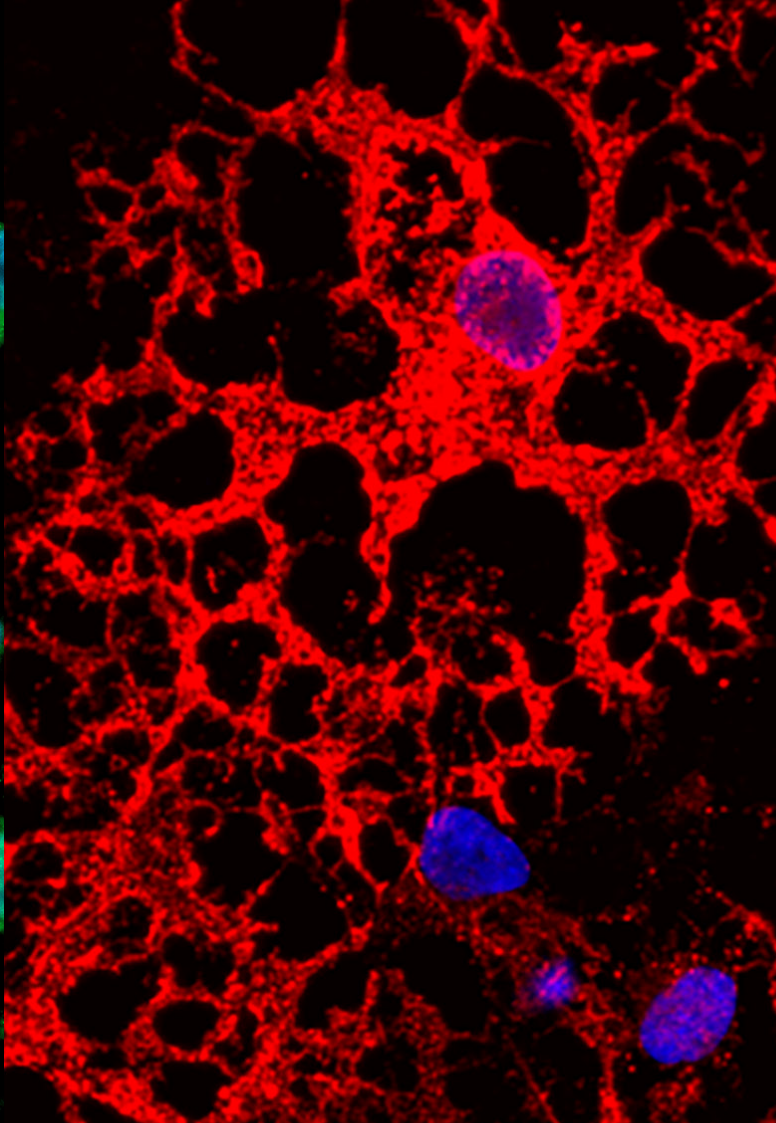
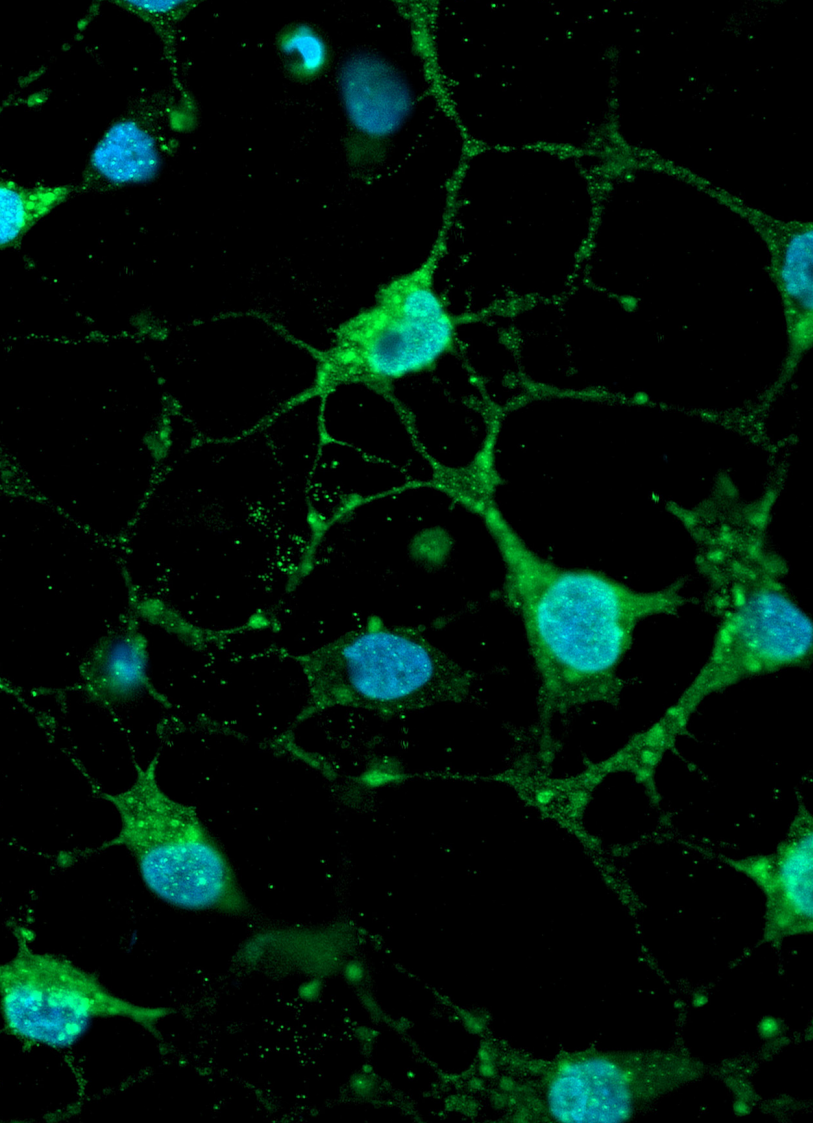




