Strontium ranelate (SR) prevents deterioration of bone tissue microarchitecture in osteoporosis. When used clinically to prevent osteoporosis, SR stimulates pre-osteoblast replication and decreases osteoclast activity, increasing the ultimate load of intact bones, making them stiffer, harder, and tougher. In vitro, SR inhibited activation of NF-κB, promoting osteoblast differentiation and suppressing osteoclast formation. In other cellular models, SR stimulates phosphorylation of ERK and increases expression of osteocalcin and bone morphogenetic protein 2 (BMP2), potentially through activation of calcium-sensing receptor CaR.

References

