

L6

CRL-1458™

L6 is a myoblast cell isolated from the skeletal muscle from a rat. This cell line was deposited by D Schubert.

96/100

Bioz Stars

915 Product Citations

Product category	Animal cells
Organism	<i>Rattus norvegicus</i> , rat
Cell type	myoblast
Morphology	myoblast
Tissue	Skeletal muscle
Applications	3D cell culture Food production research
Product format	Frozen
Storage conditions	Vapor phase of liquid nitrogen

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Documentation

- Product sheet
- Certificate of analysis
- Safety data sheet



BSL 1

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Required Products

These products are vital for the proper use of this item and have been confirmed as effective in supporting functionality. If you use alternative products, the quality and effectiveness of the item may be affected.

Dulbecco's Modified Eagle's Medium (DMEM)
30-2002

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Fetal Bovine Serum (FBS)
30-2020

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Detailed product information

COLLAPSE ALL

General

Specific applications

This cell line is a suitable transfection host.
Potential cell line for cultivated meat production

Characteristics

Growth properties

Adherent

Derivation

The L6 myogenic line was isolated originally by Yaffe from primary cultures of rat thigh muscle maintained for the first two passages in the presence of methyl cholanthrene.

Genes expressed

myosin

Comments

L6 cells fuse in culture to form multinucleated myotubes and striated fibers. The extent of cell fusion declines with passage and the cells should be frozen at low passage and periodically recloned with selection for fusion competent cells.
Tested and found negative for ectromelia virus (mousepox).

Handling information

Unpacking and storage instructions

1. Check all containers for leakage or breakage.

2. Remove the frozen cells from the dry ice packaging and immediately place the cell at a temperature below -130°C, preferably in liquid nitrogen vapor, until ready for

use.

Complete medium

The base medium for this cell line is ATCC-formulated Dulbecco's Modified Eagle's Medium, Catalog No. 30-2002. To make the complete growth medium, add the following components to the base medium: fetal bovine serum to a final concentration of 10%.

Temperature

37°C

Atmosphere

95% Air, 5% CO₂

Handling procedure

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 75 cm² tissue culture flask and dilute with the recommended complete culture medium (see the specific batch information for the recommended dilution ratio). It is important to avoid excessive alkalinity of the medium during recovery of the cells. It is suggested that, prior to the addition of the vial contents, the culture vessel containing the growth medium be placed into the incubator for at least 15 minutes to allow the medium to reach its normal pH (7.0 to 7.6).
4. 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.

If it is desired that the cryoprotective agent be removed immediately, or that a more concentrated cell suspension be obtained, centrifuge the cell suspension at approximately 125 x g for 5 to 10 minutes. Discard the supernatant and resuspend the cells with fresh growth medium at the dilution ratio recommended in the specific batch information.

Subculturing procedure

Volumes are given for a 75 cm² flask. Increase or decrease the amount of dissociation medium needed proportionally for culture vessels of other sizes. Subculture before the cells become confluent to retard the loss of differentiating ability that is observed as the cells are passaged. 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.
6. Incubate cultures at 37°C.

Quality control specifications

Mycoplasma contamination

Not detected

History

Deposited as

Rattus sp.

Depositors

D Schubert

Cross references

GenBank [M87067](#) R.norvegicus activin type IIB receptor mRNA.
GenBank [X57986](#) Rat mRNA for C alpha subunit of the cAMP-dependent protein kinase.

Legal disclaimers

Intended use

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

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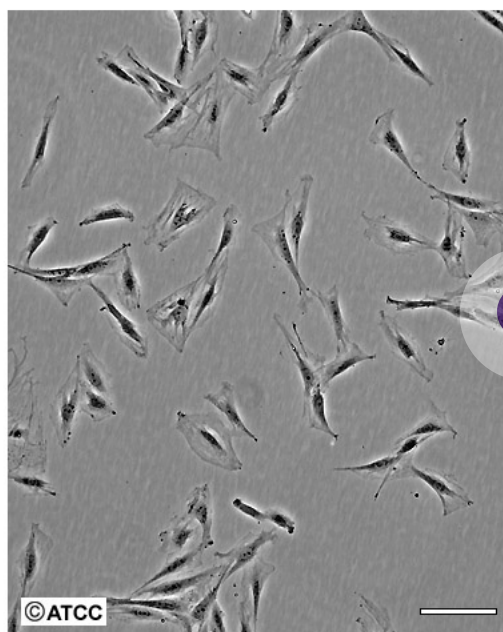
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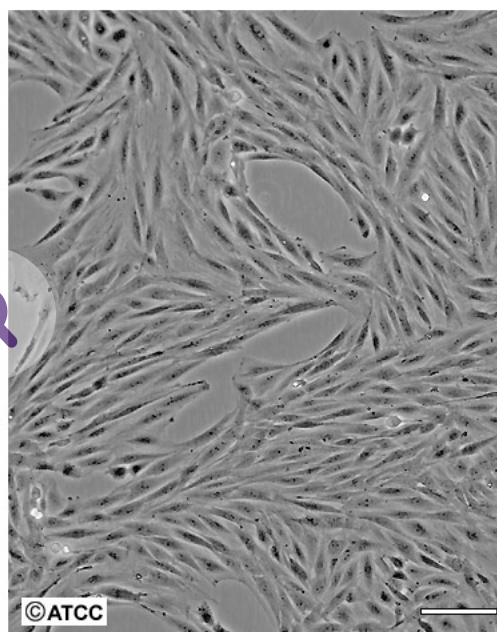
ATCC Number: **CRL-1458**

