Cancer Cell Line Medium XF

Instruction manual

Product	Size	Catalog number
Cancer Cell Line Medium XF	250 ml	C-28077

Recommended for

Adherently growing established human cancer cell lines.

Product description

Our Cancer Cell Line Medium XF was designed as a highly standardized serum-free and xeno-free formulation for the serial *in vitro* cultivation of established cancer cell lines. It further allows to cultivate or co-cultivate a range of different cancer cells, cancer-associated cells, and non-cancer cells such as immune or stromal cells. This rich growth medium supports the long-term cultivation of cancer cells over many passages. It has no ill-defined components such as fetal calf serum, extracts or hydrolysates and exhibits very low lot-to-lot variability and requires fibronectin- or vitronectin-coated vessels. The Medium consists of a bottle of Basal Medium and one vial of SupplementMix, when mixed these form the full medium.

Note: The serum- and xeno-free formulation means non-availability of attachment factors meaning coating with an appropriate adhesion factor is a pre-requisite. To establish culture conditions, we recommended testing fibronectin and vitronectin coating. Table 1 (page 4) gives an overview of cell lines and surface coatings tested with the Cancer Cell Line Medium XF.

Supplementation details

The PromoCell Cancer Cell Line Medium XF contains all growth factors and supplements. The medium does not contain antibiotics or antimycotics and is formulated for use in an incubator with an atmosphere of 5% CO_2.

Preparation of the supplemented medium for use

Thaw the SupplementMix at 15–25°C. Aseptically mix the supplement solution by carefully pipetting up and down. Then, transfer the entire content of the SupplementMix to the Basal Medium. Close the bottle and swirl gently until a homogenous mixture is formed.

Storage and stability

Store the Basal Medium at 2–8°C in the dark, store the SupplementMix at -20°C immediately after arrival. Do not freeze the Basal Medium. If stored properly, the products are stable until the expiry date stated on the label. After the supplements are added to the basal medium, store at 4–8°C and use within 6 weeks. For use, pre-warm only an aliquot of the complete medium at 15–25°C and keep the remaining medium refrigerated at 2–8°C.

Quality control

All lots of the PromoCell Cancer Cell Line Medium XF are subjected to comprehensive quality control tests using a human cancer cell line. Each lot of PromoCell Cancer Cell Line Medium XF is tested for the ability to support proliferation and serial passage of MCF-7 breast carcinoma cells on fibronectin- or vitronectin-coated dishes. In addition, all lots of media have been tested for the absence of microbial contaminants (fungi, bacteria, mycoplasma).

Intended use

The products are for *in vitro* use only and are not suitable for diagnostic or therapeutic procedures. For safety precautions please see appropriate MSDS.

Transitioning and routine culture of an established cancer cell line

This protocol describes how a human cancer cell line can be switched to the Cancer Cell Line Medium XF and routinely handled in long-term culture.

I. Switching an existing cell culture

Materials

- Proliferating culture of a human cancer cell line in good condition
- Cancer Cell Line Medium XF (C-28077)
- Adhesion factors: Human fibronectin or vitronectin
- Phosphate buffered saline (PBS) w/o Ca^{2+}/Mg^{2+} (C-40232)
- Accutase (C-41310) or, optionally, DetachKit (C-41210)
- Tissue-culture-treated cell culture vessels

Use aseptic techniques and a laminar flow bench.

1

Coat the culture vessel

The serum- and xeno-free formulation does not contain attachment factors. Thus coating of the surface of the cell culture vessel with an appropriate adhesion factor is usually needed. Table 1 (page 5) shows an overview of cell lines and surface coatings tested with the Cancer Cell Line Medium XF.
To establish culture conditions, it is recommended to test fibronectin and vitronectin coating using the following procedure. The culture vessel must be precoated either with 1 µg/cm² human fibronectin or 0.5 µg/cm² human vitronectin according to the instruction manual of the manufacturer. Use 100 µl of diluted coating solution per cm² of culture surface. Final concentration is fibronectin 1 µg/cm² and vitronectin 0.5 µg/cm².

Note: If not used immediately, the sealed vessel may be stored for up to 3 months at 2–8°C for later use.

2

Harvest cells from your existing culture

Harvest and count cells from an established culture of the appropriate cell line using your standard method. Re-suspend them in Cancer Cell Line Medium XF.

3

Plate the cells

Plate the cells at a density of 5,000–10,000 cells/cm². When seeding the cells for the first time in the Cancer Cell Line Medium XF, use approximately 200 µl of medium per cm² of culture surface, e.g. 5 ml for a T25 flask.

4

Let the cells grow

Incubate the plated cells at 37°C and 5% CO_2. Change the medium every 2–3 days.

Note: Adaption of cell cultures to the Cancer Cell Line Medium XF is not required. With some cell lines, proliferation may be somewhat reduced after initiating the culture but this should normalize after one to three passages.

5

Cell subculture

Once the cells have reached 70–80% confluence, wash the culture twice with ambient tempered PBS without Ca^{2+}/Mg^{2+} and then incubate the cells for 5–10 minutes with 150 µl/cm² Accutase at 37°C. After the first 5 minutes of incubation, monitor the detachment process visually. When the cells start to detach, facilitate their complete dislodgement by tapping the flask. Add the same volume of Cancer Cell Line Medium XF to the detached cells and spin down for 5 minutes at 300 x g at room temperature (RT). Carefully aspirate the supernatant and gently resuspend the cell pellet in an adequate amount of Cancer Cell Line Medium XF. Seed the cells into new fibronectin- or vitronectin-coated vessels and incubate them further at 37°C and 5% CO_2. Use approximately 300–400 µl of medium per cm² of culture surface for the subsequent cultivation. Continue incubation of the cultures at 37°C and 5% CO_2.

II. Routine culture

See page 2.

Use aseptic techniques and a laminar flow bench.

1

Coat the culture vessel

Coat the culture vessel with the suitable adhesion factors as previously tested (see page 2).

2.A

Harvest cells from your existing culture

Harvest and count cells from an established culture of the appropriate cell line using your standard method. Resuspend them in Cancer Cell Line Medium XF.

2.B

Thaw cells from cryo-stock

Cryopreserved cells cultured previously in Cancer Cell Line Medium XF can also be thawed directly using this medium.

3

Plate the cells

Plate the cells at the appropriate density (5,000–10,000 cells/cm²). Use approximately 300–400 µl of Cancer Cell Line Medium XF per cm² of culture surface, e.g. 7.5–10 ml for a T25 flask.

4

Let the cells grow

Incubate the plated cells at 37°C and 5% CO_2. Change the medium every 2–3 days.

5

Cell subculture

Once the cells have reached 70–80% confluence, wash the culture twice with ambient tempered PBS without Ca^{2+}/Mg^{2+} and then incubate the cells for 5–10 minutes with 150 µl/cm² Accutase at 37°C. After the first 5 minutes of incubation, monitor the detachment process visually. When the cells start to detach, facilitate their complete dislodgement by tapping the flask. Add the same volume of Cancer Cell Line Medium XF to the detached cells and spin down for 5 minutes at 300 x g at room temperature. Carefully aspirate the supernatant and gently resuspend the cell pellet in an adequate amount of Cancer Cell Line Medium XF. Seed the cells into new coated vessels and incubate them further at 37°C and 5% CO_2. Use approx. 300–400 µl of medium per cm² of culture surface. Continue incubation of the cultures at 37°C and 5% CO_2.

Tissue	Tested cell line	Cell line origin	Remarks
Brain	BV2	Immortalized murine primary microglial cells	Coat with Fibronectin: 1 µg/cm²
Breast	MCF-7	Pleural effusion of metastatic human breast adenocarcinoma	Coat with Fibronectin: 1 µg/cm² or Vitronectin: 0.5 µg/cm²
Colon	HT-29	Human colon adenocarcinoma	Coat with Vitronectin: 0.5 µg/cm²
Connective tissue	HT 1080	Human fibrosarcoma	Coat with Fibronectin: 1 µg/cm²
Liver	HepG2	Hepatocellular carcinoma of the human liver	Coat with Vitronectin: 0.5 µg/cm²
Lung	A-549	Human lung carcinoma	Coat with Vitronectin: 0.5 µg/cm²
Prostate	LNCaP	Lymph node metastasis of human prostate adenocarcinoma	3D Tumorsphere Medium XF (C-28070)
Peripheral blood	BDCM	B lymphoblast cell line	No coating required
Bone marrow	KG-1	Human acute myelogenous leukemia (suspension)	No coating required
Kidney	ACHN	Human renal cell carcinoma	Coat with Fibronectin: 1 µg/cm²

Table 2: Overview of cell lines and surface coatings tested for serial passage with the Cancer Cell Line Medium XF.

If you require special media modifications, we offer a custom media service starting at 10 bottles per order.
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