

Supplemental Table 1: lncRNA genes that are DE in mouse.

Mouse (GRCm38/mm10)					Human (GRCh38/hg19)			
lncRNA gene name (Ensembl ID)	comparison source	log <sub>2</sub> FC	p-adj	known tissue expression	lncRNA ortholog gene name (Ensembl ID)	FC info	known tissue expression	known function
Gm43672 (ENSMUSG000000106019)	TG vs nTG	-0.557	7.62E-11	Heart, brain, muscle, trachea, skin, spleen  <a href="https://rnacentral.org/rna/URS0002A33156/10090">https://rnacentral.org/rna/URS0002A33156/10090</a>	ENSG00000308496			
	TG_f vs nTG_f	-0.630	1.04E-06					
	TG_HIIT vs nTG_HIIT	-0.583	3.17E-06					
	TG_Sed vs nTG_Sed	-0.531	6.55E-04					
	TG_m vs nTG_m	-0.486	1.99E-03					
Gm9905 (ENSMUSG000000053358)	TG vs nTG	-0.594	3.10E-08					
	TG_HIIT vs nTG_HIIT	-0.689	3.17E-06					
	TG_m vs nTG_m	-0.587	1.74E-03					
	TG_f vs nTG_f	-0.602	2.28E-03					
Gm20632 (ENSMUSG000000093577)	TG_HIIT vs nTG_HIIT	-0.546	1.80E-03	All tissues have low expression  <a href="https://rnacentral.org/rna/URS0002A237A7/10090">https://rnacentral.org/rna/URS0002A237A7/10090</a>	ENSG00000290792			
Gm42918 (ENSMUSG000000106209)	TG_m vs nTG_m	-0.951	9.07E-04					
	TG vs nTG	-0.680	1.20E-03					
	TG_HIIT vs nTG_HIIT	-0.810	4.42E-03					
Banf2os (ENSMUSG000000086384)	TG vs nTG	-0.965	3.11E-08	All tissues have low expression  <a href="https://rnacentral.org/rna/URS0002A19B47/10090">https://rnacentral.org/rna/URS0002A19B47/10090</a>				
	TG_f vs nTG_f	-1.086	1.38E-04					
	TG_Sed vs nTG_Sed	-1.047	6.55E-04					
	TG_HIIT vs nTG_HIIT	-0.883	1.80E-03					
	TG_m vs nTG_m	-0.842	1.01E-02					
Gm13375 (ENSMUSG000000075514)	TG_HIIT vs nTG_HIIT	-0.488	4.46E-03	Brain, skin, bone, thymus, lung, colon, spleen  <a href="https://rnacentral.org/rna/URS0002A2504A/10090">https://rnacentral.org/rna/URS0002A2504A/10090</a>				
RP23-166L22.2 (ENSMUSG000000110340)	TG vs nTG	-1.361	1.64E-06	All tissues have low expression				
	TG_f vs nTG_f	-1.740	5.94E-03					

