

**Supplementary Table 1.** Echocardiography of wild type (WT) and 5-HT<sub>4</sub>-transgenic (5-HT<sub>4</sub>-TG) mice before (basal) and seven hours after lipopolysaccharide (LPS) treatment (30 µg/g body weight ). NaCl injection served as control. Data shown are means ± SEM of n mice.

Parameters	WT				5-HT <sub>4</sub> -TG			
	NaCl		LPS		NaCl		LPS	
	basal	7 h	basal	7 h	basal	7 h	basal	7 h
<b>n</b>	10	10	10	10	11	11	12	12
<b>EF (%)</b>	70.1 ± 0.8	68.4 ± 0.9	70.8 ± 0.9	58.8 ± 6.5*	73.0 ± 0.8	72.5 ± 0.8	72.9 ± 1.7	61.4 ± 4.6*
<b>HR (bpm)</b>	461 ± 9.5	442 ± 11.8	487 ± 6.4	588 ± 16.7*	489 ± 12.1	480 ± 9.8	460 ± 10.5	581 ± 22.7*
<b>Pulsed wave Doppler</b>								
<b>Mitral valve</b>								
<b>E velocity (mm/s)</b>	836 ± 31.0	848 ± 24.9	793 ± 28.9	466 ± 41.5*	833 ± 20.9	835 ± 23.1	902 ± 53.8	592 ± 30.7*
<b>A velocity (mm/s)</b>	506 ± 23.1	511 ± 21.8	491 ± 21.3	283 ± 27.9*	480 ± 9.3	493 ± 14.4	591 ± 40.3	379 ± 20.4*
<b>E/A</b>	1.67 ± 0.06	1.68 ± 0.07	1.63 ± 0.05	1.73 ± 0.05	1.74 ± 0.04	1.66 ± 0.03	1.54 ± 0.05	1.57 ± 0.04
<b>Tricuspid valve</b>								
<b>E velocity (mm/s)</b>	307 ± 25.8	288 ± 28.2	381 ± 26.9	267 ± 19.1	321 ± 13.3	348 ± 17.3	392 ± 26.3	222 ± 24.2*
<b>A velocity (mm/s)</b>	499 ± 35.6	468 ± 36.5	628 ± 30.4	450 ± 20.2	558 ± 18.7	544 ± 21.3	601 ± 38.1	426 ± 44.2*
<b>E/A</b>	0.61 ± 0.01	0.61 ± 0.02	0.61 ± 0.03	0.62 ± 0.04	0.57 ± 0.02	0.63 ± 0.02	0.65 ± 0.02	0.54 ± 0.02*
<b>Peak velocity</b>								
<b>Ascending aorta (mm/s)</b>	1054 ± 52.7	1079 ± 44.4	1158 ± 67.1	783 ± 48.8*	1128 ± 57.5	1143 ± 56.1	1208 ± 67.9	799 ± 49.1*
<b>Descending aorta (mm/s)</b>	-975 ± 49.1	-996 ± 43.6	-970 ± 36.1	-589 ± 31.8*	-995 ± 31.8	-989 ± 30.7	-966 ± 76.4	-662 ± 46.8*
<b>Pulmonary artery (mm/s)</b>	-656 ± 45.3	-612 ± 60.6	-671 ± 27.2	-453 ± 32.5*	-754 ± 18.0	-762 ± 15.6	-782 ± 40.9	-453 ± 32.5*
<b>Pulmonary vein</b>								
<b>Diastolic velocity (mm/s)</b>	593 ± 35.6	591 ± 36.0	662 ± 25.6	413 ± 39.4*	631 ± 27.0	633 ± 20.0	683 ± 37.9	491 ± 31.1*
<b>Systolic velocity (mm/s)</b>	230 ± 13.8	224 ± 16.0	224 ± 20.3	129 ± 15.4*	215 ± 11.5	210 ± 6.6	250 ± 24.0	144 ± 12.4*
<b>Superior vena cava</b>								
<b>Diastolic velocity (mm/s)</b>	-298 ± 21.9	-304 ± 24.0	-338 ± 19.7	-184 ± 17.0*	-275 ± 24.5	-286 ± 22.4	-333 ± 32.2	-201 ± 20.2*
<b>Systolic velocity (mm/s)</b>	-202 ± 20.6	-207 ± 15.5	-252 ± 11.3	-140 ± 16.5*	-209 ± 26.7	-209 ± 27.4	-229 ± 29.2	-122 ± 11.2*
<b>Tissue Doppler</b>								
<b>E' velocity (mm/s)</b>	-32.8 ± 2.5	-29.0 ± 2.1	-30.3 ± 1.9	-19.5 ± 1.1*	-31.6 ± 1.7	-30.6 ± 1.4	-32.7 ± 3.0	-22.4 ± 1.7*
<b>A' velocity (mm/s)</b>	-22.3 ± 2.0	-19.4 ± 1.5	-21.4 ± 1.7	-13.2 ± 0.9*	-20.0 ± 1.3	-20.3 ± 1.1	-21.0 ± 1.6	-14.0 ± 1.0*
<b>E'/A'</b>	1.49 ± 0.03	1.48 ± 0.03	1.45 ± 0.07	1.47 ± 0.04	1.60 ± 0.03	1.55 ± 0.04	1.56 ± 0.05	1.72 ± 0.12

