Strain	**FGF-2LMWko** (FGF-2tm2Doe)	**FGF-2HMWko** (FGF-2tm3Doe)	**FGF-2HMWtg** Overexpressed human 24 kDa driven by PGK promoter	**FGF-2LMWtg** Overexpressed rat 18 kDa driven by RSV promoter
Ischemia-reperfusion injury models	♂♀ (*ex vivo*) ↑ phosphorylated JNK, MKK4, MKK7 and c-Jun protein level ↓ recovery of contractile heart function partly improved by inhibition of the JNK pathway ↑ apoptosis (caspase 3 and TUNEL⁺ cells) after DMSO treatment (Liao, Porter et al. 2007)[1]	♂♀ ↑ recovery of contractile and diastolic function (Liao, Bodmer et al. 2010)[2] ♂♀ ↑ postischemic recovery of contractile function ↑ levels of phosphorylated PKCα at ischemia onset ↑ levels of myofilament PKCα in ischemia ↓ levels of myofilament PKCδ in ischemia ↑ phosphorylation of troponin I and T in ischemia and early reperfusion ↑ levels of phosphorylated PKCε at early reperfusion ↑ activity of actomyosin MgATPase in reperfusion ↑ levels of myofilament PKCε after reperfusion ↑ levels of myofilament PKCδ after reperfusion ↓ recovery by PKCε inhibition ↓ PKCα dependent myofilament sensitivity against calcium **FGF-2^{tm3Doe} x PKCαko** ↓ cardioprotection ↑ systolic and diastolic dysfunction ↑ amount of PKCε expression (Manning, Perkins et al. 2013)[3]	♂♀ (*ex vivo*) ↓ recovery of contractile and relaxation function (Liao, Bodmer et al. 2010)[2]	♂♀ (*ex vivo*) ↑ myocyte viability (↓ LDH activity) after reperfusion (Sheikh, Sontag et al., 2000)[4]
Isoproterenol model of cardiac hypertrophy	♂ **following treatment** ↑ fibrosis ↑ Col1 and α-SMA protein level ♀ **following treatment** ↑ but attenuated cardiac hypoplasia (↓ H/B ratio) (Nusayr, Sadideen et al. 2013)[5]	♂ **following treatment** ↑ but attenuated cardiac hypertrophy (↑ H/B ratio) ↓ fibrosis ↑ α-SMA and ANF expression ♀ **following treatment** ↓ cardiac hypertrophy (Nusayr, Sadideen et al. 2013)[5]		
Doxorubicin model of acute cardiac injury		♂♀ **following treatment** Sex independent cardioprotection (no changes in any echocardiographic parameters or Bnip3 protein level) (Koleini, Santiago et al. 2019)[6]		

Supplement Table S1. Evaluation of male (♂) and female (♀) FGF-2 isoform-specific mouse mutants in ischemic-reperfusion injury, isoproterenol model of cardiac hypertrophy and doxorubicin model of acute cardiac injury. Results were displayed as increased (↑) or decreased (↓) for either FGF-2 isoform-specific ko mice (FGF-2LMWko and FGF-2HMWko), or mice additionally overexpressing rat FGF-2LMW (FGF-2LMWtg) or human 24 kDa FGF-2HMW (FGF-2HMWtg) compared to wildtype littermates.

α-SMA, α-smooth-muscle actin; ANF, atrial natriuretic factor; Col1a1, type 1 collagen; DMSO, dimethyl sulfoxid; FGF-2, fibroblast growth factor 2; JNK, c-Jun N-terminal kinase; ko, knock out; H/B, heart to body weight ratio; HMW, high molecular weight; LDH, lactate dehydrogenase; LWW, low molecular weight; MAPK, mitogen activated protein kinase; MKK, Mitogen-activated protein kinase kinase; PKC, protein kinase C; TUNEL, TdT-mediated dUTP-biotin nick end labeling; +, positive.

