

Supplementary Data Table 1. All significantly upregulated genes in the lungs from the pups of diabetic dam relative to controls

Source Reference	Symbol	Gene Name	FC	P-Value
NM_172333.1	Cthrc1	collagen triple helix repeat containing 1	1.45	7.81E-07
NM_012976.1	Lgals5	lectin, galactose binding, soluble 5	3.77	1.63E-06
XM_232684.3	RGD1309085	similar to F23N19.9	1.42	3.23E-06
XM_001076037.1	RGD1561730	similar to cell surface receptor FDFACT	1.46	6.78E-06
NM_001013853.1	GloA	Globin apha	2.75	8.20E-06
XM_340824.3	Efnb3	ephrin B3	1.32	9.09E-06
NM_031056.1	Mmp14	matrix metalloproteinase 14 (membrane-inserted)	1.28	2.47E-05
XM_001060542.1	RGD1306105	similar to RIKEN cDNA 2610318G18	1.32	3.02E-05
NM_053826.2	Pdk1	pyruvate dehydrogenase kinase, isoenzyme 1	1.31	3.98E-05
XM_001070663.1	Stfa3	stefin A3	1.94	4.05E-05
XM_215270.3	Nt5c2	5'-nucleotidase, cytosolic II	1.24	4.09E-05
NM_017000.2	Nqo1	NAD(P)H dehydrogenase, quinone 1	1.48	5.07E-05
XM_228566.4	Gdpd2	glycerophosphodiester phosphodiesterase domain containing 2	1.45	5.41E-05
XM_346964.2	LOC361349	hypothetical LOC361349	1.50	6.64E-05

XM_214443.3	Ecm2	extracellular matrix protein 2, female organ and adipocyte specific	1.27	7.68E-05
XM_001081230.1	Coll1a1	collagen, type 1, alpha 1	1.36	8.00E-05
NM_012750.1	Gfra2	glial cell line derived neurotrophic factor family receptor alpha 2	1.28	8.31E-05
XM_001071590.1	Ramp	regeneration associated muscle protease	1.41	8.47E-05
NM_130408.1	Cyp26a1	cytochrome P450, family 26, subfamily A, polypeptide 1	1.36	8.82E-05
NM_013198.1	Maob	monoamine oxidase B	1.31	9.48E-05
XM_001064747.1	Olfml3	olfactomedin-like 3	1.34	9.62E-05
NM_031792.1	Spag4	sperm associated antigen 4	1.31	9.72E-05
XM_001056068.1	Gli1	GLI-Kruppel family member GLI1	1.47	0.000120
XM_001081157.1	Cpxm1	carboxypeptidase X (M14 family), member 1	1.42	0.000126
NM_053650.1	Pdlim3	PDZ and LIM domain 3	1.28	0.000128
XM_342332.3	Rwdd3	RWD domain containing 3	1.28	0.000131
NM_001030034.1	Rhbdf1	rhomboid 5 homolog 1 (Drosophila)	1.70	0.000144
NM_001012741.1	Lipg	lipase, endothelial	1.39	0.000150
XM_343305.3	RGD1306001	similar to 2210021J22Rik protein	1.36	0.000154
NM_053850.1	Blvra	biliverdin reductase A	1.35	0.000161
XM_222716.4	Hmcn1	hemicentin 1	1.38	0.000164

XM_001070116.1	RGD1562607	serine/threonine/tyrosine interacting protein	1.26	0.000173
NM_017223.2	Slc20a2	solute carrier family 20, member 2	1.28	0.000186
XM_576459.2	Ppp2r3a	protein phosphatase 2 (formerly 2A), regulatory subunit B", alpha	1.24	0.000198
XM_001055826.1	RGD1308165	similar to hypothetical protein MGC17337 (predicted)	1.21	0.000204
XM_001080721.1	Trpm4	transient receptor potential cation channel, subfamily M, member 4	1.21	0.000234
NM_053699.1	Cited4	Cbp/p300-interacting transactivator	1.25	0.000253
NM_031557.2	Ptgis	prostaglandin I2 (prostacyclin) synthase	1.38	0.000274
XM_342653.3	Flnc	filamin C, gamma (actin binding protein 280)	1.47	0.000327
NM_080394.2	Reln	reelin	1.26	0.000328
XM_001069697.1	Seli	selenoprotein I	1.34	0.000330
XM_001061189.1	Wdr60	WD repeat domain 60	1.23	0.000332
XM_001072254.1	Podxl2	podocalyxin-like 2	1.38	0.000372
XM_221956.3	Micall2	MICAL-like 2	1.25	0.000396
XM_238327.4	Prrx2	paired related homeobox 2	1.27	0.000399
NM_001004129.1	Stfa2l1	stefin A2-like 1	1.71	0.000424
XM_234373.4	Ttc8	tetratricopeptide repeat domain 8	1.22	0.000436
XM_343508.2	Toag1	tolerance-associated gene 1	1.20	0.000448

