Ready-to-use hiPSC-Derived Dorsal Forebrain Organoids (Standard)

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Cat. No. CIPO-BWL01

Product Description

Human iPSC-Derived Dorsal Forebrain Organoids (Cat. No. CIPO-BWL01) are three-dimensional in vitro models that recapitulate key developmental and cellular features of the human dorsal forebrain. These organoids are generated from the human iPSC line ATCC-HYR0103 under ultra-low attachment (ULA) culture conditions using a self-assembly differentiation workflow. Human iPSC-Derived Dorsal Forebrain Organoids exhibit characteristic dorsal forebrain and cortical features, including SOX2-positive progenitor regions, CTIP2-positive deep-layer cortical neurons, and broadly distributed MAP2-positive neuronal populations. The organoids are shipped at ambient temperature in a ready-to-use format and can be maintained using the Human iPSC-Derived Dorsal Forebrain Maintenance Kit (Cat. No. RIPO-BWM01). This model is suitable for a range of applications, including studies of human brain development, neurological disease modeling, neurotoxicity assessment, drug discovery, and other neuroscience research.

Product Specification

Product Name	Ready-to-use hiPSC-Derived Dorsal Forebrain Organoids (Standard)
Cat. No.	CIPO-BWL01
Source Cell Line	ATCC-HYR0103 human iPSC line
Product size	5 / 20 / 100 organoids
Packaging format	Individually packaged; 1 dorsal forebrain organoid per 2 mL cryovial
Shipping condition	Shipped under temperature-controlled conditions with blue ice, 4-25°C
Applications	Functional assessment, drug screening, neurotoxicity assessment
Passaging	Not suitable for passaging
Intended Use	For research use only. Not intended for human or animal diagnostic or therapeutic use.
Shipping window	DIV 60-90. In-transit period is excluded from the DIV count.
COA	Available at https://www.acrobiosystems.cn/resources/download-certificate-of-analysis

Materials (Not include in our kit)

Product Name	Cat. No.	Manufacturer
6-well ULA plate	CP-21	ACROBiosystems
24-well ULA plate	WP24-5CCUSH	ALPHA PLUS
48-well ULA plate	WP48-5CCUSH	ALPHA PLUS
96-well ULA plate	CP-22	ACROBiosystems
3mL disposable Pasteur pipette, extended type, sterilized	PP102030	Jet Biofil
hiPSC-Derived Dorsal Forebrain Organoid Maintenance Kit	RIPO-BWM01	ACROBiosystems

Equipment

Equipment	Specification / Notes
CO_2 Incubator	37°C, 5% CO_2
Orbital Shaker	20 mm shaking diameter
Water Bath	37°C
Biosafety Cabinet	Aseptic handling

Experimental Procedure

1. Preparation

1.1 Use sterile technique to prepare complete hiPSC-Derived Dorsal Forebrain Organoid Maintenance Medium following the product datasheet (Cat. No. RIPO-BWM01).

2. Package Inspection

2.1 Upon receipt, recover Ready-to-use Human iPSC-Derived Dorsal Forebrain Organoids as soon as possible. Before opening, inspect the outer package, cryovial, transport medium, and organoid integrity.

2.2 Proceed only if the cryovial is intact, the medium is clear with no signs of freezing or precipitation, and the organoid remains visible, spherical, and intact (Figure 1). If damage, leakage, turbidity, freezing, precipitation, or organoid disintegration is observed, do not open the cryovial. Document the issue with photos and contact sales support immediately.



*Figure 1. Example of Dorsal Forebrain Organoid Packaging. * The dorsal forebrain organoid is expected to appear intact upon receipt.*

3. Organoid Recovery

3.1 Pre-warm only the required volume of complete Dorsal Forebrain Organoid Maintenance Medium at 37°C for 15 min before use. Calculate the volume based on the number of wells to be used. Avoid repeated warming of the medium bottle, as frequent temperature changes may affect medium stability. Keep the remaining complete medium at 2-8°C. For example, when preparing medium for one well of a 6-well plate, transfer 5 mL of medium into a sterile 15 mL centrifuge tube and pre-warm the aliquot at 37°C for 15 min before medium change.

Culture Format	Maintenance Medium Volume	Organoids per Well	Medium Change Frequency	Orbital Shaker
6-well ULA plate	5 mL	16	**Option 1:** Three medium changes per week: perform two half-medium changes on Day 1 and Day 3, followed by one full-medium change on Day 5. **Option 2:** Perform a full-medium change every 3 days.	Yes, 100 rpm
24-well ULA plate	1 mL	1		Optional, static or 60 rpm orbital shaker
48-well ULA plate	500 µL	1		Optional, static or 60 rpm orbital shaker
96-well ULA plate	200 µL	1	Daily	No, static culture

Table 1. Recommended Medium Volumes and Culture Conditions for Dorsal Forebrain Organoids

3.2 Open the 2 mL cryovial and gently transfer the organoids into the wells of an ULA plate using a Pasteur pipette.

3.3 Remove the residual transport medium from each well containing the organoids. Add pre-warmed maintenance medium to each well, ensuring that the organoids are fully submerged and not exposed to air. ***Note:*** *Medium change should be performed gently by adding pre-warmed maintenance medium slowly along the well wall to minimize shear stress and avoid mechanical damage.*

3.4 Culture the organoids at 37°C with 5% CO_2 under shaking conditions for 3 days to allow recovery. Perform full-medium changes every 2 days without touching or damaging the organoids. A 6-well ULA plate (100 rpm) is recommended for the recovery phase.

4. Organoid Maintenance

4.1 After the 3-day recovery phase, the organoids are ready for downstream assays. Before proceeding, confirm the organoid morphology and medium condition. Organoids should maintain a near-spherical morphology with clear, smooth edges and no obvious surrounding cell debris.

4.2 For continued culture, maintain the organoids at 37°C with 5% CO_2 under either static or orbital shaking conditions, following the culture conditions and medium-change schedule described in Table 1. Monitor organoid morphology and culture status regularly.

4.3. Protocols for Ca^{2+} imaging, immunostaining, qPCR and MEA recording are available online.



Figure 2. Orbital shaker culture of dorsal forebrain organoids at 37°C with 5% CO_2.

Related Product

Product	Cat. No.
hiPSC-Derived Dorsal Forebrain Organoid Maintenance Kit	RIPO-BWM01
6-well ULA plate	CP-21
96-well ULA plate	CP-22