

**Table S4.** Lung genes (n=303) significantly different between wild-type (Gsr-WT) and glutathione reductase-deficient (Gsr-KO) mouse neonates after hyperoxia exposure at PN05 (2-way ANOVA,  $p < 0.01$ ). Fold Change (FC) - Blue(-): fold decreased by O<sub>2</sub>, Red(+): fold increased by O<sub>2</sub>.

**Fold Difference (FD) - Blue(-):** fold lower in Gsr-KO, **Red :** fold higher in Gsr-KO.

[C3H/HeN, Air](raw) [C3H/HeN, O2](raw) [Gsr-KO, Air](raw) [Gsr-KO, O2](raw)



[C3H/HeN_Air](raw)	[C3H/HeN_O2](raw)	[Gr-KO_Air](raw)	[Gr-KO_O2](raw)	RefSeq Transcript ID	ID	p (Genotype-Exposure)	FC (WT_Air vs O2)	FC (KO_Air vs O2)	FD (WT_O2 vs KO_O2)	Gene Symbol	Gene Title	Gene Ontology Biological Process
78.50476	83.57728	81.85938	74.15306	NM_153061///XR_10		0.00994647	1.065	-1.104	-1.127	TnfB	TGF-beta1-induced anti-apoptotic factor 2	0001501 // skeletal system development // inferred from direct assay//0001501 // skeletal system development // inferred from mutant phenotype//0002158 // osteoclast differentiation
548.4758	680.0645	770.6171	601.928	NM_001039181///NN		0.005818703	1.240	-1.280	-1.130	Npr3	natriuretic peptide receptor 3	0006000 // fructose metabolic process // inferred from electronic annotation//0006003 // fructose 2,6-bisphosphate metabolic process // inferred from electronic annotation
499.83173	577.6723	542.535	504.32684	NM_001039215///NN		0.001658322	1.156	-1.076	-1.145	Pfkfb4	6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase 4	0006508 // proteolysis // inferred from electronic annotation
760.32666	871.6596	893.9743	759.65546	NM_001081150		0.001133994	1.146	-1.177	-1.147	Lrrn1	LON peptidase N-terminal domain and ring finger 1	0002089 // lens morphogenesis in camera-type eye // inferred from mutant phenotype//0007165 // signal transduction // inferred from electronic annotation//0007264
385.27368	449.73163	483.1919	387.40793	NM_013867///XM_00		1.30E-04	1.167	-1.247	-1.161	Bcar3	breast cancer anti-estrogen resistance 3	0001578 // microtubule bundle formation // inferred from direct assay//0010506 // regulation of autophagy // inferred from electronic annotation//0045197 // establishment of polarity
354.14503	765.80056	800.00006	659.63026	NM_001110596///NN		0.00080421	1.150	-1.081	-1.130	Cdc42	monoubiquitinating factor 1	0006810 // transport // inferred from electronic annotation//0051180 // vitamin transport // not recorded
110.14734	123.80065	115.75199	105.61347	NM_0089404		0.008940404	1.124	-1.096	-1.172	C7orf97	expressed sequence C7orf97	0000122 // negative regulation of transcription from RNA polymerase II promoter // not recorded//0001525 // angiogenesis // inferred from direct assay//0001525 // airway remodeling
67.583115	38.96788	36.07266	33.08606	NM_145146		0.005743774	1.174	-1.091	-1.178	Afn	afamin	0006810 // transport // inferred from electronic annotation//0051180 // vitamin transport // not recorded
2915.611	3436.7405	3575.5144	2819.8708	NM_133725///NM_1'		0.009998948	1.179	-1.268	-1.219	Scicbp2l	SECIS binding protein 2-like	0006805 // negative regulation of transcription from RNA polymerase II promoter // not recorded//0001525 // angiogenesis // inferred from direct assay//0001525 // airway remodeling
1710.4757	2207.7852	1961.248	1809.4072	NM_001025250///NN		0.00316703	1.291	-1.084	-1.220	Vegfa	vascular endothelial growth factor A	0006810 // transport // inferred from electronic annotation//0051180 // vitamin transport // not recorded