Strain	**FGF-2LMWko** (FGF-2^{tm2Doe})	**FGF-2HMWko** (FGF-2^{tm3Doe})	**FGF-2HMWtg** Overexpressed human 22, 23, 24 kDa driven by Col3.6 promoter	**FGF-2LMWtg** Overexpressed human 18 kDa driven by Col3.6 promoter
Phenotype	♂ ↓ vertebral bone mineral density and content ↑ sFRP1 protein levels in trabecular bones (Xiao, Liu et al. 2009)[7]	♂ ↑ whole body bone mineral density and content ↑ vertebral, femoral bone mineral density and content ↑ femoral bone volume, trabecular thickness, number (cortical bone area, thickness, cortical mask) ↓ femoral trabecular spacing ↑ connective tissue density ↓ cortical porosity, bone resorption (↓ osteoclast surface, number) ↑ bone formation in cortical periosteum, trabecular bone (↑ osteoblast surface, inter-label thickness, mineral apposition rate) ↑ tibial *Col1a1*, *Runx2*, *osterix*, *oc*, *op*, *Dmp1* gene expression ↓ femoral *Sost* gene expression ↓ serum sclerostin, protein levels ↓ tibial *Fgf-2*, *Fgf-23* gene expression (Homer-Bouthiette, Doetschman et al. 2014)[8]	♂ dwarfism, osteomalacia ↓ body weight ↓ whole body bone mineral density and content ↓ femoral bone length ↓ vertebral volume, bone mineral density and content ↓ femoral bone volume, trabecular number, thickness ↑ femoral trabecular spacing ↑ bone resorption (↑ osteoclast surface, number) ↓ bone formation (↓ osteoblast, mineralization surface, bone formation rate) ↓ tibial *Col1a1*, *Oc* gene expression ↑ tibial *Op*, *Mgp* gene expression ↓ serum phosphate ↑ serum PTH, CTX, FGF-23 ↑ tibial, femoral *Fgf-23, Phex* gene expression, protein levels ↑ renal *Fgfr-1c, Fgfr-3c, Klotho* gene expression ♂ **with continuous phosphate diet** ↑ body weight, bone mineral content, bone mineral density ↑ serum phosphate to a normal level ↑ serum FGF-23 (Xiao, Naganawa et al. 2010)[9] ♂ ↓ whole body bone mineral density and content ↓ femoral, tibia, vertebral bone mineral density and content ↓ serum phopshate ↑ serum FGF-23, PTH ↑ renal *Fgfr-3c* gene expression ↑ renal FGFR-1, FGFR-3, Klotho, C-Fos, activated ERK protein levels ↑ renal *Klotho, cFos, egr1* gene expression ↓ renal *Npt2* gene expression ↑ renal *Cyp24, Cyp27b1* gene expression ↓ renal Npt2 protein levels (Du, Xiao et al. 2017)[10]	♂ ↑ vertebral, tibial, femoral bone mineral density and content ↑ femoral bone volume, trabecular thickness, cortical bone area, thickness ↓ *sFRP1* gene expression, protein levels in trabecular bones ↑ *β-catenin* gene expression, protein levels (Xiao, Liu et al. 2009)[7] ♂ ↑ *Fgfr-1*, *Fgfr-2*, *oc*, *β-catenin* gene expression in calvaria bone ↓ *sFRP1* gene expression in calvaria bone ↑ calvarial inter-label thickness, mineral apposition rate (Xiao, Ueno et al. 2014)[11]

