Supplementary Table SI: Sequences of PCR primers used in this study

Gene	Forward primer	Reverse primer
Il6	GAGGATACCACTCCCAACAGACC	AAGTGCATCATCGTTGTTCATACA
Il1b	GCCCATCCTCTGTGACTCAT	AGGCCACAGGTATTTTGTCG
Tnfa	CTCCCTTTGCAGAACTCAGG	AGCCCCCAGTCTGTATCCTT
Myod1	TACAGTGGCGACTCAGATGC	TAGTAGGCGGTGTCGTAGCC
Myog	CCAACCCAGGAGATCATTTG	ATATCCTCCACCGTGATGCT
Pax7	TGGCCAAACTGCTGTTGATTAC	CGTCTCCAGAGGGTTTCCTG
Col1a1	GTCCCTCTGGAAATGCTGGAC	GACCGGGAAGACCGACCA
Col3a1	GACCAGCAGTCCAACGTAGA	TCTCCAAATGGGATCTGTGG
Gapdh	TGTGAGGGAGATGCTCAGTG	TGTTCCTACCCCCAATGTGT

Supplementary Table SII: effect of Lcn2 genetic ablation on bone phenotype of 3-month-old male *MDX* mice. Values are shown as Mean ±SD of the non-normalized values. Statistics were performed by One-way ANOVA.

	WT BL6	WT BL10	WT BL6x10	*Lcn2*$^{-/-}$	*MDX*	*MDXxLcn2*$^{-/-}$
BV/TV%	17.91 ±2.613	16.03 ±3.706	13.76 ±1.597$^{\$}$	13.56 ±1.245$^{\$}$	9.949 ±0.8516†	14.63 ±4.589*
Tb.N (1/mm)	4.567 ±0.430	4.515 ±1.107	3.843 ±0.3968	3.699 ±0.373$^{\$}$	2.85 ±0.2974†	3.91 ±1.151*
Tb.Th (µm)	39.18 ±3.874	35.66 ±2.072$^{\$}$	35.81 ±2.358$^{\$}$	36.72 ±1.46$^{\$}$	35.3 ±5.383	37.33 ±3.164
Tb.Sp (µm)	101.0 ±11.3	112.1 ±22.01	111 ±17.69	134.5 ±19.44$^{\$}$	153 ±30.87†	109.7 ±39.25*
Ct.Th (µm)	90.85 ±4.857	86.95 ±6.467	83.66 ±14.29	91.38 ±14.24	88.68 ±18.29	91.46 ±9.035
Serum CTx (ng/ml)	13.97 ±3.964	6.132 ±7.058	15.57 ±6.321†	10.33 ±8.554	18.77 ±10.92†	17.71 ±13.48
Oc.N/BS (1/mm)	2.594 ±0.4183	2.197 ±0.2826	2.548 ±0.669	2.284 ±0.491	3.414 ±0.7533†	1.236 ±0.557$^{¥,*}$
Oc.S/BS%	7.354 ±1.299	5.399 ±0.7867	6.982 ±1.466	7.850 ±3.162	9.204 ±2.383†	4.987 ±1.241‡,*
Ob.N/BS (1/mm)	6.52 ±1.833	4.81 ±1.383	5.826 ±1.681	2.828 ±0.277$^{\$}$	3.105 ±0.68	5.564 ±1.870‡,*
Ob.S/BS%	11.08 ±2.533	8.303 ±2.435	7.418 ±1.019$^{\$}$	4.704 ±0.738$^{\$}$	5.620 ±1.024	8.636 ±2.607‡,*
ID (µm)	37.67 ±5.538	35 ±5.568	32.63 ±2.56	43.5 ±8.093	40.25 ±5.62	34.67 ±1.751‡
TID (µm)	40.83 ±5.529	36 ±6.928	35.13 ±3.044	46.67 ±8.262	43.75 ±6.702	37.33 ±2.503‡

$p \leq 0.05$ *vs* $^{\$}$WT BL6; †WT BL10; $^{¥}$WT BL6x10; **MDX*; ‡*Lcn2*$^{-/-}$

Supplementary Table SIII: effect of Lcn2 genetic ablation on bone phenotype of 6-month-old male *MDX* mice. Values are shown as Mean ±SD of the non-normalized values. Statistics were performed by One-way ANOVA.