355.8095	425.62427	379.70926	347.82846	NM_175187///NR_02		0.0054542276	1.196	-1.092	-1.224	Tmem161b	transmembrane protein 161B	0006810 // transport // inferred from electronic annotation//0051180 // vitamin transport // not recorded
37.44921	44.33614	38.355804	36.149307			0.009915507	1.184	-1.061	-1.226	Difrd46e	DNA segment, Chr. 1, ERATO Doi 646, expressed	0007018 // microtubule-based movement // not recorded//0008152 // metabolic process // inferred from electronic annotation
66.743034	73.25703	68.7475	59.70516	NM_177052///XM_00		0.004596748	1.098	-1.151	-1.227	Kif6	kinesin family member 6	0006915 // apoptotic process // inferred from electronic annotation
600.0476	679.1741	616.0448	544.11524	NM_026368///XM_00		0.000998655	1.123	-1.129	-1.247	Cors1	catenin, arm repeats and coiled-coil containing 1	0006810 // transport // inferred from electronic annotation//0051180 // vitamin transport // not recorded
32.14648	34.93557	30.895538	29.65684	NM_0089538		0.008951955	1.151	-1.138	-1.230	Atad5	ATAD5	0006810 // transport // inferred from electronic annotation//0051180 // vitamin transport // not recorded
28.196205	36.772247	32.59863	28.606833	NM_005517035		0.005517035	1.286	-1.140	-1.268	Difrd45be	DNA segment, Chr. 7, ERATO Doi 558, expressed	0006810 // transport // inferred from electronic annotation//0051180 // vitamin transport // not recorded
166.81755	211.61995	168.47212	166.18628	NM_003110///XM_00		0.00634887	1.269	-1.014	-1.273	Mir43	mitochondrial calcium uptake family, member 3	0006810 // transport // inferred from electronic annotation//0051180 // vitamin transport // not recorded
143.0722	28.110953	20.604244	21.480125	NM_001150749///NN		0.007889654	-5.053	1.043	-1.318	Rdh7	retinol dehydrogenase 7	0008152 // metabolic process // inferred from electronic annotation//0042572 // retinol metabolic process // inferred from electronic annotation//0055114 // oxidation
511.498	723.33057	550.2367	547.33636	NM_007707///XM_01		0.006182656	1.414	-1.005	-1.322	Socs3	suppressor of cytokine signaling 3	0001666 // response to hypoxia // inferred from electronic annotation//0001932 // regulation of protein phosphorylation // inferred from direct assay//0006469 // negi
1531.4441	1833.0116	1756.8998	1347.1793	NM_001012766///NN		0.003918618	1.197	-1.304	-1.361	Eor-p2//Eor1//Eor12//Eor2//	/ eosinophil-associated, ribonuclease A family, pseudogene 2//eosinophil-associated, ribonuclease A family, pseudogene 2//	0006835 // chemotaxis // inferred from direct assay//0008152 // metabolic process // inferred from electronic annotation//0090305 // nucleic acid phosphodiester bond
128.37373	20.784555	15.921132	15.120898	NM_029562///XM_00		0.005814837	-6.176	-1.053	-1.375	Cyp2d26	cytochrome P450, family 2, subfamily d, polypeptide 26	0006805 // xenobiotic metabolic process // not recorded//0007565 // female pregnancy // inferred from electronic annotation//0019369 // arachidonic acid metabolic process
125.92949	179.2413	2265.6091	118.197014	NM_008725		0.008516206	1.423	-19.168	-1.516	Nppa	natriuretic peptide type A	0001666 // response to hypoxia // inferred from electronic annotation//0003085 // negative regulation of systemic arterial blood pressure // not recorded//0006182 //
481.74808	49.186993	36.431168	30.955603	NM_007376		0.004647014	-9.794	-1.177	-1.589	Ptp	pregnancy zone protein	0007566 // embryo implantation // inferred from genetic interaction//0010496 // negative regulation of peptidase activity // inferred from electronic annotation//00101