ioOPC- and ioOligodendrocyte-like cells

Human iPSC-derived
oligodendroglial cells

Powered by opti-ox™

Consistent. Defined. Scalable.

Learn more about our
oligodendroglial cells

ioCells™



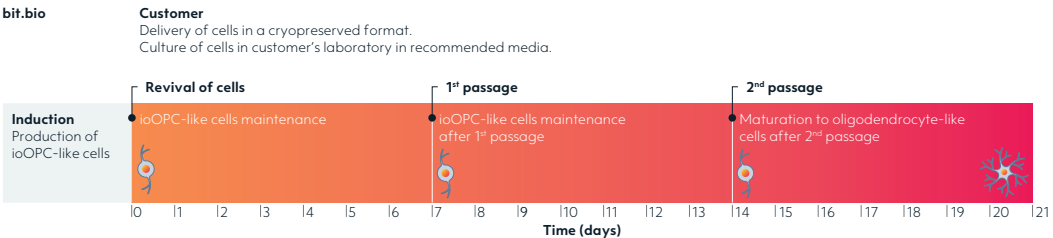
About the cells

ioOPC-like cells

ioOPC-like cells resemble Oligodendrocyte Precursor Cells (OPCs) and have the ability to differentiate towards a pre-myelinating oligodendrocyte stage.

Upon revival, the cells immediately exhibit typical OPC morphology and express key oligodendroglial progenitor genes, such as PDGFRA. During the maintenance phases, the cells remain proliferative for up to one passage, giving scientists a 2-week experimental window to conduct proliferation assays.

With a simple media change, the cells can be matured towards an oligodendrocyte-like cell identity, exhibiting a complex morphology and express key mature oligodendrocyte markers, such as MBP.



Benchtop benefits



ACCESS

Reliable access to challenging-to-obtain human cell types enables efficient experiment planning and reproducible results.



PHENOTYPICALLY RELEVANT

Cells show expected morphology and express oligodendroglial markers. OPC-like cells can be maintained and matured to oligodendrocyte-like cells.



QUICK

OPC-like cells are ready from day 1 post-revival and can be maintained for a 2-week period.

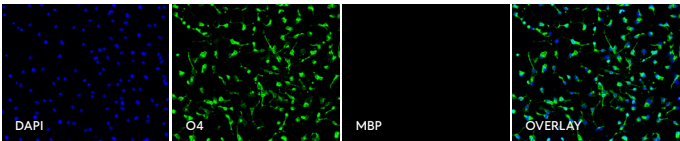
ioOPC-like cells have proliferative ability and rapidly express oligodendroglial-specific markers

Immunofluorescence staining for O4 and MBP

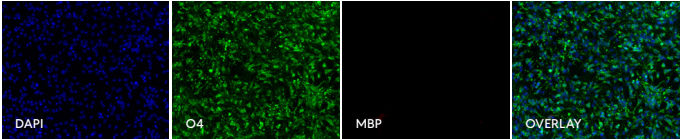
At day 1, 7 and 14, the cells are positive for the O4 (green), and the DAPI counterstain (blue).

