BCRJ Code:	0145
Cell Line:	LL/2 (LLC1)
Species:	Mus musculus
Vulgar Name:	Mouse
Tissue:	Lung
Morphology:	Rounded - Loosely Attached Or Floating
Disease:	Lewis Lung Carcinoma
Growth Properties:	Mixed, Adherent And Suspension
Applications:	This line is widely used as a model for metastasis and is useful for studying the mechanisms of cancer chemotherapeutic agents.
Tumor Formation::	Yes, in C57BL mice
Biosafety:	1
Addtional Info:	The cells are resistant to 1,3-bis-(2-chloroethyl)-1-nitrosourea, but are sensitive to methotrexate. The cells are reported to be highly tumorigenic, but weakly metastatic in mice. The cells form multilayers in flasks without actually becoming confluent.
Culture Medium:	Dulbecco's Modified Eagle's Medium (DMEM) modified to contain 2 mM L-glutamine, 4500 mg/L glucose and fetal bovine serum to a final concentration of 10%.
Subculturing:	Subcultures are prepared by diluting the suspension 1:4 to 1:6. Cells on the floor of the flask may be dislodged by aspirating several times with culture medium or by rinsing with 0.25% trypsin - 0.53 mM EDTA solution. Population Doubling Time 21 hrs 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:	2 to 3 times per week
Culture Conditions:	Atmosphere: air, 95%; carbon dioxide (CO2), 5% Temperature: 37°C
Cryopreservation:	95% FBS + 5% DMSO (Dimethyl sulfoxide)
Thawing Frozen Cells:	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).
References:	1091: Bertram JS, Janik P. Establishment of a cloned line of Lewis lung carcinoma cells adapted to cell culture. Cancer Lett. 11: 63-73, 1980. PubMed: 7226139 45212: Sharma S, et al. T cell-derived IL-10 promotes lung cancer growth by suppressing both T c
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Cellosaurus: CVCL_4358