

Resource Summary Report

Generated by [RRID](#) on Sep 2, 2026

MLO-Y4

RRID:CVCL_M098

Type: Cell Line

Proper Citation

RRID:CVCL_M098

Cell Line Information

URL: https://web.expasy.org/cellosaurus/CVCL_M098

Proper Citation: RRID:CVCL_M098

Description: Cell line MLO-Y4 is a Transformed cell line with a species of origin Mus musculus (Mouse)

Sex: Sex unspecified

Defining Citation: [PMID:9421234](#), [PMID:10084404](#), [PMID:12412815](#), [PMID:16738320](#), [PMID:22130923](#)

Comments: Miscellaneous: STR profile from personal communication of Yi, Lan., Characteristics: Useful to study effects of fluid flow and substrate stretching on activation of osteocyte-specific signaling pathways (Kerafast=EKC002)., Group: Space-flown cell line (cellonaut)., Group: Patented cell line.

Category: Transformed cell line

Organism: Mus musculus (Mouse)

Name: MLO-Y4

Synonyms: MLOY4, Murine Long bone Osteocyte-Y4

Cross References: BTO:BTO_0005489, EFO:EFO_0005394, GEO:GSM1520095, GEO:GSM1520096, GEO:GSM1520097, GEO:GSM1520098, GEO:GSM1520099, GEO:GSM1520100, GEO:GSM1520101, GEO:GSM1520102, GEO:GSM1520103, GEO:GSM1520104, GEO:GSM1520105, GEO:GSM1520106, Kerafast:EKC002, Lonza:166, Ubigene:YC-C037, Wikidata:Q54905979

ID: CVCL_M098

Record Creation Time: 20220427T220812+0000

Ratings and Alerts

No rating or validation information has been found for MLO-Y4.

Warning: Discontinued: ATCC; CRL-12161

Miscellaneous: STR profile from personal communication of Yi, Lan., Characteristics: Useful to study effects of fluid flow and substrate stretching on activation of osteocyte-specific signaling pathways (Kerafast=EKC002)., Group: Space-flown cell line (cellonaut)., Group: Patented cell line.

Data and Source Information

Source: [Cellosaurus](#)

Usage and Citation Metrics

We found 150 mentions in open access literature.

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

Guo Y, et al. (2025) Mechanical Loading Induces NRF2 Nuclear Translocation to Epigenetically Remodel Oxidative Stress Defense in Osteocytes. *Antioxidants* (Basel, Switzerland), 14(3).

Anloague A, et al. (2025) A novel CCL3-HMGB1 signaling axis regulating osteocyte RANKL expression in multiple myeloma. *Haematologica*, 110(4), 952.

Seaman K, et al. (2025) Osteocytes under Mechanical Loading Regulate PC-3 Cancer Cell-Mineral Interactions during Early-Stage Metastasis to Bone. *Advanced biology*, 9(12), e00379.

Riquelme MA, et al. (2024) Antibody-activation of connexin hemichannels in bone osteocytes with ATP release suppresses breast cancer and osteosarcoma malignancy. *Cell reports*, 43(7), 114377.

Yee CS, et al. (2024) The osteocytic actions of glucocorticoids on bone mass, mechanical properties, or perilacunar remodeling outcomes are not rescued by PTH(1-34). *Frontiers in endocrinology*, 15, 1342938.

Hua R, et al. (2024) Connexin hemichannels drive lactation-induced osteocyte acidification and perilacunar-canalicular remodeling. *Cell reports*, 43(7), 114363.

Zhang B, et al. (2024) Protocol for evaluating the effects of large gradient high magnetic fields on osteocyte function. *STAR protocols*, 5(3), 103186.

Yuan J, et al. (2023) PINK1-mediated mitophagy contributes to glucocorticoid-induced cathepsin K production in osteocytes. *Journal of orthopaedic translation*, 38, 229.

Puts R, et al. (2023) Focused Low-Intensity Pulsed Ultrasound (FLIPUS) Mitigates Apoptosis of MLO-Y4 Osteocyte-like Cells. *Bioengineering (Basel, Switzerland)*, 10(3).

Zhang S, et al. (2023) Astragalus polysaccharide ameliorates steroid-induced osteonecrosis of the femoral head by regulating miR-200b-3p-mediated Wnt/ β -catenin signaling pathway via inhibiting SP1 expression : Astragalus polysaccharide regulates SONFH via SP1. *BMC musculoskeletal disorders*, 24(1), 369.

Hasegawa T, et al. (2023) Evocalcet Rescues Secondary Hyperparathyroidism-driven Cortical Porosity in CKD Male Rats. *Endocrinology*, 164(4).

Aobulikasimu A, et al. (2023) SIRT6-PAI-1 axis is a promising therapeutic target in aging-related bone metabolic disruption. *Scientific reports*, 13(1), 7991.

Jiao Z, et al. (2023) SOST gene suppression stimulates osteocyte Wnt/ β -catenin signaling to prevent bone resorption and attenuates particle-induced osteolysis. *Journal of molecular medicine (Berlin, Germany)*, 101(5), 607.

Wei L, et al. (2023) Resveratrol protects osteocytes against oxidative stress in ovariectomized rats through AMPK/JNK1-dependent pathway leading to promotion of autophagy and inhibition of apoptosis. *Cell death discovery*, 9(1), 16.

Liu X, et al. (2023) Glucose- and glutamine-dependent bioenergetics sensitize bone mechanoreponse after unloading by modulating osteocyte calcium dynamics. *The Journal of clinical investigation*, 133(3).

Shimizu N, et al. (2023) Tension force causes cell cycle arrest at G2/M phase in osteocyte-like cell line MLO-Y4. *Heliyon*, 9(2), e13236.

Wang Z, et al. (2023) Inflammation produced by senescent osteocytes mediates age-related bone loss. *Frontiers in immunology*, 14, 1114006.

Luo Y, et al. (2023) CHIR99021-Treated Osteocytes with Wnt Activation in 3D-Printed Module Form an Osteogenic Microenvironment for Enhanced Osteogenesis and Vasculogenesis. *International journal of molecular sciences*, 24(6).

Zhang B, et al. (2023) Magneto-mechanical stimulation modulates osteocyte fate via the ECM-integrin-CSK axis and wnt pathway. *iScience*, 26(8), 107365.

Donmez BO, et al. (2022) Calcium²⁺-dependent activation of PHEX, MEPE and DMP1 in osteocytes. *Molecular medicine reports*, 26(6).