	TG_m vs nTG_m	-1.159	1.01E-02					
G730003C15Rik (ENSMUSG00000097573)	TG_HIIT vs nTG_HIIT	-0.684	5.47E-03	<a href="https://rnacentral.org/rna/URS0002A4F318/10090">https://rnacentral.org/rna/URS0002A4F318/10090</a>	ENSG00000287133			
	TG vs nTG	-0.536	8.45E-03					
E230013L22Rik (ENSMUSG00000096957)	TG vs nTG	-0.476	9.14E-05	Heart  <a href="https://rnacentral.org/rna/URS0002A1C2B5/10090">https://rnacentral.org/rna/URS0002A1C2B5/10090</a>				Most upregulated lncRNA after X-ray irradiation in mouse lung tissue, modulates the mRNA BNIP1 (Yu 2024)
	TG_HIIT vs nTG_HIIT	-0.539	1.80E-03					
	TG_f vs nTG_f	-0.525	2.13E-02					
2900072N19Rik (ENSMUSG00000087018)	TG vs nTG	-0.760	8.45E-03	Brain  <a href="https://rnacentral.org/rna/URS0002A5782B/10090">https://rnacentral.org/rna/URS0002A5782B/10090</a>	LINC02710 (ENSG00000255269)		Testis  <a href="https://rnacentral.org/rna/URS000EF618F/9606">https://rnacentral.org/rna/URS000EF618F/9606</a>	
C530005A16Rik (ENSMUSG00000085408)	TG vs nTG	-0.414	9.85E-03	Brain  <a href="https://rnacentral.org/rna/URS0002A5A50C/10090">https://rnacentral.org/rna/URS0002A5A50C/10090</a>				
Prr33 (ENSMUSG00000043795)	TG_HIIT vs nTG_HIIT	-0.519	1.80E-03					Annotated in GENCODE M10 as long intergenic non-coding RNA, but traditionally annotated as protein-coding.
	TG_m vs nTG_m	-0.499	1.01E-02					
	TG vs nTG	-0.373	2.68E-02					
Gm37752 (ENSMUSG00000103385)	TG vs nTG	2.438	1.83E-02					
Gm45012 (ENSMUSG00000109052)	TG vs nTG	-0.422	9.49E-04	Heart  <a href="https://rnacentral.org/rna/URS0002A2D746/10090">https://rnacentral.org/rna/URS0002A2D746/10090</a>	ENSG00000300258			
	TG_HIIT vs nTG_HIIT	-0.415	4.00E-02					
PARTICL (ENSG00000286532)	TG_HIIT vs nTG_HIIT	-0.468	2.45E-02	Heart, arteries, prostate, esophagus, brain, fallopian tubes, cervix, testis, colon, thyroid, bladder, skin  <a href="https://rnacentral.org/rna/URS0002A47137/9606">https://rnacentral.org/rna/URS0002A47137/9606</a>	PARTICL (ENSG00000286532)			Upregulated following low-dose irradiation. Alters H3K27me3 distribution and interacts with DNA methyltransferase 1 (O’Leary 2017, O’Leary 2019). Forms triple helices clustered at tumor suppressor genes (O’Leary 2017).
Mir223hg (ENSMUSG00000078122)	TG_m vs nTG_m	0.685	1.99E-03	Heart, lung, Spleen, liver, skin, mammary gland, bone, uterus,	Mir223hg (ENSG00000274536)		Appendix, tonsil, lung, bladder, bone, leukocyte, lymph node,	Positive regulator of inflammation in atherosclerosis (Ni 2025, Oo 2025). Differentially expressed in lung adenocarcinoma and ovarian cancer (Akrami 2023, Cu 2023).
	TG_HIIT vs nTG_HIIT	0.520	4.72E-02					

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				bladder, adrenal gland, <a href="https://rnacentral.org/rna/URS0002A33BA1/10090">https://rnacentral.org/rna/URS0002A33BA1/10090</a>			small intestine, spleen <a href="https://rnacentral.org/rna/URS0002A35E6A/9606">https://rnacentral.org/rna/URS0002A35E6A/9606</a>	
Gm28703 (ENSMUSG00000099512)	TG_m vs nTG_m	-0.616	2.11E-02	All tissues have low expression <a href="https://rnacentral.org/rna/URS0002A2C79C/10090">https://rnacentral.org/rna/URS0002A2C79C/10090</a>				
	TG vs nTG	-0.470	2.89E-02					
Gm10435 (ENSMUSG00000072902)	TG vs nTG	-0.389	1.93E-03	Heart, lung, <a href="https://rnacentral.org/rna/URS000078648E/10090">https://rnacentral.org/rna/URS000078648E/10090</a>	ENSG00000287315			
	TG_m vs nTG_m	-0.428	3.38E-02					
	TG_HIIT vs nTG_HIIT	-0.387	4.40E-02					
9830004L10Rik (ENSMUSG00000099552)	TG vs nTG	-0.660	2.68E-02		ENSG00000300443			
Gm7628 (ENSMUSG00000025644)	TG vs nTG	-0.731	2.68E-02	All tissues have low expression <a href="https://rnacentral.org/rna/URS0000811860/10090">https://rnacentral.org/rna/URS0000811860/10090</a>				
Gm17586 (A_J_v1:CM003964.1)	TG vs nTG	0.759	2.69E-04					
	TG_HIIT vs nTG_HIIT	0.691	4.40E-02					
	TG_m vs nTG_m	0.758	4.79E-02					
ANRIL (ENSG00000240498)	TG vs nTG	0.649	3.10E-02	Small intestine, colon, brain <a href="https://rnacentral.org/rna/URS00026A21AD/9606">https://rnacentral.org/rna/URS00026A21AD/9606</a>	ANRIL (ENSG00000264545)			Transcriptional regulator and epigenetic modifier in myocardial infarction and coronary artery disease (Moglad 2024). Antisense to CDKN2B. ANRIL KD has been shown to increase CDKN2B expression (da Cunha Agostini 2024, Congrains 2012). Biomarker of different caners (Sanchez 2023).
6330403L08Rik (ENSMUSG00000075585)	TG_HIIT vs nTG_HIIT	-0.387	3.14E-02	Heart, brain, skeletal muscle, colon, small intestine, trachea <a href="https://rnacentral.org/rna/URS0000775964/10090">https://rnacentral.org/rna/URS0000775964/10090</a>	PDGFA-DT (ENSG00000223855)	HCM_m vs ctrl_m: log2FC 0.327, p-adj 2.62E-01  HCM_f vs ctrl_f: log2FC -0.499, p-adj 6.38E-01	Heart <a href="https://rnacentral.org/rna/URS000314D59/9606">https://rnacentral.org/rna/URS000314D59/9606</a>	
	TG_HIIT vs nTG_HIIT	-0.387	3.14E-02					
	TG_HIIT vs nTG_HIIT	-0.387	3.14E-02					

