OCUT-2C

305544

GENERAL INFORMATION

Description

OCUT-2C (Osaka City University Thyroid-2C) is a human anaplastic thyroid carcinoma cell line established from a pleural effusion of an 81-year-old Japanese female patient. The line grows as an adherent monolayer. OCUT-2C harbors two clinically significant oncogenic mutations: BRAF p.Val600Glu (V600E) and PIK3CA p.His1047Arg (H1047R), reflecting the concurrent MAPK and PI3K/Akt pathway activation commonly observed in dedifferentiated and anaplastic thyroid carcinomas. The presence of both BRAF V600E and PIK3CA H1047R provides a clinically relevant model for studying resistance mechanisms and combination therapy strategies in anaplastic thyroid cancer.
OCUT-2C is applicable in studies of anaplastic thyroid carcinoma biology, BRAF V600E + PI3K H1047R co-mutation biology, MAPK/ERK and PI3K/Akt pathway signalling, targeted therapy evaluation (BRAF inhibitors, MEK inhibitors, PI3K/mTOR inhibitors), and combination therapy approaches. As an anaplastic thyroid carcinoma model from a Japanese patient, it is relevant for studying the aggressive, treatment-resistant biology characteristic of this malignancy with a very poor prognosis.

Tissue	Pleura
Disease	Anaplastic thyroid carcinoma
Metastatic site	Pleural effusion

Applications

Anaplastic thyroid carcinoma research; BRAF V600E + PIK3CA H1047R co-mutation biology; MAPK/PI3K pathway signalling; BRAF/MEK inhibitor evaluation; PI3K/mTOR inhibitor evaluation; combination therapy strategies; thyroid cancer drug resistance

Synonyms

- Ocut-2C
- OCUT2C
- Osaka City University Thyroid-2C

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
GMO status	Non-GMO

GMO status details

No genetic modification; wildtype anaplastic thyroid carcinoma cell line with somatic BRAF V600E and PIK3CA H1047R mutations

Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Cell type	Epithelial cells
Doubling time	approx. 24 to 48 hours

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

IDENTIFIERS

Citation

OCUT-2C (Cytion catalog number 305544)

NCBI TaxID	9606
Cellosaurus	CVCL_W915

EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Mutation: p.Val600Glu, Unspecified; Mutation: p.His1047Arg, Unspecified

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase

Subculturing

Remove medium, wash with PBS without calcium and magnesium, cover with Accutase, incubate 8–10 min at RT, resuspend in medium, centrifuge 300×g 3 min, discard supernatant, reseed in fresh medium.

Split ratio	1 to 5
Seeding density	1 to 3 × 10^4 cells/cm^2
Fluid renewal	Every 2 to 3 days

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required.
For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently.
Centrifuge the mixture at 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium.
Follow the procedure described under Post-Thaw Recovery

QUALITY CONTROL AND CRYOPRESERVATION

Freeze medium	As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability.

Storage conditions

For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

Shipping conditions

Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.

DONOR

Donor age	81Y
Ethnicity	Japanese

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes