Methods are disclosed herein for increasing bone mass and strength or bone fracture healing in a subject. The methods include administering to the subject a therapeutically effective amount of multipotent stem cells, wherein each multipotent stem cell is transformed with a recombinant nucleic acid molecule comprising a heterologous promoter operably linked to a nucleic acid encoding platelet derived growth factor (PDGF) B, and wherein the multipotent stem cells express a sufficient amount of PDGFB to increase bone mass and strength or bone fracture healing. A lentiviral vector also is disclosed that includes a phosphoglycerate kinase-1 (PGK) promoter operably linked to a nucleic acid encoding PDGFB.