EF, ejection fraction; HR, heart rate; \*p < 0.05 vs. basal

**Supplementary Table 2.** Characteristics of experimental mice. Body weight and heart weight (absolute and relative) of wild type (WT), 5-HT<sub>4</sub>-TG, PP2A-TG and double transgenic (DT) mice are given. The relative weights were calculated as organ weight/body weight. TG, transgenic mice. Data shown are means  $\pm$  SEM.

Parameters	WT	5-HT <sub>4</sub> -TG	PP2A-TG	DT
<b>n</b>	6	7	7	8
<b>Body weight (g)</b>	40.7 $\pm$ 3.3	40.8 $\pm$ 2.8	42.8 $\pm$ 2.0	41.3 $\pm$ 1.6
<b>Heart weight (mg)</b>	177.38 $\pm$ 16.74	207.83 $\pm$ 19.10	259.71 $\pm$ 17.19 <sup>#</sup>	229.01 $\pm$ 18.53
<b>LA weight (mg)</b>	3.78 $\pm$ 0.42	6.61 $\pm$ 1.10	8.09 $\pm$ 1.27 <sup>#</sup>	5.89 $\pm$ 0.40
<b>RA weight (mg)</b>	4.93 $\pm$ 0.53	6.73 $\pm$ 1.15	8.63 $\pm$ 1.69	7.08 $\pm$ 0.68
<b>Ventricle weight (mg)</b>	163.33 $\pm$ 15.16	188.61 $\pm$ 18.30	234.03 $\pm$ 15.51 <sup>#</sup>	206.66 $\pm$ 16.18
<b>Relative heart weight</b>	4.36 $\pm$ 0.21	5.06 $\pm$ 0.20	6.13 $\pm$ 0.51 <sup>#</sup>	5.51 $\pm$ 0.32
<b>Relative LA weight</b>	0.10 $\pm$ 0.01	0.16 $\pm$ 0.02	0.19 $\pm$ 0.02 <sup>#</sup>	0.14 $\pm$ 0.01
<b>Relative RA weight</b>	0.12 $\pm$ 0.01	0.16 $\pm$ 0.02	0.20 $\pm$ 0.03	0.17 $\pm$ 0.01
<b>Relative ventricle weight</b>	4.02 $\pm$ 0.16	4.58 $\pm$ 0.20	5.54 $\pm$ 0.49 <sup>#</sup>	4.98 $\pm$ 0.27

LA, left atrium; RA, right atrium; <sup>#</sup>p < 0.05 vs. WT

**Supplementary Table 3.** Echocardiography of wild type (WT), 5-HT<sub>4</sub>-transgenic (5-HT<sub>4</sub>-TG), PP2A-transgenic (PP2A-TG) and double transgenic (DT) mice. Data shown are means ± SEM of n mice.

