## This week in therapeutics

| Indication | Target/marker/ pathway | Summary | Licensing status | Publication and contact information |
|---|---|---|---|---|
| **Musculoskeletal disease** | | | | |
| Osteoporosis | Platelet derived growth factor BB (PDGF-BB); cathepsin K (CTSK) | *In vitro* and mouse studies suggest increasing PDGF-BB levels could help treat osteoporosis. In mice, a CTSK inhibitor or knockout of *Ctsk* enhanced Pdgf-bb secretion and led to increased bone and vessel formation compared with vehicle or wild-type *Ctsk* expression. In a mouse model of postmenopausal osteoporosis, local Pdgf-bb injection or systemic Ctsk inhibition promoted bone and blood vessel formation compared with vehicle control injection. Next steps could include screening for additional compounds that increase PDGF-BB production.<br>Merck & Co. Inc. and Quest Diagnostics Inc. have the CTSK inhibitor odanacatib in Phase III testing to treat osteoporosis.<br>At least two other companies have CTSK inhibitors in Phase I testing or earlier to treat osteoporosis.<br><br>*SciBX* 7(43); doi:10.1038/scibx.2014.1268<br>Published online Nov. 6, 2014 | Patent and licensing status unavailable | Xie, H. *et al. Nat. Med.*; published online Oct. 5, 2014; doi:10.1038/nm.3668<br>**Contact:** Xu Cao, The Johns Hopkins University School of Medicine, Baltimore, Md.<br>e-mail: xcao11@jhmi.edu<br>**Contact:** Eryuan Liao, Central South University, Changsha, China<br>e-mail: eyliao@21cn.com<br>**Contact:** Xianghang Luo, same affiliation as above<br>e-mail: xianghangluo@hotmail.com |