Organism: *Homo sapiens*, human  
Tissue: lung; derived from metastatic site: bone marrow  
Disease: carcinoma; small cell lung cancer (SCLC)  
Gender: male  
Morphology: epithelial  
Growth Properties: aggregates in suspension  
Isoenzymes:  
AK-1, 1  
ES-D, 1  
G6PD, B  
Me-2, 0  
PGM1, 1-2  
PGM3, 1  
DNA Profile:  
Amelogenin: X,Y  
CSF1PO: 11  
D13S317: 11  
D16S539: 9,12  
D5S818: 12  
D7S820: 9  
THO1: 7,9  
TPOX: 8  
vWA: 18,19  

Cytogenetic Analysis: This is a hyperdiploid human cell line. The modal chromosome number is 49, occurring at 28% with a frequency of higher ploidies of 1.3%. Ten to eleven markers were common to all cells including: der(1)t(1;3)(p22;p21), del(6)(q21), t(8q18q), del(12)(q13), der(14)t(14;?)(q32;?). All had a single copy per cell. About 6 other markers were found, but they occurred only once in all metaphases karyotyped. Neither HSR nor DM were detected. Structurally normal B group chromosomes were not detected. All C group chromosomes were paired. A single copy of both the X and Y was found in all cells.

ATCC highly recommends that protective gloves and clothing always be used and a full face mask always be worn when handling frozen vials. It is important to note that some vials leak when submersed in liquid nitrogen and will slowly fill with liquid nitrogen. Upon thawing, the conversion of the liquid nitrogen back to its gas phase may result in the vessel exploding or blowing off its cap with dangerous force creating flying debris.

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.

Handling Procedure for Frozen Cells

To insure the highest level of viability, thaw the vial and initiate the culture as soon as possible upon receipt. If upon arrival, continued storage of the frozen culture is necessary, it should be stored in liquid nitrogen vapor phase and not at -70°C. Storage at -70°C will result in loss of viability.

1. Thaw the vial by gentle agitation in a 37°C water bath. To reduce the possibility of 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 the contents are thawed, and decontaminate by dipping in or spraying with 70% ethanol. All of the operations from this point on should be carried out under strict aseptic conditions.
3. Transfer the vial contents to a centrifuge tube containing 9.0 mL complete culture medium. and spin at approximately 125 x g for 5 to 7 minutes.
4. Resuspend cell pellet with the recommended complete medium (see the specific batch information for the culture recommended dilution ratio), and dispense into a 25 cm² or a 75 cm² culture flask. It is important to avoid excessive alkalinity of the medium during recovery of the cells. It is suggested that,
Incubate the culture at 37°C in a suitable incubator. A 5% CO₂ in air atmosphere is recommended if using the medium described on this product sheet.

### Handling Procedure for Flask Cultures

The flask was seeded with cells (see specific batch information), grown, and completely filled with medium at ATCC to prevent loss of cells during shipping.

1. Upon receipt visually examine the culture for macroscopic evidence of any microbial contamination. Using an inverted microscope (preferably equipped with phase-contrast optics), carefully check for any evidence of microbial contamination.
2. Incubate the flask in an upright position for several hours at 37°C. After the temperature has equilibrated, aseptically remove the entire contents of the flask and centrifuge at 125 xg for 5 to 10 minutes. Remove shipping medium and save for reuse. Resuspend the cell pellet in 10 mL of this medium.
3. From this cell suspension remove a sample for a cell count and viability.
4. Incubate the culture, horizontally, at 37°C in a 5% CO₂ in air atmosphere.

### Subculturing Procedure

The line should be subcultured by dilution with fresh medium. Alternatively, the clusters may be collected by centrifugation and resuspended in fresh medium.

**Subcultivation Ratio:** A subcultivation ratio of 1:2 to 1:3 is recommended

**Medium Renewal:** 2 to 3 times per week

### Cryopreservation Medium

Complete culture medium described above supplemented with 5% (v/v) DMSO. Cell culture tested DMSO is available as ATCC Catalog No. 4-X.

### Comments

C-myc DNA sequences are not amplified. No gross structural DNA abnormalities were detected. This is a cell line that grows as large aggregates in suspension. Only the aggregates are viable, but no meaningful viability percentage can be measured. The medium will normally contain large amounts of cell debris.

The cells express an aberrant form of RB1 that is not phosphorylated, apparently due to a single point mutation at codon 706 (Cys -> Phe).

The line is a classic SCLC cell line which expresses elevated levels of four biochemical markers (neuron specific enolase, brain isoenzyme of creatine kinase, L-DOPA decarboxylase and bombesin-like immunoreactivity).

The line produces normal amounts of p53 mRNA relative to normal lung.

### References

References and other information relating to this product are available online at [www.atcc.org](http://www.atcc.org).

### Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the current publication of the *Biosafety in Microbiological and Biomedical Laboratories* from the U.S. Department of Health and Human Services Centers for Disease Control and Prevention and National Institutes for Health.

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Additional information on this culture is available on the ATCC web site at www.atcc.org.

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