	WT BL6	WT BL10	WT BL6x10	*Lcn2*$^{-/-}$	*MDX*	*MDXxLcn2*$^{-/-}$
BV/TV%	15.6 ±2.931	10.85 ±0.849$^{\$}$	10.23 ±1.439$^{\$}$	8.37 ±2.919$^{\$}$	7.974 ±1.264†	11.24 ±2.62*
Tb.N (1/mm)	3.645 ±0.4089	2.52 ±0.448$^{\$}$	2.636 ±0.332$^{\$}$	2.208 ±0.618$^{\$}$	2.15 ±0.4369	3.003 ±0.5928‡,*
Tb.Th (µm)	42.52 ±3.382	40.39 ±4.026	39.54 ±2.33	37.49 ±4.14$^{\$}$	36.42 ±4.309†	37.16 ±2.73
Tb.Sp (µm)	154.9 ±10.82	136.2 ±40.63	141 ±20.59	187.9 ±19.86	158.3 ±14.69†	158.3 ±14.69*
Ct.Th (µm)	121.8 ±13.16	115 ±8.96	105 ±11.54$^{\$}$	120.2 ±11.35	93.34 ±15.69†	115.1 ±14.86*
Oc.N/BS (1/mm)	1.976 ±0.437	1.612 ±0.1166	2.337 ±0.7568	2.042 ±0.294	2.622 ±0.8622†	1.732 ±0.5207*
Oc.S/BS%	7.646 ±1.744	7.358 ±0.8302	7.18 ±0.7617	7.757 ±1.224	10.92 ±2.543†	7.665 ±2.2*
Ob.N/BS (1/mm)	21.03 ±3.829	13.41 ±2.628$^{\$}$	14.44 ±3.891$^{\$}$	10.73 ±0.826$^{\$}$	11.52 ±1.884	16.1 ±3.373‡,*

Ob.S/BS%	15.06±1.228	11.84±1.161	11.94±0.9753	9.576±2.149$	9.48±2.718	15.68±5.076‡*
ID (μm)	32.33±3.428	34.67±6.028	33.13±7.53	36.67±7.607	45±13.54	32.4±5.595*
TID (μm)	36.22±4.41	39.33±6.658	37.25±8.242	40.33±8.847	49.5±14.75	35.4±5.983*

p≤0.05 *vs* $WT BL6; †WT BL10; **MDX*; ‡*Lcn2*$^{-/-}$

Supplementary Table SIV: effect of Lcn2 genetic ablation on bone phenotype of 12-month-old male *MDX* mice. Values are shown as Mean±SD of the non-normalized values. Statistics were performed by One-way ANOVA.

	WT BL6	WT BL10	WT BL6x10	*Lcn2*$^{-/-}$	*MDX*	*MDXxLcn2*$^{-/-}$
BV/TV%	9.296±1.598	4.683±0.587$	5.658±0.897$	6.526±1.474$	4.47±1.01	6.112±1.108
Tb.N (1/mm)	2.378±0.5898	1.62±0.6889	1.96±0.4327	2.028±0.7454	2.103±0.6276	2.78±0.2762¥*
Tb.Th (μm)	27.58±1.257	27.98±2.00	27.22±0.626	28.65±2.357	30.44±2.891	27.58±1.358
Tb.Sp (μm)	141.3±16.69	200.2±76.98	197.1±41.14$	199±36.3$	254.1±61.08	191.2±57.77
Serum CK (U/L)	911.4±1134	615±512.5	329±185.3	768.4±679.2	2709±3435	3624±3309¥‡

p≤0.05 *vs* $WT BL6; ¥WT BL6x10; **MDX*; ‡*Lcn2*$^{-/-}$

Supplementary Table SV: effect of Lcn2 genetic ablation on muscle phenotype of male *MDX* mice. Values are shown as Mean±SD of the non-normalized values. Statistics were performed by One-way ANOVA.

	WT BL6	WT BL10	WT BL6x10	*Lcn2*$^{-/-}$	*MDX*	*MDXxLcn2*$^{-/-}$
			3-month-old			
Grip force(fold to BW)	3.81±0.6742	3.544±0.335	3.447±0.44$	3.467±0.5709	2.411±0.3705†	3.295±0.478*
Grip force (g)	102.9±19.81	92.26±8.38	87.22±16.76	87.27±12.54$	70.69±11.21†	91.01±14.17*
Intact fibres%	99.21±0.6991	98.53±2.019	97.95±1.593	99.39±0.0836	17.3±6.85†	20.37±6.29¥‡
Collagen area%	0.7544±0.308	1.157±0.2857	1.036±0.4738	0.9958±0.694	4.859±1.359†	2.554±1.289¥‡*
Serum CK (U/L)	427.4±311.3	456.8±363.2	1358±1494	712.8±620	20586±12255†	5966±5406‡*
			6-month-old			
Grip force(fold to BW)	3.023±0.4854	2.825±0.4315	2.823±0.5259	3.18±0.5516	2.041±0.466†	2.526±0.455‡*
Grip force (g)	82.62±15.12	87.15±13.57	89.95±19.42	95.77±15.71$	65.51±15.65†	79.33±14.51‡
Intact fibres%	97.81±1.487	95.53±1.416	94.82±0.569$	98.55±0.5256	26.9±4.081†	30.51±8.72¥‡
Collagen area%	2.966±1.379	2.724±1.318	2.116±0.881	3.926±0.3995	6.864±0.4363†	4.229±1.175¥*
Serum CK (U/L)	1146±1433	949.9±1063	1235±483.9	650.3±1031	2258±1648†	1378±1437

p≤0.05 *vs* $WT BL6; †WT BL10; ¥WT BL6x10; **MDX*; ‡*Lcn2*$^{-/-}$