

A Novel Antibody Treatment of Drug-induced, Age- and Disease-Related Bone Loss

Tech ID: 33868 / UC Case 2025-403-0

ABSTRACT

Researchers at the University of California, Davis have developed a technology that targets CD147 to significantly improve bone health and treat musculoskeletal diseases without the side effects of current therapies.

FULL DESCRIPTION

This technology encompasses an approach that focuses on the pathological shift in skeletal stem cells (SSCs) caused by aging, steroid use, and disease, leading to impaired regeneration and decreased bone health. By identifying CD147 as a critical factor in these processes, the technology uses functional antibody treatment to block aberrant CD147 activity, rescuing skeletal phenotypes and offering a superior, side-effect-free alternative to existing bone loss treatments.

APPLICATIONS

- ▶ Treatment of osteoporosis and other musculoskeletal diseases.
- ▶ Preventative therapy for individuals at risk of bone health deterioration.
- ▶ Alternative treatment for glucocorticoid-induced osteoporosis and osteonecrosis.
- ▶ Potential application in improving fracture healing outcomes

FEATURES/BENEFITS

- ▶ Targets the underlying cause of stem cell-based bone health deterioration.
- ▶ Provides a side-effect-free alternative to current osteoporosis therapies.
- ▶ Applicable through systemic injections, simplifying the treatment process.
- ▶ Effectively treats glucocorticoid-induced osteoporosis and osteonecrosis.
- ▶ Improves bone mass and remodeling in aged models, demonstrating broad potential.
- ▶ Addresses limitations and side effects of current bone anabolic and anti-bone resorptive therapies.
- ▶ Restores regeneration and improves bone health by correcting pathological shifts in SSCs.
- ▶ Enhances healing outcomes in fractures and other bone-related injuries.

PATENT STATUS

Patent Pending

RELATED MATERIALS

CONTACT

Raj Gururajan
rgururajan@ucdavis.edu
tel: 530-754-7637.



INVENTORS

- ▶ Ambrosi, Thomas
- ▶ Chen, Kun
- ▶ Lane, Nancy E.
- ▶ Morales, Daniel

OTHER INFORMATION

KEYWORDS

anti-bone resorptive therapy, bone anabolic, bone health, bone regeneration, CD147, glucocorticoid-induced osteoporosis, musculoskeletal diseases, osteonecrosis, osteoporosis, skeletal stem cells

CATEGORIZED AS

- ▶ **Medical**
 - ▶ Disease: Musculoskeletal Disorders

▶ [Basigin links altered skeletal stem cell lineage dynamics with glucocorticoid-induced bone loss and impaired angiogenesis - 08/15/2025](#)

▶ [Therapeutics](#)

RELATED CASES

2025-403-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

▶ [Anti-WISP2/CCN5 Therapy Against Bone Loss](#)

University of California, Davis

Technology Transfer Office

1 Shields Avenue, Mrak Hall 4th Floor,
Davis, CA 95616

Tel:

530.754.8649

techtransfer@ucdavis.edu

<https://research.ucdavis.edu/technology-transfer/>

Fax:

530.754.7620

© 2024 - 2025, The Regents of the University of

California

[Terms of use](#)

[Privacy Notice](#)