Strain	**FGF-2LMWko** (FGF-2^{tm2Doe})	**FGF-2HMWko** (FGF-2^{tm3Doe})	**FGF-2HMWtg** Overexpressed human 22, 23, 24 kDa driven by Col3.6 promoter	**FGF-2LMWtg** Overexpressed human 18 kDa driven by Col3.6 promoter
Phenotype			♂ dwarfism ↓ body weight, tail length ↓ whole body bone mineral density and content ↓ femoral bone mineral density, length ↓ vertebral bone mineral density ↓ serum phosphate ↑ serum FGF-23, PTH ↑ urinary phosphate level ↓ renal *Npt2* gene expression ↑ renal Klotho, activated renal ERK protein levels ↑ cortical porosity, trabecular spacing, osteoid volume ↓ cortical thickness, tissue ↓ endosteal/periosteal perimeter, subendosteal area ↓ mineralization of cortical bone area, metaphyseal cancellous bone volume, trabecular number ↑ osteoclast number, surface ↑ femoral *Fgfr-3c*, *Pthr1*, *Op*, *Fgf23*, *Mgp* gene expression (Xiao, Du et al. 2017)[12] ♀ ↓ body weight ↓ femoral, tibial, vertebral bone mineral density and content ↓ serum phosphate ↑ serum FGF-23, 1,25D ↑ urinary phosphate level ↑ renal FGFR-1, En-1, klotho protein levels ↑ renal *Klotho, Sostdc-1, En-1, Cyp24* gene expression ↑ activated renal ERK, Gsk-3β (Tr216) protein levels ↓ renal *Npt2*, *Akt* gene expression ↓ activated renal Gsk-3β (Ser9), active β-catenin and Akt protein levels (Du, Xiao et al. 2016)[13]	

Strain	**FGF-2LMWko** (FGF-2^{tm2Doe})	**FGF-2HMWko** (FGF-2^{tm3Doe})	**FGF-2HMWtg** Overexpressed human 22, 23, 24 kDa driven by Col3.6 promoter	**FGF-2LMWtg** Overexpressed human 18 kDa driven by Col3.6 promoter
			♀ ↓ body weight ↓ femoral, vertebral bone mineral density and content ↓ femur length, cortical density, mineral apposition rate ↑ cortical porosity ↓ femoral bone volume, trabecular number ↑ femoral trabecular spacing ↑ osteoid volume ↑ serum FGF-23, ALP ↓ serum phosphate, TNAP ↓ TNAP activity in osteocytes ↑ renal *Fgfr-1c*, *Fgfr-3* gene expression ↓ renal *Npt2a* gene expression ↑ tibia *Fgf-2*, *Fgfr-1c*, *Col1a1*, *Mgp*, *Dmp4*, *Phex*, *Mepe*, *Enpp1*, *SLc20a1* gene expression ↓ tibia *Dmp1*, *Rankl*, *Oc* gene expression ↑ femur cortical ERK, FGFR-1 protein levels (Xiao, Homer-Bouthiette et al. 2018)[14]	

Supplement table S2A. Extensive characterization of the bone related phenotype of adult FGF-2 isoform-specific mouse mutants in chronological order. All data of either FGF-2LMWko, FGF-2HMWko or mice additionally overexpressing human FGF-2LMW (FGF-2LMWtg) or FGF-2HMW (FGF-2HMWtg) were listed as increased (↑) or decreased (↓) compared to wt littermates. Whenever possible results were separated for male (♂) and female (♀) mice.

1,25D, 1,25-dihydroxyvitamin D; ALP, alkaline phosphatase; Col1a1, Type I collagen; CTX, c-terminal telopeptide of type 1 collagen; Cyp24, renal 25-hydroxyvitamin D 24-hydroxylase; Cyp27b1, renal 25-hydroxyvitamin D 1alpha-hydroxylase; Dmp, Dentin matrix phosphoprotein; Egr-1, early growth response-1 transcription factor; En-1, Engrailed-1; Enpp1, Ectonucleotide pyrophosphatase/phosphodiesterase family member 1; FGF, fibroblast growth factor; FGFR, fibroblast growth factor receptor; Gsk3β, Glycogen Synthase Kinase 3 Beta; HMW, high molecular weight; knock out; LWW, low molecular weight; Mepe, Matrix extracellular phosphoglycoprotein; Mgp, Matrix gla protein; Npt2, sodium phosphate co transporter; Oc, Osteocalcin; Op, Osteopontin; Phex, Phosphate-regulating neutral endopeptidase; PTH, Parathyroid hormone; PTHR1, parathyroid hormone 1 receptor; Runx2, runt-related transcription factor 2; sFRP-1, secreted frizzled receptor 1; Slc20a1, Sodium-dependent phosphate transporter 1; Sost, sclerostin; Sostdc-1, Sclerostin domain-containing-1; tg, transgene; TNAP, tissue nonspecific alkaline phosphatase.

