A2780-GFP

305676

GENERAL INFORMATION

Description

A2780-GFP is a genetically modified derivative of the human ovarian carcinoma cell line A2780, engineered to stably express green fluorescent protein (GFP). The parental A2780 cell line was established from an ovarian tumor in an adult patient and is widely used as a model for epithelial ovarian cancer, particularly in studies of chemotherapy response. It is known for its relative sensitivity to platinum-based agents such as cisplatin, making it a valuable system for investigating mechanisms of drug action and resistance. The GFP-expressing variant preserves these biological characteristics while incorporating a fluorescent reporter for enhanced experimental utility.
The stable expression of GFP enables real-time visualization and quantitative analysis of A2780-GFP cells in a variety of experimental settings. Fluorescence-based detection allows researchers to monitor cell proliferation, morphology, migration, and viability in vitro, as well as to track tumor growth and dissemination in vivo. This is particularly advantageous in xenograft and metastasis models, where GFP facilitates discrimination of tumor cells from surrounding host tissue. The fluorescent signal is generally stable across passages, although expression levels may vary depending on the transduction method and clonal selection.
A2780-GFP retains the core molecular and phenotypic features of the parental A2780 line, including pathways associated with DNA damage response, apoptosis, and chemotherapeutic sensitivity. As such, it is commonly used in high-content imaging assays, drug screening platforms, and co-culture systems where spatial and temporal resolution of tumor cell behavior is required. The addition of GFP significantly enhances the versatility of this model, supporting applications in ovarian cancer research, therapeutic evaluation, and studies of tumor cell dynamics.
Genetic modification: Stably modified by replication-incompetent lentiviral transduction to express the ZsGreen1 green fluorescent protein reporter; maintained as a polyclonal population under puromycin selection (1–5 µg/mL). S1/BSL-1 containment.

Tissue	Ovary
Disease	Ovarian endometrioid adenocarcinoma
Metastatic site	Primary tumor site (ovary)

Applications

Ovarian cancer imaging; GFP-based tumor tracking; in vivo fluorescence imaging; combination with parental A2780 for comparative studies; drug efficacy visualization

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
GMO status	GMO-S1

GMO status details

GMO-S1: This cell line contains a stably integrated ZsGreen1 green fluorescent protein reporter introduced via replication-incompetent lentiviral transduction. The resulting polyclonal cell population was maintained under puromycin selection (1–5 µg/mL). S1 containment is required. This classification applies only within Germany and may differ elsewhere.

Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like

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Cell type	Epithelial cells

IDENTIFIERS

Citation

A2780-GFP (Cytion catalog number 305676)

NCBI TaxID	9606
Cellosaurus	Not assigned (A2780-GFP reporter derivative; parental A2780 CVCL_1099)

EXPRESSION AND SUSCEPTIBILITY

Antigen expression

ZsGreen1 (green fluorescent protein)

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
Split ratio	1 to 5
Seeding density	1 to 3 × 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week

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	Age unspecified
Ethnicity	African American

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