RON KINASE INHIBITOR FOR PREVENTING AND TREATING BONE LOSS

Methods of treating cancer-related osteoporosis by inhibiting RON kinase.

TECHNOLOGY SUMMARY
Over 70 percent of breast cancer patients develop bone metastasis, which causes severe pain, nerve compression, hypercalcemia, and debilitating bone fractures. Development and growth of bone metastases depend on the interactions between cells in the bone-tumor microenvironment that increase survival and proliferation of tumor cells. Current treatment options for osteolytic bone metastasis treatment are limited to bisphosphonates and expensive RANKL-blocking antibody therapy with many adverse side effects.

A new, cost-effective treatment method utilizes a novel mechanism of action involving a RON kinase that activates macrophage-stimulating protein (MSP) which is a key driver of osteoclast activation *in vivo*. The pathway is independent of RANKL signaling. Inhibiting RON prevents both the development of osteolysis and the progression of existing osteolysis. Inhibiting this method also shows potential for treating bone loss due to osteoporosis.

FEATURES AND BENEFITS
- Reduces cost and side effects of osteolytic bone metastasis and osteoporosis treatment.
- Prevents development and progression of osteolysis.
- Enables a novel mechanism for treating bone loss, independent of the RANK pathway.
- Demonstrates potential as a combination therapy.

RECENT PUBLICATIONS
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