Strain	**FGF-2LMWko** (FGF-2^{tm2Doe})	**FGF-2HMWko** (FGF-2^{tm3Doe})	**FGF-2HMWtg** Overexpressed human 22, 23, 24 kDa driven by Col3.6 promoter	**FGF-2LMWtg** Overexpressed human 18 kDa driven by Col3.6 promoter
Aging/Osteoarthritis	♂♀ ↑ OA in knee joints (flattening of tibial plateau, osteophyte formation) ♂ ↓ femoral, tibial bone volume, trabecular number, thickness ↑ femoral, tibial trabecular spacing ↓ proteoglycan content, cartilage thickness in knee joint ↑ tendonitis, arthritis ↑ MMP-13, ADAMTS-5, FGF-2, FGF-23, FGFR-1 protein levels in articular cartilages ↑ *Igf1, IL-1β, Bmp4, Hif1α, Bax, Fgf-2, Fgf-23, Fgfr-3 Vegf, Col10* gene expression in knee joints ↑ activated ERK protein levels in articular cartilage ↓ activated FGFR-3 in articular cartilage ↑ signs of OA following tibial loading (loss of proteoglycan content, thinning of subchondral bone) (Burt, Xiao et al. 2019)[15]	♂♀ no radiographical signs of OA in knee joints ♂ ↑ activated FGFR-3 protein levels in knees ↓ FGF-2 protein levels in articular cartilage (Burt, Xiao et al. 2019)[15]	♂ ↑ OA in knee joints (flattening of tibial plateau, osteophyte formation, femoral subchondral bone thinning, sclerotic bone development, narrowing of the patellofemoral space, loss of trabeculae, sclerosis of femur) ↓ epiphyseal bone volume density, trabecular thickness, number in femur, tibiae ↓ proteoglycan content, cartilage thickness in knee joint ↑ *MMP13, Col10, ADAMTS-5* gene expression in articular cartilages ↑ *Igf1, IL-1β, Bmp2, Bmp4, Hif1α, Bax, Sox9, Vegf* gene expression in knee joints ↑ FGF-23, FGFR-1 protein levels in knee joints ↓ mineralization of hypertrophic chondrocytes (Meo Burt, Xiao et al. 2016)[16] ♂ ↓ *Sost, Dkk1, Lrp6* gene expression in knee joints ↑*Wnt5a, Axin2, Lef1* gene expression in knee joints ↓ Sost, Lrp6 protein levels in knee joints ↑ Wnt7b, Wnt5a, Lrp5, Axin2, Gsk-3β, Lef1, nuclear β-catenin protein levels in knee joints ↑ *Col10, Mmp9, Mmp13* gene expression in femoral cartilage (Meo Burt, Xiao et al. 2018)[17] ♂♀ ↑ signs of OA in knee joints (flattening of tibial plateau, osteophyte formation, sclerosis) ↓ femoral, tibial bone volume, trabecular number, thickness ↓ proteoglycane content, cartilage thickness in knee joints ↑ cartilage calcification in knee cartilage ♂ ↑ *Fgfr-1c, Fgf-18, Col10, Mmp13* gene expression in knee joints ↓ *Fgfr-3c* gene expression in knee joints ↑ FGF-2, FGF-23, FGFR-1 protein level in subchondral bone ↑ MMP13, SOX9, ADAMTS-5 protein level in articular cartilages ↓ Dkk1 Lrp6, Sost protein levels in articular cartilage ↑ Wnt7b, Lrp5, Gsk-3β, active β-catenin, AXIN2 protein levels in articular cartilage (Xiao, Williams et al. 2020)[18]	♂ no radiographical signs of OA in knee joints (Meo Burt, Xiao et al. 2016)[16]

