Product description

The MCF7/S0.5 human breast cancer cell line has been established to grow at low serum. The presence of hormones in the serum required in tissue culture media complicates the demonstration of specific hormone and antihormone effects. Methods to overcome this have included charcoal-treated serum and serum-free medium. However, both methods have serious drawbacks. Therefore, the MCF-7/S0.5 cell line has been adapted to long-term growth at 0.5 % foetal bovine serum to reduce the oestrogen supply via serum and to enable oestrogen receptor-mediated growth inhibition with the anti-oestrogens like tamoxifen. The MCF7/S0.5 cells are also useful for studies investigating the effects of oestrogens, if they, instead of 1% foetal calf serum, are cultivated with 10% newborn calf serum which contains very low oestrogenic activity. MCF7/S0.5 cells express both oestrogen and progesterone receptors. Many tamoxifen, fulvestrant, letrozole, anastrozole, and exemestane resistant cell lines have been derived from MCF7/S0.5 and so this line can be utilized as a parental sensitive control to its derivative resistant cell lines in parallel experiments.

Name: MCF7/S0.5 Cell line

Organism: Human

Disease: Cancer

Cancer detailed: Breast cancer

Tissue: Breast

Parent cell line: MCF7

Growth properties: Adherent

Model: Tumour line

Donor: Female, Caucasian, 69Y

Production details: This MCF7 subline was established buy stepwise reduction in the serum concentration from 5% foetal calf serum to 0.5 % in growth medium consisting of DMEM: Ham's F-12 medium (1:1) supplemented with 2mM glutamine and insulin (6ng/ml)

Cellosaurus ID: CVCL_1D47

Biosafety level: 1

Contributor(s)

Inventor: Anne Lykkesfeldt
Institute: Danish Cancer Society

Properties

Product format: Frozen

Unpacking and storage:

1. Check all containers for leakage or breakage.

2. Remove the frozen cells from the dry ice packaging and immediately place the cells at a temperature below -130°C, preferably in liquid nitrogen vapor, until ready for use.

Recommended medium: Phenol-red-free DMEM/F12 medium supplemented with 1% foetal calf serum 2.5 mM Glutamax and 6 ng/ml insulin.

Subculture routine: Split at 70-80% confluence: 1:3 to 1:6 (seeding at 2-4x10^4 cells/cm^2) using 0.05% trypsin or trypsin or 0.05% trypsin/EDTA solution. Change the media every 2-3 days

Culture conditions: 37.0°C ± 1.0°C humidified incubator with 5.0% CO_2.

Handling instructions

1. Please ensure that vials are frozen when received, and store at **<-130 °C long term**. When removing frozen cells from storage, it is important to minimize exposure to room temperature (15 - 25°C). If not proceeding directly to thawing, place the cells on dry ice or in a liquid nitrogen container.
2. **Do not thaw at room temperature.** To thaw, swirl the vial quickly in a 37 °C water bath with O-ring and cap above the water to avoid contamination. Remove from the water bath with a small ice pellet remaining (this should not take more than 2 minutes) and wipe the exterior with 70% ethanol or isopropanol before transferring to a biosafety cabinet. Further steps should be conducted under aseptic conditions.
3. We strongly recommend that the volume of cell suspension is measured, and a 20 uL aliquot be set aside at this point for a viable cell count using trypan blue or similar dye.
4. In a laminar flow hood, use a 1 or 2 mL pipette to transfer the cells to a sterile 15 mL conical tube. Be careful not to introduce any bubbles during the transfer process.
5. Using a 10 mL pipette, slowly add **dropwise** 9 mL of prewarmed complete medium to the 15 mL conical tube.
6. Gently mix the cell suspension by slowly pipetting up and down twice. Be careful not to introduce any bubbles.
7. Centrifuge the tube at **300 x g for 2-3 minutes** to pellet the cells. Decant as much of the supernatant as possible.
8. Resuspend the cells in 10-15 mL of pre-warmed to complete medium.
9. Transfer the cell mixture to a T75 tissue culture flask and incubate at 37°C in a humidified incubator with 5% CO2.
10. The next day, exchange the medium with 10-15 mL of fresh pre-warmed medium. Exchange with fresh medium every two to three days thereafter. Subculture following instructions above.

References

- Joshi et al. 2016. Oncotarget. :. PMID: 27528030
- Alves et al. 2016. Clin Cancer Res. :. PMID: 27252418
- Elias et al. 2015. Oncogene. 34:1919–1927. PMID: 24882577
- Thomsen et al. 2015. Breast Cancer Res Treat. :. PMID: 26585578
- Hole et al. 2015. Int J Oncol. 46(4):1481-90. PMID: 25625755
- Sonne-Hansen et al. 2005. J Steroid Biochem Mol Biol. 93(1):25-34. PMID: 15748829
- Lykkesfeldt et al. 1995. Int J Cancer. 61(4):529-34. PMID: 7759159
- Madsen et. al. 1995. Mol Cell Endocrinol 109(2):197-207. PMID: 7664983
- Lykkesfeldt et al. 1994. Cancer Res. 54(6):1587-95. PMID: 8137264
- Lykkesfeldt et al. 1989. Mol Cell Endocrinol. 62(2):287-96. PMID: 2744230
- Lykkesfeldt et al. 1986. Br J Cancer. 53(1):29-35. PMID: 3947513
- Briand et al. 1984. Cancer Res. 44(3):1114-9. PMID: 6362856.

Material Citation

If use of this material results in a scientific publication, please cite the material in the following manner:
MCF7/S0.5 Cell line was invented by Anne Lykkesfeldt (CancerTools.org #152090).

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