NM_138826.4	Mt1a	metallothionein 1a	1.52	0.000448
NM_053380.1	Slc34a2	solute carrier family 34 (sodium phosphate), member 2	1.25	0.000482
XM_001063211.1	Rbm3	RNA binding motif (RNP1, RRM) protein 3	1.31	0.000482
NM_032085.1	Col3a1	collagen, type III, alpha 1	1.26	0.000483
XM_001076030.1	Aplp1	amyloid beta (A4) precursor-like protein 1	1.29	0.000507
NM_001024316.1	Gata5	GATA binding protein 5	1.28	0.000508
NM_001007020.1	Hmgn3	high mobility group nucleosomal binding domain 3	1.22	0.000509
NM_001034148.1	Nmi	N-myc (and STAT) interactor	1.35	0.000530
XM_573586.1	RGD1565068	hypothetical gene supported by NM_053330	1.36	0.000540
NM_017306.3	Dci	dodecenoyl-coenzyme A delta isomerase	1.21	0.000593
NM_031050.1	Lum	lumican	1.31	0.000650
NM_001014008.1	Aspn	asporin	1.57	0.000663
XM_345570.2	Ptch2	patched homolog 1	1.37	0.000702
NM_145775.1	Nr1d1	nuclear receptor subfamily 1, group D, member 1	1.53	0.000703
NM_031585.1	Pla2g1b	phospholipase A2, group IB	1.23	0.000721
NM_078617.2	Rps23	ribosomal protein S23	1.20	0.000723
NM_001037649.1	Rbm43	RNA binding motif protein 43	1.38	0.000783

XM_001077181.1	Papss1	3'-phosphoadenosine 5'-phosphosulfate synthase 1	1.27	0.000789
NM_001012123.1	C1qtnf5	C1q and tumor necrosis factor related protein 5	1.22	0.000800
NM_173103.1	Clcnkb	chloride channel Kb	1.23	0.000809
NM_031747.1	Cnn1	calponin 1	1.42	0.000824
XM_227314.4	Sfrp2	secreted frizzled-related protein 2	1.46	0.000916
XM_342693.3	Ggct	gamma-glutamyl cyclotransferase	1.27	0.000926
XM_342281.3	Muc1	mucin 1, transmembrane	1.20	0.000932
XM_001062997.1	LOC685246	hypothetical protein LOC685246	1.22	0.000953

Supplementary Data Table 2. All significantly downregulated genes in the lungs from the pups of diabetic dam relative to controls

Source Reference	Symbol	Gene Name	FC	P-Value
XM_001075218.1	Ms4a1	membrane-spanning 4-domains, subfamily A, member 1	-1.82	3.79E-08
XM_574695.1	RGD1564078	similar to oocyte-testis gene 1	-1.72	4.57E-08
NM_133533.2	Cd79b	CD79B antigen	-1.80	1.88E-07
NM_001004258.1	Nudt19	nudix (nucleoside diphosphate linked moiety X)-type motif 19	-1.66	1.87E-06
NM_001013430.1	Rhoh	ras homolog gene family, member H	-1.43	2.22E-06
XM_001079542.1	Prkcb1	protein kinase C, beta 1	-1.48	2.82E-06
NM_001012173.1	Trub1	TruB pseudouridine (psi) synthase homolog 1 (E. coli)	-1.39	3.45E-06
XM_340957.2	Igsf7	immunoglobulin superfamily, member 7	-1.70	3.50E-06
NM_172034.2	Fntb	farnesyltransferase, CAAX box, beta	-1.48	4.00E-06
XM_579453.1	Gcnt1	glucosaminyl (N-acetyl) transferase 1, core 2	-1.51	5.05E-06
NM_012758.1	Syk	spleen tyrosine kinase	-1.36	5.24E-06
NM_017031.2	Pde4b	phosphodiesterase 4B, cAMP specific	-1.84	5.89E-06
NM_053591.1	Dpep1	dipeptidase 1 (renal)	-1.46	1.18E-05
NM_030848.1	Bst1	bone marrow stromal cell antigen 1	-1.70	1.64E-05

