Resource Summary Report

Generated by dkNET on Sep 8, 2026

MC3T3-E1 Subclone 4

RRID:CVCL_5440
Type: Cell Line

Proper Citation

ATCC Cat# CRL-2593, RRID:CVCL_5440

Cell Line Information

URL: https://web.expasy.org/cellosaurus/CVCL_5440

Proper Citation: ATCC Cat# CRL-2593, RRID:CVCL_5440

Description: Cell line MC3T3-E1 Subclone 4 is a Spontaneously immortalized cell line with a species of origin Mus musculus (Mouse)

Sex: Sex unspecified

Defining Citation: PMID:10352097, PMID:23430347

Comments: Miscellaneous: STR profile from personal communication of Almeida, Jamie L.; PubMed=23430347 has a different value for STR 6-4 (17) than that submitted (18) due to a change in the marker motif., Characteristics: Exhibits high levels of osteoblast differentiation after growth in ascorbic acid and 3 to 4 mM inorganic phosphate. Forms a well mineralized extracellular matrix (ECM) after 10 days (ATCC=CRL-2593).

Category: Spontaneously immortalized cell line

Organism: Mus musculus (Mouse)

Name: MC3T3-E1 Subclone 4

Synonyms: MC3T3, E1 subgroup-4 clone, MC3T3-E1(C4), MC-4

Cross References: BTO:BTO_0004473, CLO:CLO_0007586, ATCC:CRL-2593, IZSLER:BS CL 181, TOKU-E:2372, Wikidata:Q54904205

ID: CVCL_5440

Vendor: ATCC

Catalog Number: CRL-2593

Hierarchy: cvcl_0409

Record Creation Time: 20220427T220749+0000

Record Last Update: 20260905T181111+0000

Ratings and Alerts

No rating or validation information has been found for MC3T3-E1 Subclone 4.

No alerts have been found for MC3T3-E1 Subclone 4.

Data and Source Information

Source: Cellosaurus

Usage and Citation Metrics

We found 22 mentions in open access literature.

Listed below are recent publications. The full list is available at dkNET .

Hutchison B, et al. (2026) Dysbiosis in the Gut-Liver Axis Is Associated With Low Bone Mass During Murine Cholestasis. FASEB journal : official publication of the Federation of American Societies for Experimental Biology, 40(6), e71667.

Sottnik JL, et al. (2026) Advanced models of lobular breast cancer metastasis capture clinical organ tropism, endocrine response, and bone remodeling. bioRxiv : the preprint server for biology.

Zhang Q, et al. (2026) Full-laser-enabled clean hierarchical structuring and multifunctional synergy for high-performance in vivo 3D-printed implants. Materials today. Bio, 38, 103095.

Kim DH, et al. (2026) Red ginseng-derived nanovesicles to modulate osteoblast and osteoclastogenesis for osteoporosis therapy. Asian journal of pharmaceutical sciences, 21(3), 101168.

Angelozzi M, et al. (2025) Fgfr3 enhancer deletion markedly improves all skeletal features in a mouse model of achondroplasia. The Journal of clinical investigation, 135(2).

Chen W, et al. (2025) Magnesium-Impregnated Membrane Promotes Bone Regeneration in Rat Skull Defect by N-Linked Glycosylation of SPARC via MagT1. Advanced healthcare materials, 14(2), e2402705.

Asadi Tokmedash M, et al. (2025) Multiscale Hybrid Surface Topographies Orchestrate Immune Regulation, Antibacterial Defense, and Tissue Regeneration. Advanced healthcare materials, e02451.

Mosialou I, et al. (2025) A niche driven mechanism determines response and a mutation-independent therapeutic approach for myeloid malignancies. Cancer cell, 43(6), 1007.

Massani MB, et al. (2025) Thiolated Hyaluronic Acid: A Gateway for Targeted Killing of Staphylococcus aureus on the Race for Surface Colonization. Advanced healthcare materials, e02890.

Thammarakcharoen F, et al. (2024) Process Development for Fabricating 3D-Printed Polycaprolactone-Infiltrated Hydroxyapatite Bone Graft Granules: Effects of Infiltrated Solution Concentration and Agitating Liquid. Biomedicines, 12(9).

Kumar V, et al. (2024) A mechanobiological model of bone metastasis reveals that mechanical stimulation inhibits the pro-osteolytic effects of breast cancer cells. Cell reports, 43(5), 114043.

Shen C, et al. (2024) Interaction between p21-activated kinase 4 and ??-catenin as a novel pathway for PTH-dependent osteoblast activation. Journal of cellular physiology, 239(6), e31245.

Ito K, et al. (2023) Osteoblast-derived extracellular vesicles exert osteoblastic and tumor-suppressive functions via SERPINA3 and LCN2 in prostate cancer. Molecular oncology, 17(10), 2147.

Lu K, et al. (2022) Defects in a liver-bone axis contribute to hepatic osteodystrophy disease progression. Cell metabolism, 34(3), 441.

Wu YH, et al. (2022) Optimization and Characterization of a Bone Culture Model to Study Prostate Cancer Bone Metastasis. Molecular cancer therapeutics, 21(8), 1360.

Yu F, et al. (2022) Identification and characterization of NFATc1+ skeletal stem cells in bone regeneration. Cell reports, 41(6), 111599.

Hojo H, et al. (2022) Runx2 regulates chromatin accessibility to direct the osteoblast program at neonatal stages. Cell reports, 40(10), 111315.

Lu P, et al. (2021) Overexpression of FGF2 delays the progression of osteonecrosis of the femoral head activating the PI3K/Akt signaling pathway. Journal of orthopaedic surgery and research, 16(1), 613.

Farhat T, et al. (2021) Inhibition of the catalytic subunit of DNA-dependent protein kinase (DNA-PKcs) stimulates osteoblastogenesis by potentiating bone morphogenetic protein 2 (BMP2) responses. Journal of cellular physiology, 236(2), 1195.

Holmes G, et al. (2020) Integrated Transcriptome and Network Analysis Reveals Spatiotemporal Dynamics of Calvarial Suturogenesis. Cell reports, 32(1), 107871.