Supplement table S2B. Extensive characterization of the bone related phenotype developed through aging of FGF-2 isoform-specific male (♂) and female (♀) mouse mutants. All alterations through aging were listed for FGF-2LMWko, FGF-2HMWko, FGF-2LMWtg or FGF-2HMWtg mouse mutants given as increased (↑) or decreased (↓) compared to wt littermates

Adamts5, A disintegrin metalloproteinase with thrombospondin motifs 5; Bax, B-cell lymphoma 2 associated X, apoptosis regulator; BMP, Bone morphogenetic protein ; Col10, type 10 collagen; Dkk1, Dickkopf-Like Protein 1; FGF, fibroblast growth factor; FGFR, fibroblast growth factor receptor; Gsk3β, Glycogen Synthase Kinase 3 Beta; Hif1α, hypoxia inducible factor 1; HMW, high molecular weight; IL-1β, interleukin-1 β; Igf1, insulin like growth factor 1; ko, knock out; Lef1, Lymphoid Enhancer Binding Factor 1; LWW, low molecular weight; Lrp, low density lipoprotein receptor-related protein; Mmp, Matrix metallopeptidase; OA, Osteoarthritis; Sox9, Sex-determining region Y box 9; Sost, sclerostin; tg, transgene; Vegf, vascular endothelial growth factor; Wnt, wingless-type.

Strain	**FGF-2LMWtg** Overexpressed human 18 kDa driven by Col3.6 promoter
Fracture healing	**♂ calvarial defect model** ↑ healing of calvaria defect ↑ bone volume, formation ↑ healing after BMP-2 addition **additional BMP-2 treatment:** ↑ bone volume, mineral apposition rate ↑ healing of calvaria defects ↑ *Fgf-2, Bmp-2, Fgfr-1, Fgfr-2, Runx2, osterix, Oc, Lrp5, Wnt10b, β-catenin* gene expression in calvaria bone (Xiao, Ueno et al. 2014)[11] **♀ closed tibial fracture model** ↑ tibial fracture healing ↓ fracture callus expansion ↑ fracture callus remodeling process ↑ *Fgf-2* gene expression in callus osteoblasts, osteocytes ↓ *Fgf-18* gene expression ↑ *Fgfr-1, Fgfr-3* mRNA earlier through fracture healing process ↑ *Sox9* gene, protein expression in fracture callus ↓ C*ol2a1* gene, protein expression in fracture callus ↑ *Pdgfb, Pdgfd* gene, protein expression in fracture callus, earlier peak of *Pdgfc* gene, protein expression through healing ↑ *Col10, Mmp9* gene, protein expression earlier through fracture healing process ↑ *Vegf* mRNA, protein in bone marrow ↑ *Trap, cathepsin* gene, protein expression peaked earlier in osteoclasts, chondroclasts ↑ *Runx2, osterix, Oc* gene, protein expression peaked earlier in periosteum, osteoblasts (Hurley, Adams et al. 2016)[19]

Supplement table S2C. Evaluation of FGF-2LMWtg mice different models of fracture healing. Male (♂) and female (♀) mice were analyzed and results were displayed as increased (↑) or decreased (↓) compared to wt littermates.

BMP, Bone morphogenetic protein; Col, collagen; FGF, fibroblast growth factor; FGFR, fibroblast growth factor receptor; LWW, low molecular weight; Lrp, low density lipoprotein receptor-related protein; Mmp, Matrix metallopeptidase; Oc, Osteocalcin; Pdgf, Platelet-derived growth factor; Runx2, runt-related transcription factor 2; Sox9, Sex-determining region Y box 9; Trap, tartrate resistant acid phosphatase; Vegf, vascular endothelial growth factor; Wnt, wingless-type.