NM_001025750.1	Plek	pleckstrin	-1.52	1.92E-05
NM_022524.1	Srpx	sushi-repeat-containing protein	-1.38	2.12E-05
NM_017230.1	Padi3	peptidyl arginine deiminase, type III	-1.26	2.42E-05
NM_001031825.1	Gp9	glycoprotein IX (platelet)	-1.36	2.75E-05
XM_001071501.1	St8sia4	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 4	-1.28	2.82E-05
XM_001070947.1	RGD1562136	similar to D1Ert622e protein	-1.32	3.16E-05
NM_053930.3	Sept5	septin 5	-1.77	3.70E-05
NM_001012469.1	Il21r	interleukin 21 receptor	-1.21	3.83E-05
NM_024385.1	Hhex	hematopoietically expressed homeobox	-1.33	4.00E-05
XM_344042.2	RGD1564318	similar to immunoglobulin light chain variable region	-1.58	4.14E-05
NM_012715.1	Adm	adrenomedullin	-1.31	4.36E-05
NM_001024289.1	Ptpcrap	protein tyrosine phosphatase, receptor type, C-associated protein	-1.36	4.61E-05
XM_001061682.1	Hist1h2bp	histone cluster 1, H2bp	-1.39	5.01E-05
NM_173141.1	Tfpi2	tissue factor pathway inhibitor 2	-1.28	5.03E-05
NM_001004280.1	Mmadhc	methylmalonic aciduria (cobalamin deficiency) cblD type	-1.24	5.16E-05
NM_134327.1	Cd69	Cd69 molecule	-1.42	5.18E-05
NM_012792.1	Fmo1	flavin containing monooxygenase 1	-1.43	5.74E-05

NM_001012086.1	Cytip	cytohesin 1 interacting protein	-1.25	6.50E-05
NM_001033894.1	Jakmip1	janus kinase and microtubule interacting protein 1	-1.24	6.53E-05
XM_001069255.1	Dok3	docking protein 3	-1.28	6.99E-05
NM_053372.1	Slpi	secretory leukocyte peptidase inhibitor	-1.29	7.17E-05
NM_031345.1	Tsc22d3	TSC22 domain family 3	-1.45	8.25E-05
XM_001069791.1	Itgb2	integrin beta 2	-1.21	8.33E-05
XM_001075258.1	Slc39a4	solute carrier family 39 (zinc transporter), member 4	-1.37	8.62E-05
NM_001024344.1	Sit1	signaling threshold regulating transmembrane adaptor 1	-1.33	8.74E-05
XM_344661.3	Reep5	receptor accessory protein 5	-1.36	9.42E-05
XM_220058.2	Ifit1lb	interferon-induced protein with tetratricopeptide repeats 1-like B	-1.36	9.62E-05
XM_001078963.1	Usp43	ubiquitin specific protease 43	-1.26	0.000103
NM_053348.1	Fetub	fetuin beta	-1.39	0.000105
NM_013122.1	Igfbp2	insulin-like growth factor binding protein 2	-1.24	0.000106
XM_001060014.1	RGD1309095	similar to hypothetical protein BC015148	-1.26	0.000113
NM_012791.1	Dyrk1a	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 1A	-1.24	0.000113
NM_012661.1	Sts	steroid sulfatase	-1.29	0.000115
NM_012798.1	Mal	myelin and lymphocyte protein, T-cell differentiation protein	-1.37	0.000119



NM_001029916.1	Depdc7	DEP domain containing 7	-1.39	0.000129
XM_573653.2	Myo1g	myosin IG	-1.34	0.000136
NM_017124.1	Cd37	CD37 antigen	-1.34	0.000147
XM_001075424.1	Ppp4r2	protein phosphatase 4, regulatory subunit 2	-1.31	0.000151
NM_001011987.1	Glipr1	GLI pathogenesis-related 1	-1.25	0.000155
NM_031642.2	Klf6	Kruppel-like factor 6	-1.34	0.000156
XM_580173.1	LOC501211	LOC501211	-1.54	0.000156
NM_001024273.1	Cmah	cytidine monophosphate-N-acetylneuraminic acid hydroxylase pseudogene	-1.33	0.000157
NM_031010.2	Alox15	arachidonate 15-lipoxygenase	-1.75	0.000157
NM_001009541.1	Ier2	immediate early response 2	-1.26	0.000161
XM_001074055.1	Fcrla	Fc receptor-like A	-1.72	0.000166
NM_001009671.1	Coq10b	coenzyme Q10 homolog B ( <i>S. cerevisiae</i> )	-1.39	0.000173
XM_001067631.1	Pdgfra	platelet derived growth factor receptor, alpha polypeptide	-1.37	0.000182
NM_031686.1	Scn7a	sodium channel, voltage-gated, type VII, alpha	-1.53	0.000184
XM_001070215.1	Prg4	proteoglycan 4, (megakaryocyte stimulating factor)	-1.35	0.000189
NM_021835.3	Jun	Jun oncogene	-1.31	0.000204
XM_001067782.1	Samhd1	SAM domain and HD domain, 1	-1.27	0.000209

