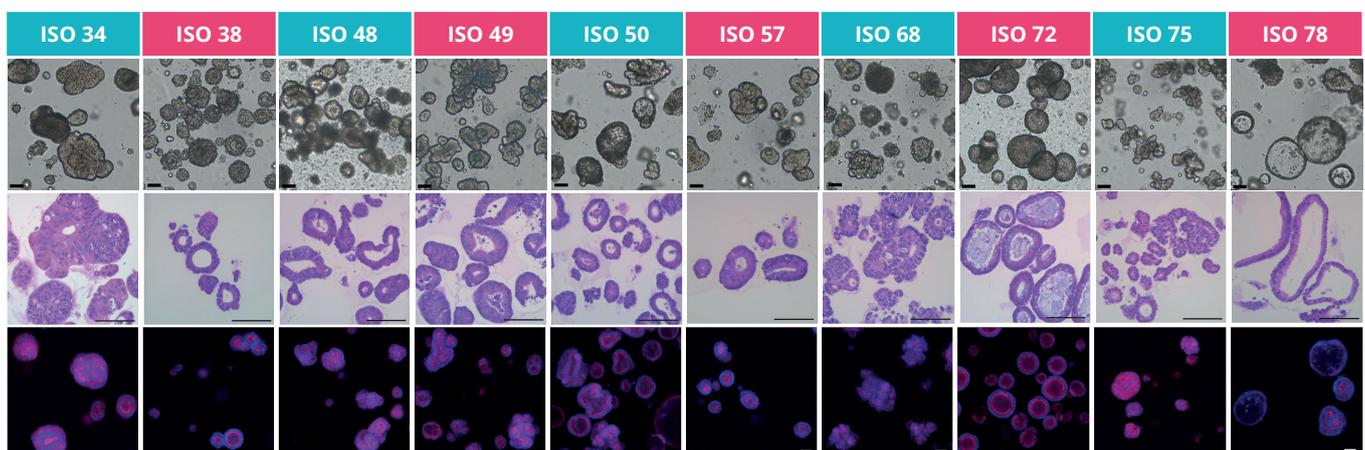
Well characterised:

- Mutation profiling (WES)
- Mycoplasma free
- In-house validation against a number of known CRC targeting agents
- Paraffin-embedded sections also available for purchase from each line

Easy to use format:

- Organoids provided frozen in cryovials
- Organoids provided in 40-80µm size range, ready for seeding into assays
- c.500 data points per vial
- Media conditions established
- Large scale batches enable maximum consistency and reproducibility
- Full protocols for use provided
- Technical support available

REPRESENTATIVE IMAGES OF THE COLORECTAL CANCER LINES



Upper: Brightfield, Middle: H&E, Lower: Confocal. Organoids stained for nuclear (blue) and cytoskeletal (red) markers for confocal imaging. Scale 100µm

COLORECTAL CANCER ORGANOID LINE INFORMATION

Characteristic	ISO 34	ISO 38	ISO 48	ISO 49	ISO 50	ISO 57	ISO 68	ISO 72	ISO 75	ISO 78	Characteristic
Tumour Site	Transverse Colon	Sigmoid Colon	Caecum	Lower Sigmoid	Rectum	Upper rectum	Sigmoid Colon	Caecum	Caecum	Caecum	Tumour Site
Dukes' Stage	A	C1	C2	C1	C2	A	C1	B	C1	C1	Dukes' Stage
Media requirement	Media A	Media A	Media A	Media A	Media A	Media A	Media A	Media A	Media B	Media B	Media requirement

Donor age and gender available on request.

MUTATIONAL PROFILE

Gene	ISO 34	ISO 38	ISO 48	ISO 49	ISO 50	ISO 57	ISO 68	ISO 72	ISO 75	ISO 78	Gene
APC	▲ E1451*	▲ G1339Ffs*2	---	▲ R1450* ▲ A1446Lfs*27	▲ R232* ▲ E1286*	▲ Q978*	▲ Q1096* ▲ E1408*	▲ Q1291*	---	▲ R876* ▲ E1451*	APC
TP53	---	▲ C238Y	---	▲ R248Q	▲ R248Q*	▲ R282W	▲ R248W	---	---	▲ H193D	TP53
KRAS	---	---	---	▲ G12D	▲ G12D	▲ G13D	▲ G13D	▲ G12D	---	▲ G12D	KRAS
BRAF	▲ K601E	---	---	---	---	---	---	---	▲ V600E	---	BRAF
PIK3CA	---	---	▲ E542K	▲ E542K	---	---	---	---	---	---	PIK3CA
CTNNB1	---	---	▲ S33C	---	---	---	---	---	---	---	CTNNB1
FBXW7	---	---	---	▲ R465C	---	---	---	---	---	---	FBXW7
ARID1A	---	---	---	---	---	---	---	---	▲ F2141Sfs*59	---	ARID1A
SMAD4	---	▲ D537H	---	---	▲ E526K	---	▲ Q534*	---	---	---	SMAD4
ARID2	---	---	---	---	---	---	---	---	---	---	ARID2
AXIN2	---	---	---	---	---	---	---	---	---	---	AXIN2
ERBB3	---	---	---	---	---	---	---	▲ A232V	---	---	ERBB3
MSH3	---	---	---	---	---	---	---	---	▲ K381Gfs*20	---	MSH3
NRAS	---	---	---	---	---	---	---	---	---	---	NRAS
POLE	---	---	---	---	---	---	---	---	---	---	POLE
SMAD2	---	---	---	---	▲ S464*	---	---	---	---	---	SMAD2
TCF7L2	---	---	---	---	---	---	---	---	---	---	TCF7L2
RNF43	---	---	---	---	---	---	---	---	▲ G659GX	---	RNF43
Gene	ISO 34	ISO 38	ISO 48	ISO 49	ISO 50	ISO 57	ISO 68	ISO 72	ISO 75	ISO 78	Gene

Full list of 1608 genes screened available upon request.