Strain	**FGF-2HMWtg** Overexpressed human 22, 23, 24 kDa driven by Col3.6 promoter	
FGF-23 antibody treatment	**Short-term treatment**	**Long-term treatment**
	♂ ↓ renal *Fgfr-3*, *klotho*, *egr1*, *c-fos* gene expression ↓ renal FGFR-1, FGFR-3 protein levels ↑ renal *Npt2a, Cyp24* gene expression ↑ serum phosphate, 1,25D ↓ urinary phosphate (Du, Xiao et al. 2017)[10] ♀ ↓ renal *Fgfr-1c*, *Fgfr-3c, Cyp24* gene expression ↑ renal *Npt2a, Cyp27b1,* gene expression ↑ serum phosphate, 1,25D ↓ urinary phosphate (Xiao, Homer-Bouthiette et al. 2018)[14]	♀ ↑ vertebral bone mineral content, density, femoral bone mineral content ↑ femoral bone length ↓ femoral cortical porosity, trabecular spacing ↑ femoral bone volume density, trabecular number, intralabel thickness ↑ femoral mineral apposition rate ↓ femoral mineralization defects ↓ femur cortical ERK, FGFR-1 protein levels ↓ tibia *Fgf-2* gene expression ↑ tibia *Fgfr-1c, Dmp4, Opg, Runx2, Col1a1, Oc, Opn, Phex, Mepe, Enpp1, Ank, Slc20a1* gene expression ↑ serum phosphate ↓ serum ALP ↑ serum TNAP ↓ urinary phosphate (Xiao, Homer-Bouthiette et al. 2018)[14] ♀ ↓ signs of OA in knee joints (flattening of tibial plateau, thinning of femoral subchondral bone, cartilage thickness) ↑ femoral bone volume, trabecular number, thickness ↓ femoral trabecular spacing ↑ articular cartilage thickness ↓ *Col10*, *Mmp9*, *Mmp13* gene expression in femoral cartilage ↓ MMP9, MMP13 protein levels in articular cartilage (Meo Burt, Xiao et al. 2018)[17]

Supplement table ~~S2C~~S2D. Effects following FGF-23 antibody treatment in male (♂) and female (♀) FGF-2HMWtg mice. All measurements were conducted 24 hours following single injection (short-term treatment) of a FGF23 neutralizing antibody (10 mg/kg) or after repeated treatments with the same dosage over six weeks (long-term treatment). Results were shown as increased (↑) or decreased (↓) compared to vehicle treated littermates.

1,25D, 1,25-dihydroxyvitamin D; ALP, alkaline phosphatase; Col10, Type 10 collagen; Cyp24, renal 25-hydroxyvitamin D 24-hydroxylase; Cyp27b1, renal 25-hydroxyvitamin D 1alpha-hydroxylase; Dmp, Dentin matrix phosphoprotein; Egr-1, early growth response-1 transcription factor; En-1, Engrailed-1; Enpp1, Ectonucleotide pyrophosphatase/phosphodiesterase family member 1; FGF, fibroblast growth factor; FGFR, fibroblast growth factor receptor; HMW, high molecular weight; knock out; LWW, low molecular weight; Mepe, Matrix extracellular phosphoglycoprotein; Mmp, Matrix metallopeptidase; Npt2, sodium phosphate co transporter; Oc, Osteocalcin; Op, Osteopontin; Phex, Phosphate-regulating neutral endopeptidase; PTH, Parathyroid hormone; Runx2, runt-related transcription factor 2; Slc20a1, Sodium-dependent phosphate transporter 1; tg, transgene; TNAP, tissue nonspecific alkaline phosphatase.