Designation: **L6**



Low Density

Scale Bar = 100µm



High Density

Scale Bar = 100µm

References

Curated Citations

Mandel JL, Pearson ML. Insulin stimulates myogenesis in a rat myoblast line. *Nature* 251: 618-620, 1974. PubMed: [4421831](#)

Richler C, Yaffe D. The in vitro cultivation and differentiation capacities of myogenic cell lines. *Dev. Biol.* 23: 1-22, 1970. PubMed: [5481965](#)

Yaffe D. Retention of differentiation potentialities during prolonged cultivation of myogenic cells. *Proc. Natl. Acad. Sci. USA* 61: 477-483, 1968. PubMed: [5245982](#)

Osawa H, et al. Identification and characterization of basal and cyclic AMP response elements in the promoter of the rat hexokinase II gene. J. Biol. Chem. 271: 17296-17303, 1996. PubMed: [8663388](#)

Osawa H, et al. Analysis of the signaling pathway involved in the regulation of hexokinase II gene transcription by insulin. J. Biol. Chem. 271: 16690-16694, 1996. PubMed: [8663315](#)



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Bioz AI Summary:

The **L6** myoblast cell line from **ATCC**, isolated from rat skeletal muscle, has been extensively utilized in various research studies to investigate muscle biology, metabolic processes, and therapeutic applications. This cell line has demonstrated significant utility in exploring glucose uptake, mitochondrial function, ins...

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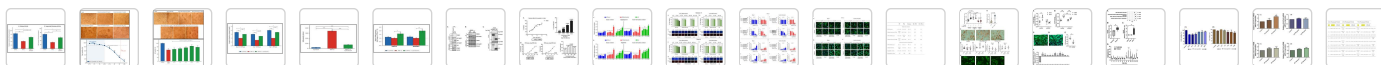
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New Extracellular 70kDa heat shock protein in blood plasma binds insulin and modulates glycaemic control in vivo

Mirna Stela Ludwig, Thiago Gomes Heck, ..., Paulo Ivo Homem de Bittencourt

Cell Stress & Chaperones | 2026 Jul 01 | 42119638 | Read Article | Bioz AI Brief

"gitation to be immediately frozen and processed for SDS-PAGE and immunoblotting for total and Tyr972-phosphorylated forms of insulin receptors. Rat myoblast L6 cells (American Type Culture Collection, **ATCC** cat. no. **CRL-1458**) were cultured in RPMI 1640 culture medium (Sigma, R1383), containing 2 mM l -glutamine, 24 mM NaHCO 3 , 25 mM HEPES, 11 mM d -glucose, 100 U/mL penicillin, 100 µg/mL streptomycin" More... | Share Article

New Patent Peptide immunogens targeting calcitonin gene-related peptide (CGRP) and formulations thereof for prevention and treat...

Chang Yi Wang

us12655187 | 2026 Jun 16 | Read Patent | Bioz AI Brief

".. each of the groups were carefully calibrated for use in in vitro assay. b.. Cell Preparation and **Maintenance Cell line L6 (ATCC® CRL-1458TM)** was purchased from ATCC.. The base medium for this cell line is ATCC-formulated Dulbecco's Modified Eagle's Medium, Catalog .." More... | Share Patent

New The Effect of Lactic Acid Bacteria Fermentation on the Anti-Diabetic Activity of Pumpkin Puree.

Aqsa Qayyum, Shahid Ahmed Junejo, ..., Zhong Chen

Foods (Basel, Switzerland) | 2026 Jun 12 | 42279669 | Read Article | Bioz AI Brief

".. antioxidant assays, ascorbic acid was used as the reference standard.. The **L6 rat skeletal muscle myoblast cell line (ATCC CRL-1458)** used in this study was obtained from the College of Food Science and Engineering, South China University of Technology (Guangzhou, China) and cultured according to the supplier's recommended protocols." More... | Share Article

Mitochondrial dysfunction in muscle cells induced by snoring vibrations.