How to use Cellesce Organoids

Material supplied:	• Vial of Cellesce CRC organoids (100,000 per vial)
Additional materials required (not supplied):	• Media A or Media B (line dependent) • Growth factor reduced Matrigel • Rho Kinase Inhibitor (Y-27632) (10mM) • Tissue culture treated multi-well plate(s)



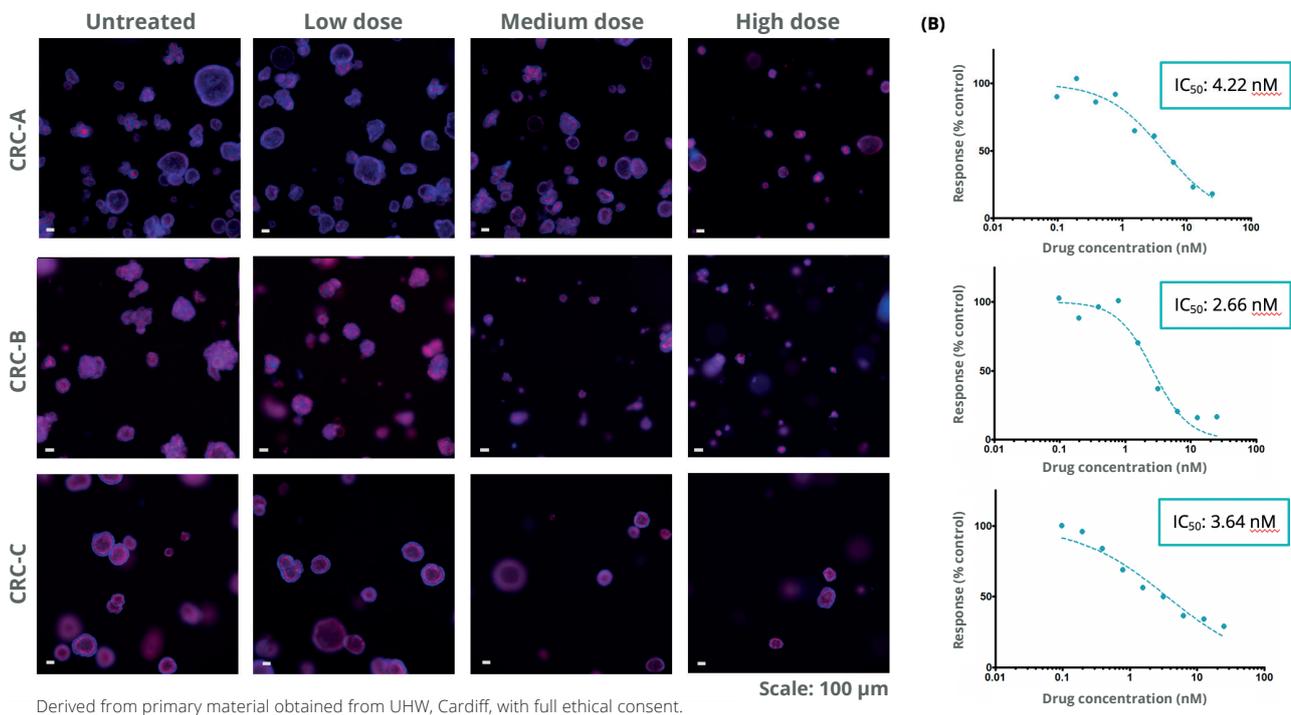
Component	Final concentration	Media A	Media B
Advanced DMEM-F12	1X	✓	✓
HEPES	10mM	✓	✓
Glutamax	2mM	✓	✓
Penicillin/Streptomycin	100 U/ml	✓	✓
B27	1X	✓	✓
N2	1X	✓	✓
N-acetyl-L-cysteine	1.25mM	✓	✓

Component	Final concentration	Media A	Media B
EGF	50 ng/ml		✓
Noggin	100 ng/ml		✓
Nicotinamide	10 mM		✓
A8301	500nM		✓
SB202190	10µM		✓
Wnt Conditioned Media	40%		✓
R-Spondin 1 Conditioned Media	10%		✓

Organoid media compositions: based on line-dependent requirements

Example use

Vials of organoids from several colorectal lines were thawed, seeded in Matrigel at approximately 200 structures per well, and after a short recovery window (48 hours) treated with a 9 point titration of Trametinib alongside a DMSO control for 5 days. Organoids were then stained for nuclear (blue) and cytoskeletal (red) markers for confocal imaging. Assay end point organoid viability was determined by Cell Titer Glo 3D, to generate titration curves and IC₅₀ values. Scale bars: 100 µm.



Summary

Cellesce's patented bioprocess enables the large-scale expansion of reproducible, validated batches of organoids compatible with high-throughput screening applications:

- Cryopreserved and ready to plate straight into your desired format
- Full protocols provided
- Technical support available

Cellesce also offers a range of custom services:

- Culture optimisation and banking options
- Expansion of your existing organoid lines, to your specifications
- Large-scale expansion with custom vialling and QC packages

In addition to Colorectal Cancer organoids, new organoid lines are currently in development, including breast and normal intestine. These will soon be available for purchase at scale.