NM_053385.1	Prelp	proline arginine-rich end leucine-rich repeat protein	-1.27	0.000220
NM_053854.1	Nat2	N-Acetyltransferase-2 (arylamine N-acetyltransferase)	-1.24	0.000220
XM_001066530.1	Col15a1	collagen, type XV	-1.29	0.000230
NM_182816.2	Amigo2	adhesion molecule with Ig like domain 2	-1.26	0.000231
XM_341056.2	Upk3b	uroplakin 3B	-2.22	0.000237
NM_001004228.1	Emcn	endomucin	-1.26	0.000242
XM_001057359.1	Pex19	peroxisomal biogenesis factor 19	-1.36	0.000248
XM_222031.4	RGD1561143	similar to cell surface receptor FDFACT	-1.27	0.000252
NM_182738.1	Chp2	calcineurin B homologous protein 2	-1.26	0.000255
NM_001025719.1	RGD1311307	similar to 1300014I06Rik protein	-1.23	0.000258
XM_001067013.1	Chchd8	coiled-coil-helix-coiled-coil-helix domain containing 8	-1.21	0.000260
XM_001061730.1	Fam25a	family with sequence similarity 25, member A	-1.59	0.000261
XM_236646.2	Ngp	neutrophilic granule protein	-1.31	0.000261
XM_001065725.1	Ctla2a	cytotoxic T lymphocyte-associated protein 2 alpha	-1.23	0.000263
XM_341195.2	Igj	immunoglobulin joining chain	-1.40	0.000266
XM_342524.3	Plcb1	phospholipase C, beta 1	-1.45	0.000266
XM_001070698.1	Zswim3	zinc finger, SWIM domain containing 3	-1.31	0.000269

NM_012823.1	Anxa3	annexin A3	-1.28	0.000273
NM_001012224.1	Nfe2	nuclear factor, erythroid derived 2	-1.22	0.000278
NM_001024242.1	Ctsw	cathepsin W	-1.34	0.000280
NM_024140.2	Nrgn	neurogranin	-1.34	0.000292
NM_145680.3	Gimap5	GTPase, IMAP family member 5	-1.24	0.000293
NM_032077.1	Pon1	paraoxonase 1	-1.45	0.000296
XM_574280.1	RGD1561927	similar to Ab2-143	-1.47	0.000297
NM_030829.1	Gprk5	G protein-coupled receptor kinase 5	-1.24	0.000299
NM_001007674.1	Slc25a19	solute carrier family 25, member 19	-1.27	0.000300
NM_012880.1	Sod3	superoxide dismutase 3, extracellular	-1.31	0.000302
NM_019178.1	Tlr4	toll-like receptor 4	-1.35	0.000304
NM_199376.1	Sil1	endoplasmic reticulum chaperone SIL1 homolog ( <i>S. cerevisiae</i> )	-1.23	0.000307
XM_001060913.1	Kif11	kinesin family member 11	-1.25	0.000311
XM_001069691.1	Grm3	glutamate receptor, metabotropic 3	-1.34	0.000315
NM_001024236.1	Gtf2h3	general transcription factor IIIH, polypeptide 3	-1.21	0.000315
NM_031598.1	Pla2g2a	phospholipase A2, group IIA (platelets, synovial fluid)	-2.12	0.000315
NM_203325.1	Mup5	major urinary protein 5	-1.41	0.000325

