

Data Sheet

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BCRJ Code:	0085
Cell Line:	F98
Species:	<i>Rattus norvegicus</i>
Vulgar Name:	Rat
Tissue:	Brain
Cell Type:	Glioblastoma
Morphology:	Glial
Disease:	Undifferentiated Malignant Glioma
Growth Properties:	Adherent
Age/Ethnicity:	20 (fetus - gestation) Day /
Applications:	The biological characteristics of this tumor closely resemble those of human glioblastoma. The F98 glioma can be used as rat brain tumor models in experimental neuro-oncology. This cell line may be used for both in vitro and in vivo studies of a rat brain tumor.
Tumor Formation::	Yes, as an intracerebral xenograft in cats. Yes, in CD Fischer rats
Biosafety:	1
Additional Info:	The transplantable tumor displays an infiltrative pattern of growth within the brain. It is weakly immunogenic in syngeneic rats and an intracerebral inoculum of as few as 100 cells are lethal.
Culture Medium:	Dulbecco's Modified Eagle's Medium (DMEM) modified to contain 4 mM L-glutamine, 4500 mg/L glucose and fetal bovine serum to a final concentration of 10%.

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Subculturing:

Remove and discard culture medium. Briefly rinse the cell layer with PBS without calcium and magnesium to remove all traces of serum that contains trypsin inhibitor. Add 2.0 to 3.0 mL of Trypsin-EDTA solution to flask and observe cells under an inverted microscope until cell layer is dispersed (usually within 5 to 15 minutes). Note: To avoid clumping do not agitate the cells by hitting or shaking the flask while waiting for the cells to detach. Cells that are difficult to detach may be placed at 37°C to facilitate dispersal. Add 6.0 to 8.0 mL of complete growth medium and aspirate cells by gently pipetting. Add appropriate aliquots of the cell suspension to new culture vessels. Incubate cultures at 37°C. NOTE: For more information on enzymatic dissociation and subculturing of cell lines consult Chapter 12 in Culture of Animal Cells, a manual of Basic Technique by R. Ian Freshney, 6th edition, published by Alan R. Liss, N.Y., 2010.

Subculturing Medium Renewal:

Every 2 to 3 days

Subculturing Subcultivation Ratio:

1:6 to 1:10

Culture Conditions:

Atmosphere: air, 95%; carbon dioxide (CO₂), 5% Temperature: 37°C

Cryopreservation:

95% FBS + 5% DMSO (Dimethyl sulfoxide)

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SAFETY PRECAUTION: It is strongly recommended to always wear protective gloves, clothing, and a full-face mask when handling frozen vials. Some vials may leak when submerged in liquid nitrogen, allowing nitrogen to slowly enter the vial. Upon thawing, the conversion of liquid nitrogen back to its gas phase may cause the vial to explode or eject its cap with significant force, creating flying debris.

1. Thaw the vial by gently agitating it in a 37°C water bath. To minimize contamination, keep the O-ring and cap out of the water. Thawing should be rapid (approximately 2 minutes).
2. Remove the vial from the water bath as soon as its contents are thawed and decontaminate it by dipping in or spraying with 70% ethanol. From this point, all operations must be performed under strict aseptic conditions.
3. For cells sensitive to DMSO, it is recommended to remove the cryoprotective agent immediately. Transfer the vial contents to a centrifuge tube containing 9.0 mL of complete culture medium and centrifuge at approximately 125 × g for 5 to 7 minutes.
4. Discard the supernatant and resuspend the cell pellet in the recommended complete medium (see specific batch information for the appropriate dilution ratio).
5. Incubate the culture under appropriate atmospheric and temperature conditions (see "Culture Conditions" for this cell line).

NOTE: It is important to avoid excessive alkalinity of the medium during cell recovery. To minimize this risk, it is recommended to place the culture vessel containing the growth medium in the incubator for at least 15 minutes before adding the vial contents. This allows the medium to stabilize at its normal pH (7.0 to 7.6).

Thawing Frozen Cells:

References:

38592: Ko L, et al. Morphological characterization of nitrosourea-induced glioma cell lines and clones. *Acta Neuropathol.* 51: 23-31, 1980. PubMed: 7435138
38606: Tzeng JJ, et al. Adoptive immunotherapy of a rat glioma using lymphokine-activated killer cel

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