



## **Supplemental Material to:**

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**Rat retinal transcriptome: Effects of aging and AMD**

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Supplemental Table 1. Primers for real-time PCR.

Gene name	Primer (5'-3')	Size of product (bp)	Accession number
<b>Cryab</b>	F: TGAACCTGGACGTGAAGCAC R: GACTCCATCCGATGACAGGG	197	NM_012935.3
<b>Cryba2</b>	F: GACTTCCAGGGACAGCAGTT R: CCCCTCAAACAGGGTCCACAC	156	NM_173140.1
<b>Crygb</b>	F: TGCTCTATGAGCGACCCAAC R: CCTCATTCTGTAAGTGCCCGA	146	NM_001109875.1
<b>Crygd</b>	F: GGCTGCCAGTACTTCCTTCG R: TGGAATCGGTCCTGGAGAGAG	194	NM_033095.1
<b>Crygs</b>	F: TCTCAGTAGTGCGGGAGTCA R: GGTACGAGCGGAAGTCTACG	135	NM_001109553.1
<b>Lgsn</b>	F: ACACTCGGGACAATGCTCAG R: ACGGGGCATGAAAACCTCCAT	197	NM_181383.2
<b>Lim2</b>	F: GATCCTGTCTGCCCTGTGTG R: GCCGAGGAAACTAACGGTGA	181	NM_053771.1
<b>Nos2</b>	F: TGGGCTGGAAGCCCCGCTAT R: GGCAGGCAGCGCATACCACT	176	NM_012611.3
<b>Rpl30</b>	F: CATCTTGCGTCTGATCTTG R: TCAGAGTCTGTTTGTACCCC	158	NM_022699.3
<b>Lig4</b>	F: TTCGGCTGGACTGGGATTTAC R: GAGCACAAGTCTGCAAAGGG	123	NM_001106095.1
<b>Crabp1</b>	F: AAGACATCCACTACGGTGCG R: AGCTCTCGGGTCCAGTAAGT	182	NM_001105716.1
<b>Acadm</b>	F: AGTGTCGAGCACAACACACA R: GGCGACCGGGATTATTTCT	137	NM_016986.2
<b>Txn1</b>	F: TTCCTTGAAGTAGACGTGGATGAC R: AGAGAACTCCCCAACCTTTTGAC	111	NM_053800.3
<b>Dio1</b>	F: GTGGTGGACACAATGCAGAAC R: GGATTGTAGTTCCAAGGGCCA	122	NM_021653.3
<b>Crb1</b>	F: GCACCTGCCATAAAGACCCT R: CCATTGTGGCAAGGGCTAGA	112	NM_001107182.1
<b>Pcdh21</b>	F: CAGCTTTGACCCCAGCACTA R: TCGGAGATGCTGATGATGGC	123	NM_053572.1

Supplemental Table 2. The average expression of the most highly expressed genes at ages 3 and 18 months. Reads per gene represent a quantitative measure of expression levels.

Gene	Reads counts at 3 month	Reads counts at 18 month
Rho	155737,1	147865,9
Gnat1	93119,08	88554,97
Sag	49749,49	52217,97
Gnb1	23995,4	22181,65
Prph2	19395,42	16820,67
Gngt1	18848,73	17804,54
Pdc	17465,97	15363,28
Pde6a	16539,84	15176,32
Aldoa	15315,71	15665,29

Rom1	15228,82	14141,81
Atp1a3	14476,09	14868,77
Pde6b	14132,11	12961,27
Atp1b2	12206,73	11650,19
Rbp3	11862,6	13587
Pcdh21	11547,78	13390
Clstn1	10996,93	13281

Supplemental Table 3. Altered expression of mitochondrial genes.

<b>Altered expression of mitochondrial genes: comparison of 3mo OXYS vs. 3mo Wistar</b>		
-3.56	RGD1309350	similar to transthyretin (4L369)
-3.11	Perp	PERP, TP53 apoptosis effector
-2.94	Bcl2l10	BCL2-like 10 (apoptosis facilitator)
-2.86	Anxa1	annexin A1
-2.48	Txn1	thioredoxin 1
-2.14	Lyn	v-src-1 Yamaguchi sarcoma viral related oncogene homolog
-2.13	Ak3	adenylate kinase 3
-1.92	Tspo	translocator protein
-1.87	Cml1	camello-like 1
-1.84	Ndufa10	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex 10
-1.71	Ass1	argininosuccinate synthetase 1
-1.57	Acadsb	acyl-Coenzyme A dehydrogenase, short/branched chain
1.49	Mapk12	mitogen-activated protein kinase 12
1.51	Mrpl38	mitochondrial ribosomal protein L38
1.52	Ndufaf4	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, assembly factor 4
1.57	Nit2	nitrilase family, member 2
1.59	Acadm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
2.59	Mrps10	mitochondrial ribosomal protein S10
3.82	Serhl2	serine hydrolase-like 2
<b>Altered expression of mitochondrial genes: comparison of 18mo OXYS vs. 18mo Wistar</b>		
-11.55	Cps1	carbamoyl-phosphate synthetase 1, mitochondrial
-9.01	Cd36	similar to fatty acid translocase/CD36; CD36 molecule (thrombospondin receptor)
-5.55	Cox8b	cytochrome c oxidase, subunit 8B
-3.02	Shmt1	serine hydroxymethyltransferase 1 (soluble)
-2.76	Perp	PERP, TP53 apoptosis effector
-2.31	RGD1309350	similar to transthyretin (4L369)
-2.17	Tspo	translocator protein
-2.07	Rab3d	RAB3D, member RAS oncogene family
-2.04	Glrx1	glutaredoxin 1 (thioltransferase)
-2.03	Txn1	thioredoxin 1