By day 21, after the 2nd passage, and upon switching to maturation media, cells show an increased complexity and are positive for O4 (green), the myelin basic protein (MBP) (red), and the DAPI counterstain (blue).

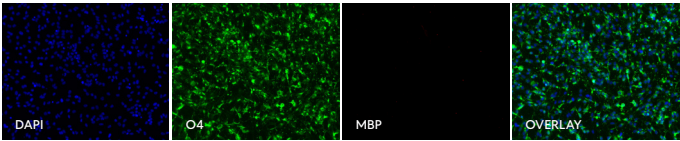
Day 1 | ioOPC-like cells maintenance



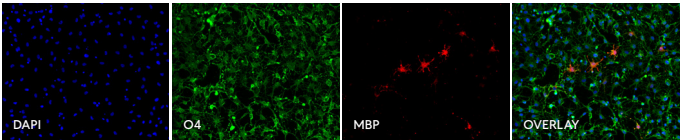
Day 7 | ioOPC-like cells maintenance



Day 14 | ioOPC-like cells maintenance after 1st passage



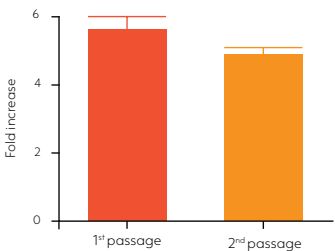
Day 21 | Maturation to oligodendrocyte-like cells after 2nd passage



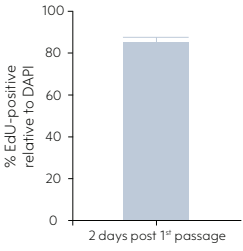
ioOPC-like cells have proliferative ability for a 2-week period and can be passaged

Assessment of cell fold increase after treatment with Click-iT[™] EdU cell proliferation assay shows the cell number increasing by approximately 4- to 5-fold. 80% of cells are positive at day 9 (2 days after 1st passage).

Cell number fold increase at passage



EdU quantification



About the cells

ioOligodendrocyte-like cells

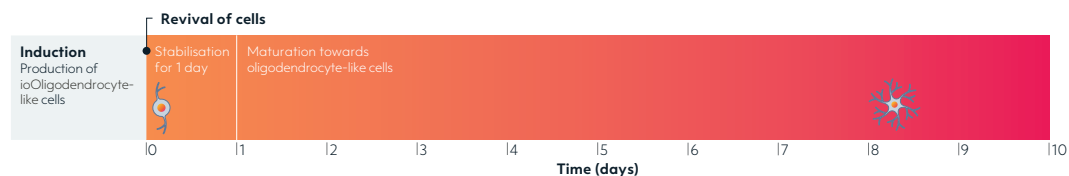
ioOligodendrocyte-like cells are highly characterised cells that resemble a pre-myelinating oligodendrocyte state.

Upon thawing (day 1), cells are ready for experimentation and express the oligodendroglial lineage marker O4. By simply maintaining cells in a monolayer culture, cells rapidly mature and acquire a typical oligodendrocyte-like morphology with multiple branched processes. Cells start expressing oligodendrocyte markers, including MBP, PLP1, CNP and MAG.

bit.bio

Customer

Delivery of cells in a cryopreserved format.
Culture of cells in customer's laboratory in recommended media.



Benchtop benefits



DEFINED

Human O4⁺ cells initially display a typical OPC-like morphology. They mature into oligodendrocyte-like cells that have multiple branched processes.



QUICK

O4⁺ cells are ready from day 1 post-revival and rapidly mature into O4⁺ MBP⁺ oligodendrocyte-like cells with an 8 day protocol.



EASY TO USE

Cryopreserved cells arrive ready to be used upon revival. Simple monolayer culture protocol. No lentiviral transduction required.