NM_019232.1	Sgk	serum/glucocorticoid regulated kinase	-1.51	0.000327
NM_013036.2	Sstr4	somatostatin receptor 4	-1.30	0.000330
XM_001064272.1	Crim1	cysteine rich transmembrane BMP regulator 1 (chordin like)	-2.03	0.000354
NM_012912.1	Atf3	activating transcription factor 3	-1.20	0.000381
NM_138848.1	Podxl	podocalyxin-like	-1.22	0.000398
NM_053391.1	Hs3st1	heparan sulfate (glucosamine) 3-O-sulfotransferase 1	-1.26	0.000399
NM_031543.1	Cyp2e1	cytochrome P450, family 2, subfamily e, polypeptide 1	-1.45	0.000417
NM_130399.2	Ada	adenosine deaminase	-1.60	0.000419
XM_224389.3	Pcdh17	protocadherin 17	-1.43	0.000421
NM_001011923.1	Prpf4b	PRP4 pre-mRNA processing factor 4 homolog B (yeast)	-1.27	0.000426
XM_001079231.1	RGD1564452	similar to granulocyte macrophage CSF signaling molecule	-1.20	0.000433
XM_341534.2	Trg@	T cell receptor gamma locus	-1.33	0.000443
XM_575535.1	LOC500183	similar to NGF-binding Ig light chain	-1.34	0.000454
XM_001080140.1	Spn	sialophorin	-1.23	0.000455
NM_012728.1	Glp1r	glucagon-like peptide 1 receptor	-1.42	0.000457
NM_031022.1	Cspg4	chondroitin sulfate proteoglycan 4	-1.48	0.000460
XM_344168.3	Vamp4	vesicle-associated membrane protein 4	-1.33	0.000478

XM_001071895.1	Setmar	SET domain and mariner transposase fusion gene	-1.30	0.000482
NM_031655.1	Lxn	latexin	-1.21	0.000485
NM_017330.2	Prf1	perforin 1 (pore forming protein)	-1.27	0.000509
XM_001068272.1	Fam180a	family with sequence similarity 180, member A	-1.45	0.000538
NM_001025688.1	Palmd	palmdelphin	-1.35	0.000549
NM_001013975.1	RGD1307119	hypothetical LOC303743	-1.36	0.000578
XM_001065047.1	Ubash3b	ubiquitin associated and SH3 domain containing, B	-1.25	0.000583
XM_001062261.1	LOC682605	similar to Major urinary protein precursor (MUP) (Alpha-2u-globulin)	-1.30	0.000599
XM_001080259.1	E2f8	E2F transcription factor 8	-1.27	0.000614
NM_032074.1	Irs3	insulin receptor substrate 3	-1.20	0.000626
NM_012548.1	Edn1	endothelin 1	-1.49	0.000635
XM_579374.1	LOC497681	hypothetical gene supported by NM_013126	-1.21	0.000639
NM_001008353.1	Mkks	McKusick-Kaufman syndrome protein	-1.37	0.000648
XM_578326.1	RGD1559943	similar to Ig kappa chain V-IV region precursor	-1.27	0.000667
NM_022525.2	Gpx3	glutathione peroxidase 3	-1.39	0.000672
NM_001013034.1	Glr2	glutaredoxin 2	-1.25	0.000681
NM_139110.1	Gpr116	G protein-coupled receptor 116	-1.25	0.000686

XM_001066754.1	Gbp1	GC-rich promoter binding protein 1	-1.23	0.000690
XM_001068837.1	Clec1b	C-type lectin domain family 1, member b	-1.41	0.000700
NM_053349.1	Sox11	SRY-box containing gene 11	-1.32	0.000703
XM_001055585.1	Gca	granalcin	-1.25	0.000717
NM_181550.1	Sqstm1	sequestosome 1	-1.20	0.000740
NM_001013194.1	Tssc4	tumor suppressing subtransferable candidate 4	-1.23	0.000744
XM_235818.4	Jrkl	jerky homolog-like (mouse)	-1.22	0.000749
NM_144737.2	Fmo2	flavin containing monooxygenase 2	-1.95	0.000754
NM_001009649.1	Lpxn	leupaxin	-1.24	0.000770
XM_346611.2	Nr2f1	nuclear receptor subfamily 2, group F, member 1	-1.32	0.000781
XM_233815.3	Cdc42ep3	CDC42 effector protein (Rho GTPase binding) 3	-1.28	0.000790
XM_580072.1	LOC500488	LOC500488	-1.25	0.000808
NM_017225.1	Pctp	phosphatidylcholine transfer protein	-1.21	0.000825
XM_214029.4	Gnpda2	glucosamine-6-phosphate deaminase 2	-1.92	0.000841
XM_001067597.1	Plac8	placenta-specific 8	-1.37	0.000851
NM_012523.1	Cd53	CD53 antigen	-1.26	0.000882
XM_577971.1	RGD1564296	similar to Ac1147	-1.20	0.000891

NM_012492.2	Adrb2	adrenergic receptor, beta 2	-1.25	0.000901
XM_579642.1	LOC497701	hypothetical gene supported by NM_134459	-1.30	0.000919
NM_031069.1	Nell1	NEL-like 1 (chicken)	-1.49	0.000941
NM_173339.1	Ceacam10	CEA-related cell adhesion molecule 10	-1.40	0.000955