-1.91	Clybl	citrate lyase beta like
-1.84	Car5b	carbonic anhydrase 5b, mitochondrial
-1.76	Decr1	2,4-dienoyl CoA reductase 1, mitochondrial
-1.61	Ndufa10	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex 10
-1.54	Hspa1a	heat shock 70kD protein 1B (mapped); heat shock 70kD protein 1A
-1.50	Acs15	acyl-CoA synthetase long-chain family member 5
1.51	Aadat	aminoadipate aminotransferase
1.61	Ehhadh	enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase
1.83	Mrps10	mitochondrial ribosomal protein S10
1.96	Acadm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
2.09	Nipsnap3b	nipsnap homolog 3A ( <i>C. elegans</i> )
2.49	Cyp11b2	cytochrome P450, subfamily 11B, polypeptide 2
2.81	Cyp11b1	cytochrome P450, subfamily 11B, polypeptide 1
3.22	Serhl2	serine hydrolase-like 2
<b>Altered expression of mitochondrial genes: comparison of 18mo Wistar vs. 3mo Wistar</b>		
-3.51	Mthfd2	Bifunctional methylenetetrahydrofolate dehydrogenase/cyclohydrolase, mitochondrial
-1.68	RGD1305089	similar to 1110008L16Rik protein
-1.47	Acadm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
1.63	Arg2	arginase type II
12.39	Nags	N-acetylglutamate synthase
<b>Altered expression of mitochondrial genes: comparison of 18mo OXYS vs. 3mo OXYS</b>		
-3.40	Pln	phospholamban
-2.15	Abhd10	abhydrolase domain containing 10
-1.72	Eln	elastin
-1.51	Nd4l	NADH-ubiquinone oxidoreductase chain 4L
1.58	Ass1	argininosuccinate synthetase 1
1.59	Aadat	aminoadipate aminotransferase
1.62	Cds2	CDP-diacylglycerol synthase (phosphatidate cytidyltransferase) 2
1.72	Slc25a30	solute carrier family 25, member 30
11.04	Nags	N-acetylglutamate synthase

**For Tables S4–7, please download each file individually at:**

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Supplemental Table 8.

**Table 1. The most representative enriched GO categories for differentially expressed genes in retinas 3 vs 18- month-old Wistar rats.**

Ensemble ID	Log2-Fold Change	Gene name	Description
<b>Carboxylic acid metabolic process----GO:0019752, adjP=7.32e-05</b>			
ENSRNOG00000019023	-0.62	Tars	threonyl-tRNA synthetase
ENSRNOG00000007546	-0.91	Asns	asparagine synthetase
ENSRNOG00000008839	1.69	Pparg	peroxisome proliferator-activated receptor gamma
ENSRNOG00000000925	-0.71	Psph	phosphoserine phosphatase
ENSRNOG00000032959	1.51	Adh7	alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide
ENSRNOG00000008798	-1.43	Pipox	pipecolic acid oxidase
ENSRNOG00000010833	-1.81	Mthfd2	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2, methenyltetrahydrofolate cyclohydrolase
ENSRNOG00000023116	0.86	Tmem195	transmembrane protein 195
ENSRNOG00000009845	-0.56	Acaadm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
ENSRNOG00000020651	-0.82	Cars	cysteinyl-tRNA synthetase
ENSRNOG00000013770	1.17	Folh1	folate hydrolase
ENSRNOG00000018404	-0.46	Aars	alanyl-tRNA synthetase
ENSRNOG00000001821	3.49	Adipoq	adiponectin, C1Q and collagen domain containing