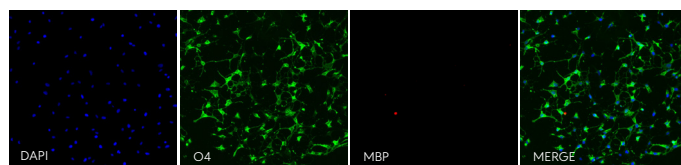
ioOligodendrocyte-like cells rapidly express oligodendroglial-specific markers

Immunofluorescence staining for O4 and MBP

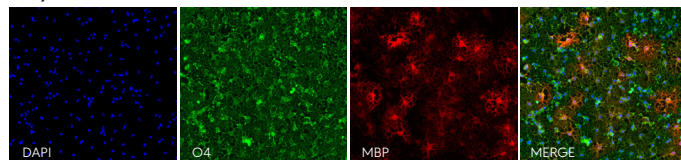
At day 1, the cells are positive for the oligodendrocyte-specific marker O4 (green), and the DAPI counterstain (blue).

At day 10, ioOligodendrocyte-like cells show an increased complexity and are positive for O4 (green), the myelin basic protein (MBP) (red), and the DAPI counterstain (blue).

Day 1



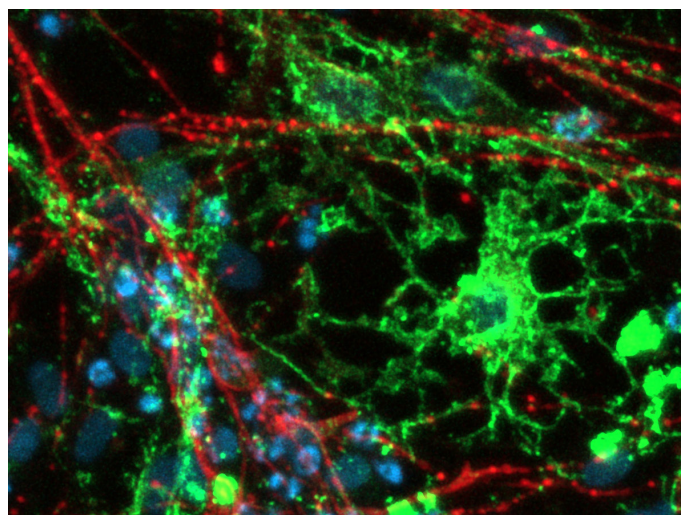
Day 10



ioOligodendrocyte-like cells show increased MBP expression when in co-culture with ioGlutamatergic Neurons

A valuable in vitro cellular model for scientists studying neurons and oligodendrocytes interactions

Immunofluorescent staining of a co-culture of ioOligodendrocyte-like cells expressing the oligodendrocyte marker MBP (green) and ioGlutamatergic Neurons pan-neuronal marker TUBB3 (red), and DAPI counterstain (blue). Co-cultures were analysed on day 21.



ioOPC-like cells and ioOligodendrocyte-like cells provide scientists easy access to human, physiologically relevant oligodendroglial cell models, ideal for studying the biology underlying demyelinating and neurodegenerative diseases.

I want to		so, I choose	because
screen compounds for	proliferation	ioOPC-like cells	they offer a consistent proliferative window of up to 2 weeks
	differentiation/maturation	either	both products transition from an OPC-like to an oligodendrocyte-like phenotype
	myelination	ioOligodendrocyte-like cells	they are quicker to induce key myelination genes (e.g. MBP)
perform phenotypic assays for	proliferative defects	ioOPC-like cells	they recapitulate early developmental biology
	mature phenotype	ioOligodendrocyte-like cells	they quickly mature to express key myelination genes
co-culture		ioOligodendrocyte-like cells	they are ready for immediate integration into multi-cell cultures

Discover our range of oligodendroglial cells for disease modelling, CRISPR screens and multi-cell in vitro models.

CRISPR-Ready ioCells

CRISPRko-Ready
ioOligodendrocyte-like cells

Can be co-cultured with

ioGlutamatergic Neurons

ioMicroglia

ioAstrocytes

Who we are

bit.bio combines the concepts of cell programming and biology to provide human cells for research, drug discovery and cell therapy, enabling a new generation of medicines.

This is possible with our deterministic cell programming technology opti-ox – a gene engineering approach that enables unlimited batches of any human cell to be manufactured consistently at scale.

For general information,
email info@bit.bio

To learn more,
visit www.bit.bio

For information on bit.bio's trade marks,
visit www.bit.bio/trademarks