

1 **Supplemental Material**

<i>Lmna</i> DCM Treatment	Age (weeks)	n	LVDD (mm)	P	LVWT (mm)	P	EF (%)	P	FS (%)	P
<i>EGFP</i> -Ctrl <i>shRNA</i>	5.5	5	4.41 ± 0.11		0.49 ± 0.09		13.91 ± 2.50		6.16 ± 1.15	
<i>Yy1</i> -Ctrl <i>shRNA</i>		5	4.16 ± 0.12	0.009	0.56 ± 0.09	0.25	31.70 ± 4.31	4E-05	14.81 ± 2.20	5E-05
<i>Yy1-Ccnd1 shRNA</i>		5	4.04 ± 0.15	0.002	0.58 ± 0.06	0.09	32.06 ± 2.88	5E-06	14.93 ± 1.47	5E-06

2 **Online Table I. Effect of *Yy1-Ccnd1* shRNA on *Lmna* DCM in mice**

3 Effect of *Yy1-Ccnd1* shRNA, *Yy1*-Ctrl shRNA or *EGFP*-Ctrl shRNA at a dose of 0.5E+13 vg/kg on *Lmna* DCM mice assessed at 5.5 weeks. P values represent comparisons to *Lmna* DCM mice treated with *EGFP*-Ctrl shRNA. LVDD, left ventricular diastolic dimension; LVWT, LV wall thickness; EF, ejection fraction; FS, fractional shortening.

<i>Lmna</i> DCM Treatment	Age (weeks)	n	LVDD (mm)	P	LVWT (mm)	P	EF (%)	P	FS (%)	P
<i>EGFP</i>	5.5	5	4.39 ± 0.10		0.46 ± 0.05		14.77 ± 5.30		6.48 ± 2.33	
<i>Ccnd1</i>		5	4.44 ± 0.11	0.44	0.52 ± 0.06	0.16	16.86 ± 1.84	0.43	7.54 ± 0.87	0.37

8 **Online Table II. Effect of *Ccnd1* on *Lmna* DCM in mice**

9 Effect of *Ccnd1* or *EGFP* at a dose of 0.5E+13 vg/kg on *Lmna* DCM mice assessed at 5.5 weeks. P values represent comparisons to *Lmna* DCM mice treated with *EGFP*. LVDD, left ventricular diastolic dimension; LVWT, LV wall thickness; EF, ejection fraction; FS, fractional shortening.

<i>Lmna</i> DCM Treatment	Age (weeks)	n	LVDD (mm)	P	LVWT (mm)	P	EF (%)	P	FS (%)	P
<i>EGFP</i>	5.5	5	4.25 ± 0.10		0.43 ± 0.11		14.38 ± 5.03		6.38 ± 2.32	
<i>Bmp7</i>		6	4.02 ± 0.22	0.07	0.45 ± 0.09	0.79	20.56 ± 8.94	0.21	9.31 ± 4.21	0.20

13 **Online Table III. Effect of *Bmp7* on *Lmna* DCM in mice**

14 Effect of *Bmp7* at a dose of 0.5E+13 vg/kg on *Lmna* DCM mice assessed at 5.5 weeks. P values represent comparisons to *Lmna* DCM mice treated with *EGFP*. LVDD, left ventricular diastolic dimension; LVWT, LV wall thickness; EF, ejection fraction; FS, fractional shortening.

<i>Lmna</i> DCM Treatment	Age (weeks)	n	LVDD (mm)	P	LVWT (mm)	P	EF (%)	P	FS (%)	P
Ctrl shRNA	5.5	6	4.28 ± 0.12		0.47 ± 0.08		17.34 ± 9.80		7.86 ± 4.76	
<i>Ctgf</i> shRNA		7	4.16 ± 0.13	0.10	0.51 ± 0.06	0.26	23.79 ± 4.52	0.15	10.83 ± 2.20	0.17

18 **Online Table IV. Effect of *Ctgf* shRNA on *Lmna* DCM in mice**

19 Effect of *Ctgf* shRNA at a dose of 2.0E+13 vg/kg on *Lmna* DCM mice assessed at 5.5 weeks. P values represent comparisons to *Lmna* DCM mice treated with Ctrl shRNA. LVDD, left ventricular diastolic dimension; LVWT, LV wall thickness; EF, ejection fraction; FS, fractional shortening.