Strain	**FGF-2HMWtg** Overexpressed human 22, 23, 24 kDa driven by Col3.6 promoter	
FGFR Inhibitor NVP-BGJ398	**Short-term treatment**	**Long-term treatment**
	♀ ↓ renal FGFR-1, Sostdc-1, En-1, klotho protein levels ↓ activated renal ERK, β-catenin, Gsk-3b (Tyr216) protein levels ↑ renal *Npt2a* gene expression, protein levels ↑ renal activated Gsk-3b (Ser 9), active β-catenin, Akt protein levels ↑ renal *Cyb24, Akt, b-catenin, Cyp27b1* gene expression ↓ renal *Sostdc-1, En-1* gene expression ↑ serum phosphate, PTH, 1,25D, FGF-23, Klotho ↓ urinary phosphate (Du, Xiao et al. 2016)[13] ♂ ↑ femoral bone mineral density ↓ femoral *Fgf-23* gene expression ↑ renal *Npt2* gene expression ↑ serum phosphate, αKlotho, 1,25D ↓ serum creatinine, FGF-23 ↓ urinary phosphate (Xiao, Du et al. 2017)[12]	♂ ↓ dwarfism ↓ body weight ↑ tail length, femoral trabecular thickness, density ↓ femoral, excised vertebrae bone mineral density ↓ femoral *Fgfr-3c* gene expression ↑ femoral *Fgfr-1c, Mepe, Op, Dmp1, Bsp, Pthr1* gene expression ↓ disorganized growth of femoral plates, trabecular spacing ↑ bone formation rate, osteoblast activity ↑ femoral osteoclast number, surface ↑ integrity of femoral cortical bone ↑ endosteal, periosteal perimeter, subendosteal area ↓ cortical porosity ↑ cortical thickness, tissue ↑ activated renal Npt2 protein levels ↓ activated renal ERK protein levels ↑ serum phosphate, FGF-23 ↑ urinary phosphate (Xiao, Du et al. 2017)[12] ♂♀ ↓ flattened tibia plateau, narrowing of joint space, osteophytes, uneven joint surface ↑ cartilage thickness in knee joint ↓ cartilage calcification in knee joint ↓ irregular shape, thinning of subchondral bone ♂ ↑ femoral trabecular thickness, bone volume ↓ *Mmp13*, *Sox9*, *ADAMTS-5* gene expression in articular cartilages ↓ *Fgf-18*, *Col10*, *Fgfr-3c* gene expression in knees ↓ activated FGFR-1, Gsk3b, β-catenin, Lrp5 protein levels in articular cartilage ↓ FGF-23, Axin2, Wnt7b protein levels in articulate cartilage ↑ Dkk1 protein levels in articulate cartilage ↑ Sost protein levels in subchondral bone of knee joints ↓ serum FGF-23 (Xiao, Williams et al. 2020)[18]

Supplement table S2D~~S2D~~S2E. Effects following administration of the FGFR inhibitor NVP-BGJ398 in male (♂) and female (♀) FGF-2HMWtg mice. All measurements were conducted 24 hours following single oral administration of the FGFR inhibitor NVP-BGJ398 with 50 mg/kg (short-term treatment) or following daily subcutaneous injection of the same antibody (2 mg/kg) for at least six weeks (long-term treatment). Results were shown as increased (↑) or decreased (↓) compared to vehicle treated littermates.

1,25D, 1,25-dihydroxyvitamin D; ALP, alkaline phosphatase; Bsp, bone sialoprotein; Col10, Type 10 collagen; Cyp24, renal 25-hydroxyvitamin D 24-hydroxylase; Cyp27b1, renal 25-hydroxyvitamin D 1alpha-hydroxylase; Dkk1, Dickkopf-Like Protein 1; Dmp, Dentin matrix phosphoprotein; Egr-1, early growth response-1 transcription factor; En-1, Engrailed-1; Enpp1, Ectonucleotide pyrophosphatase/phosphodiesterase family member 1; FGF, fibroblast growth factor; FGFR, fibroblast growth factor receptor; Gsk3β, Glycogen Synthase Kinase 3 Beta; HMW, high molecular weight; knock out; LWW, low molecular weight; Mepe, Matrix extracellular phosphoglycoprotein; Mmp, Matrix metallopeptidase; Npt2, sodium phosphate co transporter; Oc, Osteocalcin; Op, Osteopontin; Phex, Phosphate-regulating neutral endopeptidase; PTH, Parathyroid hormone; Pthr1, parathyroid hormone 1 receptor; Runx2, runt-related transcription factor 2; Slc20a1, Sodium-dependent phosphate transporter 1; Sost, sclerostin; tg, transgene; TNAP, tissue nonspecific alkaline phosphatase; Wnt, wingless-type.

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