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						HCM vs ctrl: log2FC 0.194, p- adj 5.17E-01		
Gm45051 (ENSMUSG00000108435)	TG_HiIT vs nTG_HiIT	-0.582	3.14E-02	Kidney  <a href="https://rnacentral.org/rna/URS00009C60DF/10090">https://rnacentral.org/rna/URS00009C60DF/10090</a>				
Gm10115 (ENSMUSG00000062319)	TG_HiIT vs nTG_HiIT	0.540	3.14E-02	Heart, brain  <a href="https://rnacentral.org/rna/URS0000781B46/10090">https://rnacentral.org/rna/URS0000781B46/10090</a>				
	TG vs nTG	0.443	3.48E-02					
Gm43318 (ENSMUSG00000105974)	TG vs nTG	1.918	3.34E-02					
Gm43267 (ENSMUSG00000104662)	TG vs nTG	-1.062	3.43E-02					
Gm43426 (ENSMUSG00000106214)	TG vs nTG	1.105	3.48E-02					
RP24-96N12.2 (ENSMUSG00000110322)	TG vs nTG	-0.335	3.48E-02	All tissues have low expression  <a href="https://rnacentral.org/rna/URS0002A60790/10090">https://rnacentral.org/rna/URS0002A60790/10090</a>				
	TG_HiIT vs nTG_HiIT	-0.384	4.72E-02					
Gm44386 (ENSMUSG00000107689)	TG_HiIT vs nTG_HiIT	-0.540	4.40E-02	Heart, muscle, lung, adipose tissue, kidney, thymus, skin, colon, trachea  <a href="https://rnacentral.org/rna/URS0002A20769/10090">https://rnacentral.org/rna/URS0002A20769/10090</a>	ENSG00000233060		Brain  <a href="https://rnacentral.org/rna/URS0002EFB52/9606">https://rnacentral.org/rna/URS0002EFB52/9606</a>	
Arhgap27os2 (ENSMUSG00000085360)	TG_m vs nTG_m	1.039	4.71E-02	All tissues have low expression  <a href="https://rnacentral.org/rna/URS0002A4F8BB/10090">https://rnacentral.org/rna/URS0002A4F8BB/10090</a>	ENSG00000294490			
RP23-299N4.1 (ENSMUSG00000109841)	TG_HiIT vs nTG_HiIT	-0.583	4.72E-02	All tissues have low expression  <a href="https://rnacentral.org/rna/URS0002A4B653/10090">https://rnacentral.org/rna/URS0002A4B653/10090</a>				
Gm17473 (ENSMUSG00000097805)	TG vs nTG	-0.884	4.94E-02	All tissues have low expression				

				<a href="https://rnacentral.org/rna/URS0002A49E0F/10090">https://rnacentral.org/rna/URS0002A49E0F/10090</a>				
9430062P05Rik (ENSMUSG00000104263)	TG vs nTG	-0.467	4.95E-02					
Gm17281 (MGP_FVBNJ_G0005910)	TG_HIIT vs nTG_HIIT	-0.337	4.99E-02					

Description:

Sorted by ascending average *p*-adj value across each comparison source.

Legend:

TG: transgenic, nTG: non-transgenic, M: male, F: female, HIIT: high intensity interval training, Sed: sedentary, HCM: hypertrophic cardiomyopathy, NF: non-failing, FC: fold change, *p*-adj: Benjamini-Hochberg-adjusted *p*-value