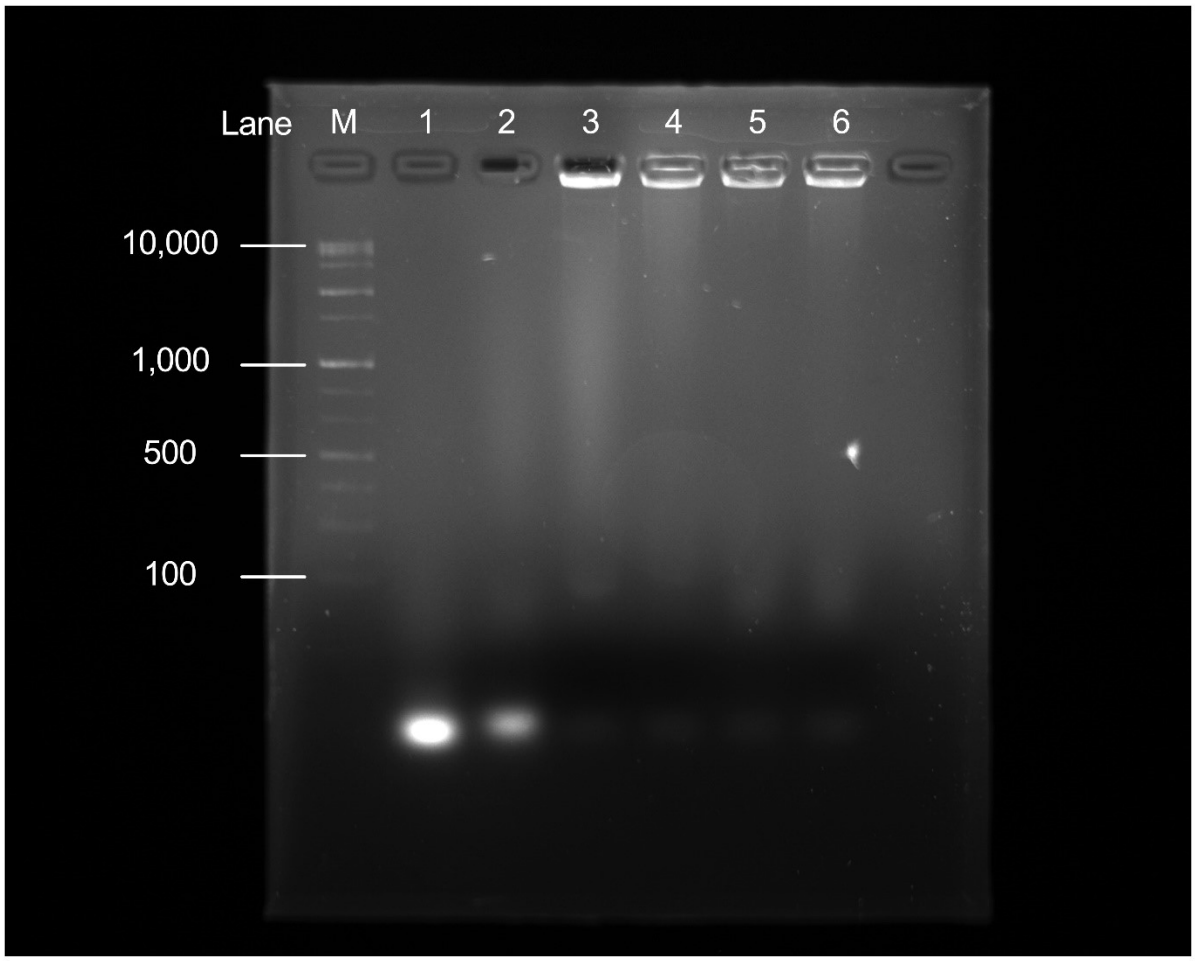
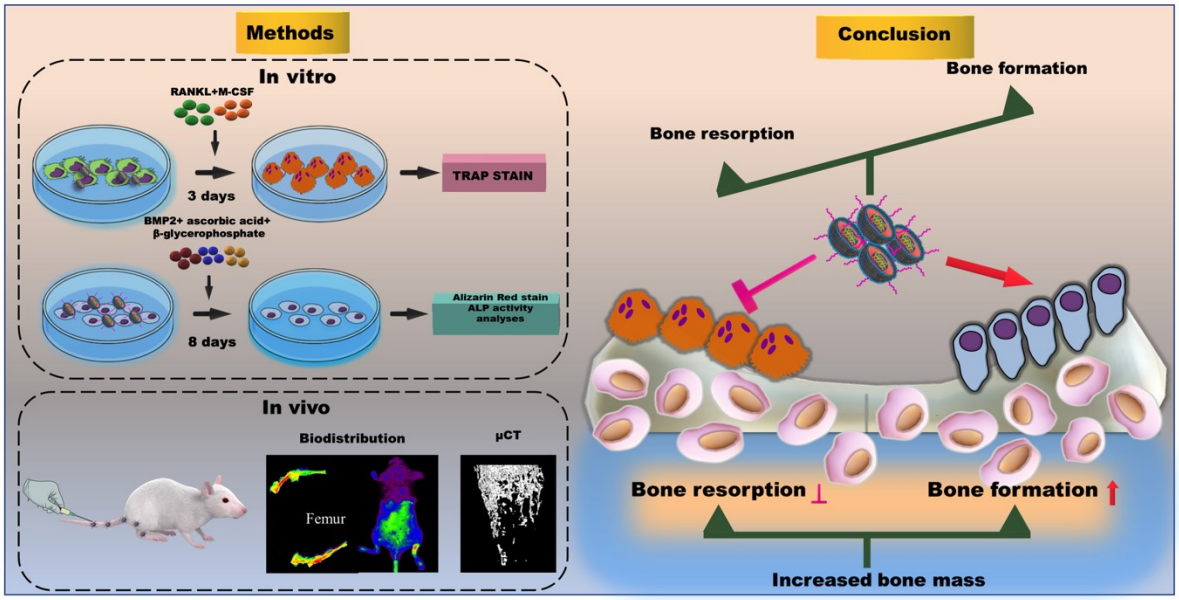
Electronic Supplementary Material (ESI) for Biomaterials Science.

Supplementary data

Nano-formulations for bone-specific delivery of siRNA for CrkII silencing-induced simultaneous regulation of bone formation and resorption to maximize therapeutic potential for bone-related diseases



Supplementary information 1. Raw images of agarose gel electrophoresis showing migration profile of siRNA and $(AspSerSer)_6$-liposomes in Fig. 1C. Lane 1: *siCrkII*, lane 2: negative control siRNA (NC), lane 3: liposome-*siCrkII*, lane 4: liposome-NC, lane 5: $(AspSerSer)_6$-liposome-*siCrkII*, lane 6: $(AspSerSer)_6$-liposome-NC. M: marker.



Supplementary information 2. Graphical abstract. (AspSerSer)6-liposome-siCrkII maintained its gene silencing ability in both osteoclasts and osteoblasts in vitro and significantly reduced osteoclast formation while increased osteoblast differentiation in vitro. Fluorescence image analyses exhibited that (AspSerSer)6-liposome-siCrkII was dominantly presented in bone among other tissues even when systemically administrated. Microcomputed-tomography revealed that bone loss induced by RANKL administration was recovered by systemic administration of (AspSerSer)6-liposome-siCrkII. Collectively, (AspSerSer)6-liposome-siCrkII is a promising therapeutic strategy for the development of treatment for bone diseases, and it overcomes adverse effects derived from ubiquitous expression via bone-specific delivery of siRNA.