Identification of a molecule linking bone loss and bone formation

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Bone integrity requires skeletal remodeling, which involves both bone formation and resorption. It has been previously shown that the formation of new bone is triggered by degradation of older bone. However, it is unknown how these two processes coordinate for skeletal maintenance.

n this issue of the *Journal of Clinical Investigation*, Sunao Takeshita and colleagues at the National Center for Geriatrics and Gerontology identify a protein, CTHRC1 that is secreted by bone adsorbing cells (osteoclasts) and helps initiate bone formation.

The authors found that CTHRC1 secretion in bone coincided with bone remodeling and an increase in bone-producing cells. Mice with osteoclasts that did not produce CTHRC1 had lower bone mass than normal animals.

This group also found that as animals aged, *Cthrch1* expression decreased, suggesting a role for this molecule in age related bone loss.

Together these data imply CTHRC1 as a target for treatment and diagnosis of bone diseases such as osteoporosis.

More information: Osteoclast-secreted Cthrc1 in the coupling of bone resorption to formation, *J Clin Invest*. doi:10.1172/JCI69493

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