Per Stål, Roine El-Habta, ..., Farhan Shah

Mitochondrion | 2026 Jun 02 | 42235782 | Read Article | Bioz AI Brief

"The commercial **rat muscle cell line L6 (ATCC® CRL-1458TM)** was used.. Myoblasts were cultured in T-175 flasks (Sarstedt, code: 83.3912.002) in Dulbecco's modified Eagle medium .." More... | Share Article

Vorinostat (SAHA) alters the skeletal muscle differentiation program

Sian Veronica, Roos Andreas, ..., Savarese Marco

bioRxiv | 2026 May 30 | Read Article | Bioz AI Brief

"**PrePrint:** .. (Gibco) was used to collect samples at day 3, 7, and 16 of differentiation.. L6 rat myoblasts (**ATCC-CRL-1458**) were purchased from LGC Nordic.. Cells were cultured in Dulbecco's modified Eagle medium (DMEM, Gibco), without phenol-red and pyruvate, .." More... | Share Article

Patent Pharmaceutical composition for preventing or treating myositis, comprising isolated mitochondria as active ingredient

Kyuboem Han, Chun-Hyung Kim, ..., Do Won Hwang

us12636316 | 2026 May 26 | Read Patent | Bioz AI Brief

"**L6 cells (American Type Culture Collection, ATCC, CRL-1458)**, a myoblast cell line derived from skeletal muscle of rats, were inoculated into a DMEM-High glucose (Dulbecco's modified eagle's medium-High glucose, Gibco) medium containing 10% fetal bovine serum (FBS, Gibco) and cultured for 72 hours.. After the culture of the cells was completed, the mitochondria .." More... | Share Patent ↩

Ion-Dependent ATPase Activity and Metabolic Gene Expression in TNF- α -Challenged Skeletal Muscle Cells: Mechanistic Characterisation of C...

Ali M. Albarrati, Rakan I. Nazer, Khurshid Ahmad

International Journal of Molecular Science... | 2026 May 18 | 42196489 | Read Article ↗ | Bioz AI Brief ⚡

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Article Snippet

"**L6 rat skeletal myoblasts (ATCC CRL-1458; RRID:CVCL_0385)** were cultured in RPMI-1640 medium (Sigma-Aldrich, St. Louis, MO, USA) supplemented with 10% heat-inactivated foetal bovine serum (FBS) and 1% penicillin-streptomycin.. Cells were maintained at 37 °C in a humidified 5% CO₂ atmosphere and .." More... | Share Article ↗

Figure Legend

"... (SOD) activities following TNF- α exposure and carvacrol treatment. **L6 myoblasts** were exposed to TNF- α (10 ng/mL," More...

Multi-Component 3D Bioprinted Platform with Sacrificial Matrix and Collagen-Based Bioinks for Skeletal Muscle Tissue Engineering

Carmen M^a. Granados-Carrera, Francisco José Calero Castro, ..., Abdelmohsen Abdellatif

Polymers | 2026 May 17 | 42198164 | Read Article ↗ | Bioz AI Brief ⚡

"Scaffolds were cultured using a **Rattus norvegicus L6 skeletal muscle cell line (ATCC ® CRL-1458)** in a growth medium plate containing high-glucose Dulbecco's modified Eagle's medium (SH30285.01, HyClone™, Fisher Scientific, Pittsburgh, PA, USA) supplemented with 10% fetal bovine serum (F7524, Sigma Aldrich, Darmstadt, Germany) and 1% P/S (15140-122, Gibco, New York, NY, USA) at 37 °C in a 5% CO₂ atmosphere." More... | Share Article ↗

Extracellular 70kDa heat shock protein in blood plasma binds insulin and modulates glycaemic control in vivo.

Mirna Stela Ludwig, Thiago Gomes Heck, ..., Paulo Ivo Homem de Bittencourt

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"In vitro uptake of radiolabelled 2-deoxyglucose (2-DG) by cultured L6 cells Rat myoblast L6 cells (**American Type Culture Collection, ATCC cat. no. CRL-1458**) were cultured in RPMI 1640 culture medium (Sigma, R1383), containing 2 mM L-glutamine, 24 mM NaHCO₃, 25 mM HEPES, 11 mM D-glucose, 100 U/mL penicillin, 100 g/mL streptomycin) and 10 % (v/v) FBS, pH 7.4, in 24-well plates (500 L final volume) at 37 °C in a 5 % (v/v) CO₂ humidified atmosphere in air." More... | Share Article ↗

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Silvester Lowe, Vishal Satikuvar, ..., Hachemi Kadri

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