**Organism:** *Homo sapiens*, human  
**Tissue:** lung  
**Disease:** Carcinoma  
**Cell Type:** epithelial  
**Age:** 58 years  
**Gender:** male  
**Morphology:** epithelial-like  
**Growth Properties:** adherent  

**Isoenzymes:**  
G6PD, B  

**DNA Profile:**  
Amelogenin: X,Y  
CSF1PO: 10,12  
D13S317: 11  
D16S539: 11,12  
D5S818: 11  
D7S820: 8,11  
THO1: 8,9,3  
TPOX: 8,11  
vWA: 14

**Cytogenetic Analysis:** This is a hypotriploid human cell line with the modal chromosome number of 66, occurring in 24% of cells. Cells with 64 (22%), 65, and 67 chromosome counts also occurred at relatively high frequencies; the rate with higher ploidies was low at 0.4%. There were 6 markers present in single copies in all cells. They include der(6)(q11;16) (q11;q27); del(6)(p23); del(11)(q21), del(2)(q12), del(2)(q11), M4 and M5. Most cells had two X and two Y chromosomes. However, one or both Y chromosomes were lost in 40% of 50 cells analyzed. Chromosomes N2 and N6 had single copies per cell; and N12 and N17 usually had 4 copies. Note: Cytogenetic information is based on initial seed stock at ATCC. Cytogenetic instability has been reported in the literature for some cell lines.

**Complete Growth Medium**

The base medium for this cell line is ATCC-formulated F-12K Medium, Catalog No. 30-2004. To make the complete growth medium, add the following components to the base medium: fetal bovine serum to a final concentration of 10%.

**Intended Use**

This product is intended for research use only. It is not intended for any animal or human therapeutic or diagnostic use.

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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. Also check to determine if the majority of cells are still attached to the bottom of the flask; during shipping the cultures are sometimes handled roughly and many of the cells often detach and become suspended in the culture medium (but are still viable).

2. **If the cells are still attached**, aseptically remove all but 5 to 10 mL of the shipping medium. The shipping medium can be saved for reuse. Incubate the cells at 37°C in a 5% CO₂ in air atmosphere until they are ready to be subcultured.

3. **If the cells are not attached**, aseptically remove the entire contents of the flask and centrifuge at 125 x g for 5 to 10 minutes. Remove shipping medium and save. Resuspend the pelleted cells in 10 mL of this medium and add to 25 cm² flask. Incubate at 37°C in a 5% CO₂ in air atmosphere until cells are ready to be subcultured.

### Subculturing Procedure

Volumes used in this protocol are for 75 cm² flask; proportionally reduce or increase amount of dissociation medium for culture vessels of other sizes. Corning® T-75 flasks (catalog #430641) are recommended for subculturing this product.

1. Remove and discard culture medium.
2. Briefly rinse the cell layer with 0.25% (w/v) Trypsin-0.53 mM EDTA solution to remove all traces of serum that contains trypsin inhibitor.
3. 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.
4. Add 6.0 to 8.0 mL of complete growth medium and aspirate cells by gently pipetting.
5. Add appropriate aliquots of the cell suspension to new culture vessels. Cultures can be established between 2 x 10³ and 1 x 10⁴ viable cells/cm². Do not exceed 7 x 10⁴ cells/cm².
6. Incubate cultures at 37°C.

**Interval:** Maintain cultures at a cell concentration between 6 X 10² and 6 X 10⁴ cell/cm².

**Subcultivation Ratio:** A subcultivation ratio of 1:3 to 1:8 is recommended

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

### Cryopreservation Medium

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

### Comments

Studies by M. Lieber, et al. revealed that A549 cells could synthesize lecithin with a high percentage of disaturated fatty acids utilizing the cytidine diphosphocholine pathway.

### 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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Citation of Strain

If use of this culture results in a scientific publication, it should be cited in that manuscript in the following manner: A549 (ATCC® CCL-185™)