

Table S1 Changes from baseline to 12 months of denosumab treatment in BMD at the lumbar spine, femoral neck, and total hip in all patients

	Baseline	12 months	P-value	Percent changes from baseline
Lumbar spine BMD (g/cm ²)	0.84 (0.76–0.94)	0.87 (0.80–0.98)	<0.001	4.44 (1.71–7.76)
Femoral neck BMD (g/cm ²)	0.61 (0.56–0.66)	0.64 (0.58–0.69)	<0.001	3.71 (1.38–6.89)
Total hip BMD (g/cm ²)	0.67 (0.59–0.71)	0.69 (0.62–0.76)	<0.001	4.03 (1.94–6.87)

Data are expressed as median (interquartile range). BMD, bone mineral density

Table S2 Changes from baseline to 12 months of denosumab treatment in BMD at the lumbar spine, femoral neck, and total hip in men and women

	Men (N = 13)			Women (N = 47)		
	Baseline	12 months	P-value	Baseline	12 months	P-value
Lumbar spine BMD (g/cm ²)	0.99 (0.92–1.09)	1.02 (0.95–1.11)	0.011	0.82 (0.75–0.89)	0.85 (0.80–0.94)	<0.001
Femoral neck BMD (g/cm ²)	0.67 (0.64–0.69)	0.69 (0.65–0.71)	0.059	0.60 (0.56–0.64)	0.62 (0.58–0.67)	<0.001
Total hip BMD (g/cm ²)	0.69 (0.67–0.76)	0.75 (0.71–0.78)	0.002	0.65 (0.58–0.70)	0.67 (0.61–0.71)	<0.001

Data are expressed as median (interquartile range). BMD, bone mineral density

Table S3 Changes from baseline to 12 months of denosumab treatment in BMD at the lumbar spine, femoral neck, and total hip in patients aged < 65 years and ≥ 65 years

	Age < 65 years (N = 11)			Age ≥ 65 years (N = 49)		
	Baseline	12 months	P-value	Baseline	12 months	P-value
Lumbar spine BMD (g/cm ²)	0.84 (0.77–0.94)	0.87 (0.82–0.96)	0.005	0.83 (0.76–0.97)	0.87 (0.80–0.99)	<0.001
Femoral neck BMD (g/cm ²)	0.64 (0.61–0.67)	0.66 (0.63–0.74)	0.029	0.60 (0.56–0.65)	0.63 (0.58–0.69)	<0.001
Total hip BMD (g/cm ²)	0.67 (0.60–0.73)	0.69 (0.63–0.78)	0.003	0.67 (0.58–0.70)	0.69 (0.62–0.75)	<0.001

Data are expressed as median (interquartile range). BMD, bone mineral density

Table S4 Changes from baseline to 12 months of denosumab treatment in BMD at the lumbar spine, femoral neck, and total hip in patients with and without liver cirrhosis

	LC (-) (N = 35)			LC (+) (N = 25)		
	Baseline	12 months	P-value	Baseline	12 months	P-value
Lumbar spine BMD (g/cm ²)	0.83 (0.75–0.93)	0.85 (0.80–0.96)	<0.001	0.89 (0.78–1.05)	0.94 (0.82–1.07)	<0.001
Femoral neck BMD (g/cm ²)	0.61 (0.58–0.67)	0.64 (0.61–0.69)	<0.001	0.58 (0.55–0.65)	0.63 (0.57–0.68)	<0.001
Total hip BMD (g/cm ²)	0.67 (0.59–0.71)	0.69 (0.62–0.76)	<0.001	0.65 (0.57–0.69)	0.68 (0.59–0.77)	<0.001

Data are expressed as median (interquartile range). BMD, bone mineral density; LC, liver cirrhosis

Table S5 Time-course changes in the levels of bone turnover/quality markers and biochemical tests during the 12-month study period

	Baseline	1 months	3 months	6 months	12 months
AST (U/L)	26 (20–28)	23 (20–30)	25 (21–32)	25 (22–30)	25 (22–30)
ALT (U/L)	15 (12–24)	16 (12–21)	17 (12–23)	15 (12–21)	16 (12–23)
ALP (U/L)	283 (235–332)	270 (216–295)	189 (156–245) ^a	192 (158–246) ^a	197 (149–249) ^a
GGT (U/L)	24 (17–40)	23 (17–34)	26 (18–39)	26 (18–38)	25 (17–42)
Total bilirubin (mg/dL)	0.7 (0.5–0.9)	0.6 (0.5–0.8)	0.6 (0.5–0.9)	0.6 (0.4–0.7)	0.6 (0.4–0.7)
Albumin (g/dL)	4.1 (3.9–4.4)	4.0 (3.9–4.3)	4.3 (3.9–4.4)	4.1 (3.9–4.4)	4.1 (3.8–4.3)
Creatinine (mg/dL)	0.7 (0.6–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.9)	0.8 (0.6–0.9)	0.8 (0.6–0.9)
eGFR (mL/min/1.73m ²)	64 (53–75)	63 (55–74)	63 (55–74)	61 (51–74)	60 (52–72)
Ca (mg/dL)	9.4 (9.1–9.7)	9.2 (8.8–9.6)	9.3 (9.0–9.6)	9.3 (9.0–9.8)	9.3 (9.0–9.7)
Pentosidine (µg/mL)	0.0584 (0.0475–0.0761)				0.0501 (0.0424–0.0674) ^b
TRACP-5b (mU/dL)	533 (358–661)	119 (87–151) ^a	131 (98–157) ^a	192 (136–273) ^a	181 (119–322) ^a
P1NP (ng/mL)	57 (44–80)	44 (33–59)	18 (14–25) ^a	20 (14–29) ^a	20 (13–29) ^a

Data are expressed as median (interquartile range). ALP, alkaline phosphatase; ALT, alanine aminotransferase; AST, aspartate aminotransferase; eGFR, estimated glomerular filtration rate; GGT, gamma-glutamyltransferase; P1NP, procollagen type N-terminal propeptide; TRACP-5b, tartrate-resistant acid phosphatase 5b aP < 0.001, bP < 0.05 compared to baseline