Parameters	WT			5-HT <sub>4</sub> -TG			PP2A-TG			DT		
	basal	5-HT	Iso	basal	5-HT	Iso	basal	5-HT	Iso	basal	5-HT	Iso
<b>n</b>	18	7	7	18	8	8	7	7	7	10	10	10
<b>EF (%)</b>	71.1 ± 1.2	78.2 ± 3.5	98.7 ± 0.8*	65.9 ± 1.5	97.0 ± 2.2* <sup>#</sup>	97.8 ± 1.1*	39.9 ± 3.4 <sup>§#</sup>	45.5 ± 3.6 <sup>§#</sup>	78.4 ± 3.1* <sup>§#</sup>	39.8 ± 2.1 <sup>§#</sup>	59.9 ± 5.2* <sup>§#+</sup>	68.1 ± 5.5* <sup>§#</sup>
<b>HR (bpm)</b>	494 ± 17	509 ± 47	605 ± 31*	455 ± 7	538 ± 17*	546 ± 17*	467 ± 11	466 ± 14	528 ± 20 <sup>#</sup>	473 ± 13	521 ± 17*	537 ± 19
<b>Pulsed wave Doppler</b>												
<b>Mitral valve</b>												
<b>E velocity (mm/s)</b>	808 ± 24.7	n.d.	n.d.	846 ± 31.5	n.d.	n.d.	757 ± 55.6	n.d.	n.d.	665 ± 27.2 <sup>§#</sup>	n.d.	n.d.
<b>A velocity (mm/s)</b>	483 ± 11.4	n.d.	n.d.	491 ± 25.8	n.d.	n.d.	333 ± 62.8 <sup>§#</sup>	n.d.	n.d.	313 ± 41.2 <sup>§#</sup>	n.d.	n.d.
<b>E/A</b>	1.68 ± 0.05	n.d.	n.d.	1.76 ± 0.06	n.d.	n.d.	1.96 ± 0.08 <sup>#</sup>	n.d.	n.d.	1.90 ± 0.09 <sup>#</sup>	n.d.	n.d.
<b>Tricuspid valve</b>												
<b>E velocity (mm/s)</b>	304 ± 16.8	n.d.	n.d.	261 ± 22.2	n.d.	n.d.	197 ± 23.5 <sup>#</sup>	n.d.	n.d.	233 ± 25.9 <sup>#</sup>	n.d.	n.d.
<b>A velocity (mm/s)</b>	530 ± 25.1	n.d.	n.d.	435 ± 33.0 <sup>#</sup>	n.d.	n.d.	334 ± 38.1 <sup>#</sup>	n.d.	n.d.	369 ± 39.5 <sup>#</sup>	n.d.	n.d.
<b>E/A</b>	0.57 ± 0.02	n.d.	n.d.	0.60 ± 0.02	n.d.	n.d.	0.57 ± 0.03	n.d.	n.d.	0.63 ± 0.04	n.d.	n.d.
<b>Peak velocity</b>												
<b>Ascending aorta (mm/s)</b>	1032 ± 60	909 ± 112	1264 ± 115	1098 ± 44	1382 ± 139 <sup>#</sup>	1459 ± 129*	837 ± 74 <sup>§</sup>	824 ± 73 <sup>§</sup>	1106 ± 132 <sup>§</sup>	862 ± 55 <sup>§</sup>	1118 ± 72 <sup>+</sup>	1248 ± 99*
<b>Tissue Doppler</b>												
<b>E' velocity (mm/s)</b>	-27.7 ± 1.9	n.d.	n.d.	-30.2 ± 2.7	n.d.	n.d.	-32.8 ± 4.8	n.d.	n.d.	-30.9 ± 4.6	n.d.	n.d.
<b>A' velocity (mm/s)</b>	-19.1 ± 0.9	n.d.	n.d.	-20.6 ± 1.8	n.d.	n.d.	-16.7 ± 4.1	n.d.	n.d.	-18.2 ± 2.9	n.d.	n.d.
<b>E'/A'</b>	1.43 ± 0.07	n.d.	n.d.	1.48 ± 0.07	n.d.	n.d.	1.93 ± 0.19 <sup>§#</sup>	n.d.	n.d.	1.70 ± 0.16	n.d.	n.d.

EF, ejection fraction; HR, heart rate; n.d., not determined; \*p < 0.05 vs. basal; <sup>#</sup>p < 0.05 vs. WT; <sup>§</sup>p < 0.05 vs. 5-HT<sub>4</sub>-TG; <sup>+</sup>p < 0.05 vs. PP2A-TG