

Resource Summary Report

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MC3T3-E1

RRID:CVCL_0409

Type: Cell Line

Proper Citation

CLS Cat# 305187, RRID:CVCL_0409

Cell Line Information

URL: https://web.expasy.org/cellosaurus/CVCL_0409

Proper Citation: CLS Cat# 305187, RRID:CVCL_0409

Description: Cell line MC3T3-E1 is a Spontaneously immortalized cell line with a species of origin *Mus musculus* (Mouse)

Sex: Sex unspecified

Defining Citation: [PMID:6826647](#), [PMID:8612673](#), [PMID:10352097](#), [PMID:11136541](#), [PMID:12638602](#), [PMID:25277546](#), [PMID:37712227](#)

Comments: Anecdotal: Have been flown in space on shuttle flights STS-56, STS-76, STS-81 and STS-84 to study growth and differentiation in microgravity (PubMed=8612673; PubMed=12638602)., Group: Space-flown cell line (cellonaut).

Category: Spontaneously immortalized cell line

Organism: *Mus musculus* (Mouse)

Name: MC3T3-E1

Synonyms: Mc3T3-E1, MC3T3E1, MC-3T3-E1, MC 3T3-E1

Cross References: BTO:BTO_0001957, CLO:CLO_0007582, CLO:CLO_0050208, MCCL:MCC:0000303, CLDB:cl40, ATCC:CRL-2953, CCRID:1101MOU-PUMC000012, CCTCC:GDC0188, ChEMBL-Cells:ChEMBL4295391, ChEMBL-Targets:ChEMBL4296463, CLS:305187, DSMZ:ACC-210, DSMZCellDive:ACC-210, ECACC:99072810, FCS-free:185-5-353-1-3-3, Lonza:521, PubChem_Cell_line:CVCL_0409, RCB:RCB1126, Wikidata:Q54904201

ID: CVCL_0409

Vendor: CLS

Catalog Number: 305187

Hierarchy: cvcl_0d74

Record Creation Time: 20260408T073915+0000

Record Last Update: 20260809T005538+0000

Ratings and Alerts

No rating or validation information has been found for MC3T3-E1.

Warning: Discontinued: ATCC; CRL-2953

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Data and Source Information

Source: [CelloSaurus](#)

Usage and Citation Metrics

We found 1245 mentions in open access literature.

Listed below are recent publications. The full list is available at [NIF](#) .

Xie X, et al. (2026) Early Radial Extracorporeal Shockwave Stimulation on Proximal Tibial Circular Osteotomy Site Enhanced Heterotopic Skin Wound Healing via Small Extracellular Vesicles. Advanced science (Weinheim, Baden-Wurttemberg, Germany), e17257.

Luo R, et al. (2026) Liposomal Quercetin-Loaded Biomimetic Scaffolds Manage Mechanical Overload in Maxillofacial Regeneration by Stabilizing the γ -Actin/YAP Mechanosensing Axis. Advanced healthcare materials, 15(22), e05818.

Surboy MDC, et al. (2026) Single-dose intrapalatal injection of erythromycin-loaded microparticles mitigates periodontitis-induced alveolar bone loss and enhances bone regeneration. International journal of pharmaceutics, 699, 126995.

Chen C, et al. (2026) Targeting integrin α V β 3-Ptgs2-mTOR signaling rescues bone formation in osteoporosis: from molecular mechanism toward therapy. Cellular & molecular biology letters, 31(1), 17.

Wu J, et al. (2026) Targeting a Myeloid-Regulatory B Cell Network Reverses Immune Paralysis in Periprosthetic Joint Infections. Advanced science (Weinheim, Baden-Wurttemberg, Germany), e76149.

Zhang T, et al. (2026) A remove-remodel-repair strategy enabled by a spatiotemporally controlled hydrogel for integrative osteosarcoma therapy. Biomaterials, 336, 124484.

- Wang HL, et al. (2026) The Osteoblastic Microenvironment Determines the Fate of Breast Cancer Cells Disseminated in the Bone Marrow. *Advanced science* (Weinheim, Baden-Wurttemberg, Germany), 13(22), e09980.
- Luo R, et al. (2026) Mechanism of YAP-Mediated Regulation of Osteogenic Differentiation via Cell Adhesion in a Mechanical Stimulus-Icariin Coupled Environment. *Advanced healthcare materials*, 15(15), e05446.
- Yin C, et al. (2026) Targeted Biomimetic Stem Cell Membrane-Exosome Composite Delivery System for the Treatment of Bone Defects. *ACS applied materials & interfaces*, 18(17), 24009.
- Zhang F, et al. (2025) The ESCRT protein CHMP5 restricts bone formation by controlling endolysosome-mitochondrion-mediated cell senescence. *eLife*, 13.
- Binet F, et al. (2025) Exploring the molecular cargos associated with extracellular vesicles extracted from bone tissue to identify novel players in osteoblast function. *American journal of physiology. Cell physiology*, 329(5), C1521.
- Yang S, et al. (2025) A Novel Nanozyme-based Coordination Compound for Synergistic Periprosthetic Joint Infection Treatment and Bone Repair. *Advanced healthcare materials*, e02379.
- Huo Y, et al. (2025) DEC1 promotes breast cancer bone metastasis through transcriptional activation of CXCR4. *Journal of biomedical research*, 39(5), 478.
- Hayashi K, et al. (2024) Cell-cell contact-dependent secretion of large-extracellular vesicles from EFN^Bhigh cancer cells accelerates peritoneal dissemination. *British journal of cancer*, 131(6), 982.
- Yue B, et al. (2024) WTAP increases BMP2 expression to promote osteoblast differentiation and inhibit osteoblast senescence via m6A methylation of Sp1. *Molecular genetics and genomics : MGG*, 299(1), 109.
- Sirisereephap K, et al. (2024) A novel macrolide-Del-1 axis to regenerate bone in old age. *iScience*, 27(2), 108798.
- Wang G, et al. (2023) Mechanically conditioned cell sheets cultured on thermo-responsive surfaces promote bone regeneration. *Biomaterials translational*, 4(1), 27.
- Abrão SMS, et al. (2023) Cytotoxicity and genotoxicity of Bio-C Repair, Endosequence BC Root Repair, MTA Angelus and MTA Repair HP. *Brazilian dental journal*, 34(2), 14.
- Jaramillo J, et al. (2023) Oxaloacetate enhances and accelerates regeneration in young mice by promoting proliferation and mineralization. *Frontiers in cell and developmental biology*, 11, 1117836.
- Ma S, et al. (2023) Skeletal muscle-derived extracellular vesicles transport glycolytic enzymes to mediate muscle-to-bone crosstalk. *Cell metabolism*, 35(11), 2028.