

**Designation: BRL 3A**

CLS order number: Cryovial: 500129
Vital: 550129

Origin and General Characteristics

Organism:	Rattus norvegicus (rat)
Strain:	Buffalo
Growth Properties:	Monolayer, adherent
Description:	The serum-free conditioned supernatant of this cell line is a source of MSA factors (Multiple Stimulating Activity).

Culture Conditions and Handling

Culture Medium:	Ham's F12 medium supplemented with 2 mM L-glutamine and 10% fetal bovine serum (MG-60, CLS order number 820600).
Subculturing:	Remove medium and rinse the adherent cells using PBS without calcium and magnesium (3-5 ml PBS for T25, 5-10ml for T75 cell culture flasks). Add Accutase (1-2ml per T25, 2.5ml per T75 cell culture flask), the cell sheet must be covered completely. Incubate at ambient temperature for 8-10 minutes. Carefully resuspend the cells with medium (10 ml), centrifuge for 5 min at 300xg, resuspend cells in fresh medium and dispense into new flasks which contain fresh medium.
Split Ratio:	A ratio of 1:3 to 1:6 is recommended
Fluid Renewal:	2 to 3 times weekly
Freeze Medium:	CM-1 (CLS order number: 800125, 25ml, 800150, 50ml)
Sterility:	Fluorescence (DAPI) test: negative; Mycoplasma specific PCR: negative; Bacteria specific PCR: negative
Biosafety Level:	1

Special Features of the Cell Line

Viruses:	SMRV: Negative, as confirmed by Real-Time PCR
Authentication :	The rat origin was verified by Real-Time PCR.
Products:	Multiplication stimulating activity (MSA).

References:

Coon HG and Weiss MC. A quantitative comparison of formation of spontaneous and virus- produced viable hybrids. Proc Natl Acad Sci USA 62: 852-9, 1969.

Dulak NC and Temin HM. A partially purified polypeptide fraction from rat liver cell conditioned medium with multiplication-stimulating activity for embryo fibroblasts. J Cell Physiol 81: 153-70, 1973.

Dulak NC and Shing YW. Large scale purification and further characterization of a rat liver cell conditioned medium multiplication stimulating activity. J Cell Physiol 90: 127-30, 1977.

Nissley SP et al. Proliferation of buffalo rat liver cells in serum-free medium does not depend upon multiplication-stimulating activity (MSA). Cell 11: 441-6, 1977.

Schalch DS et al. Nonsuppressible insulin-like activity (NSILA). I. Development of a new sensitive competitive protein-binding assay for determination of serum levels. J Clin Endocrinol Metab 46: 664-71, 1978.

Seidah NG et al. The secretory poprotein convertase neural apoptosis-regulated convertase 1 (NARC-1): liver regeneration and neuronal differentiation. Proc Natl Acad Sci USA 100: 928-33, 2003.

Inagaki K et al. Evidence of isozymes for delta6 fatty acid desaturase in rat hepatocytes. Biosci Biotechnol Biochem 67: 451-4, 2003.

Hussain SM et al. In vitro toxicity of nanoparticles in BRL 3A rat liver cells. Toxicol In Vitro 19: 975-83, 2005.

Recommendations for handling of adherent cell cultures following delivery

Cryopreserved cells

If immediate culturing is not intended, the cryovial(s) must be stored in liquid nitrogen (-196°C) or at least at -80°C after arrival.

If immediate culturing is intended, please follow these instructions:

Quickly thaw by rapid agitation in a 37°C water bath within 40-60 seconds. The water bath should have clean water containing an antimicrobial agent. As soon as the sample has thawed, remove the cryovial from the water bath. Note: A small ice clump should still remain and the vial should still be cold.

From now on, all operations should be carried out under aseptic conditions.

Transfer the cryovial to a sterile flow cabinet and wipe with 70% alcohol. Carefully open the vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of culture medium (room temperature). Resuspend the cells carefully. Centrifuge at 300xg for 3 min and discard the supernatant. The centrifugation step may be omitted, but in this case the remains of the freeze medium have to be removed 24 hours later.

Resuspend the cells carefully in 10ml fresh cell culture medium and transfer them into two T25 cell culture flasks. All further steps are described in the Subculture section.

Proliferating Cultures

The cell culture flasks are completely filled with cell culture medium to prevent loss of cells during transit.

Remove the entire medium except for a sufficient volume to cover the floor of the flask. Incubate at 37°C for 24 hrs.

Sometimes the cultures are handled roughly during transit, and most of the cells detach and float in the culture medium. If this has occurred remove the entire content of the flask and centrifuge at 300x g for 5 minutes. Take off the supernatant, resuspend the cells in 10 ml of culture medium and transfer the entire cell suspension into cell culture flasks of suitable size (do not seed in more than 1 T75 flask).

Safety precautions for frozen cell lines

If the cryovial is planned to be stored in liquid nitrogen and to be thawed in the future, special safety precautions should be followed:

- Protective gloves and clothing should be used and a facemask or safety goggles must be worn when storing and/or thawing the cryovial.
- The removal of a cryovial from liquid nitrogen can result in the explosion of the cryovial creating flying fragments.

References: Caputo, J.L. Biosafety procedures in cell culture. J. Tissue Cult. Methods 11:223-227, 1988. ATCC Quality Control Methods for Cell Lines, 2nd edition, 1992.