ENSRNOG000000 10805	1 .06	Fabp 4	fatty acid binding protein 4, adipocyte
ENSRNOG000000 31004	1 .08	Cyp 2j4	cytochrome P450, family 2, subfamily J, polypeptide 4
ENSRNOG000000 11139	0 .70	Arg 2	arginase type II
ENSRNOG000000 20879	3 .63	Nag s	N-acetylglutamate synthase
<b>Extracellular region part----GO:0044421, adjP=0.0002</b>			
ENSRNOG000000 24115	2 .01	C6	complement component 6
ENSRNOG000000 18951	- 0.81	Col4 a5	collagen, type IV, alpha 5
ENSRNOG000000 09848	1 .57	Il18	interleukin 18
ENSRNOG000000 02843	d own	Cxcl 6	chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)
ENSRNOG000000 11292	- 1.62	Col1 a2	collagen, type I, alpha 2
ENSRNOG000000 06025	1 .19	Lam b3	laminin, beta 3
ENSRNOG000000 03897	- 1.63	Col1 a1	collagen, type I, alpha 1
ENSRNOG000000 03357	- 1.88	Col3 a1	collagen, type III, alpha 1
ENSRNOG000000 02792	- 2.15	Cxcl 2	chemokine (C-X-C motif) ligand 2
ENSRNOG000000 17237	- 0.87	Lam a1	laminin, alpha 1
ENSRNOG000000 33564	1 .65	Cfd	complement factor D (adipsin)
ENSRNOG000000 28043	- 3.64	Cxcl 3	chemokine (C-X-C motif) ligand 3

ENSRNOG000000 12840	- 0.61	Spar c	secreted protein, acidic, cysteine-rich (osteonectin)
ENSRNOG000000 19661	- 1.55	Gdf 15	growth differentiation factor 15
ENSRNOG000000 01821	3 .49	Adip oq	adiponectin, C1Q and collagen domain containing
ENSRNOG000000 04517	- 0.75	Igfl	insulin-like growth factor 1
ENSRNOG000000 12660	- 0.73	Post n	periostin, osteoblast specific factor
<b>Response to stress----GO:0006950, adjP=0.0004</b>			
ENSRNOG000000 01152	2 .51	Glp1 r	glucagon-like peptide 1 receptor
ENSRNOG000000 24115	2 .01	C6	complement component 6
ENSRNOG000000 21798	2 .19	Pgly rp4	peptidoglycan recognition protein 4
ENSRNOG000000 07546	- 0.91	Asns	asparagine synthetase
ENSRNOG000000 08839	1 .69	Ppar g	peroxisome proliferator-activated receptor gamma
ENSRNOG000000 30183	- 0.63	Plod 2	procollagen lysine, 2-oxoglutarate 5- dioxygenase 2
ENSRNOG000000 09848	1 .57	Il18	interleukin 18
ENSRNOG000000 14688	2 .18	Prkc g	protein kinase C, gamma
ENSRNOG000000 02843	d own	Cxcl 6	chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)
ENSRNOG000000 03897	- 1.63	Col1 a1	collagen, type I, alpha 1
ENSRNOG000000 10833	- 1.81	Mthf d2	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2,

			methenyltetrahydrofolate cyclohydrolase
ENSRNOG000000 03357	- 1.88	Col3 a1	collagen, type III, alpha 1
ENSRNOG000000 23214	1 .77	Il20r b	interleukin 20 receptor beta
ENSRNOG000000 09845	- 0.56	Aca dm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
ENSRNOG000000 02792	- 2.15	Cxcl 2	chemokine (C-X-C motif) ligand 2
ENSRNOG000000 33564	1 .65	Cfd	complement factor D (adipsin)
ENSRNOG000000 14683	2 .97	Il1rl 2	interleukin 1 receptor-like 2
ENSRNOG000000 28043	- 3.64	Cxcl 3	chemokine (C-X-C motif) ligand 3
ENSRNOG000000 18404	- 0.46	Aars	alanyl-tRNA synthetase
ENSRNOG000000 12840	- 0.61	Spar c	secreted protein, acidic, cysteine-rich (osteonectin)
ENSRNOG000000 13948	0 .64	Zc3 hav1	zinc finger CCCH type, antiviral 1
ENSRNOG000000 13673	- 0.69	Msh 3	mutS homolog 3 (E. coli)
ENSRNOG000000 10805	1 .06	Fabp 4	fatty acid binding protein 4, adipocyte
ENSRNOG000000 01821	3 .49	Adip oq	adiponectin, C1Q and collagen domain containing
ENSRNOG000000 04517	- 0.75	Igf1	insulin-like growth factor 1
ENSRNOG000000 18796	- 0.49	Herp ud1	homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
<b>Collagen----GO:0005581, adjP=0.0003</b>			
ENSRNOG000000	-	Col	collagen, type I, alpha 2



11292	1.62	1a2	
ENSRNOG000000 03897	- 1.63	Col 1a1	collagen, type I, alpha 1
ENSRNOG000000 03357	- 1.88	Col 3a1	collagen, type III, alpha 1
ENSRNOG000000 18951	- 0.81	Col 4a5	collagen, type IV, alpha 5
<b>Regulation of blood pressure----GO:0008217, adjP=0.0004</b>			
ENSRNOG000000 01821	3 .49	Ad ipoq	adiponectin, C1Q and collagen domain containing
ENSRNOG000000 08080	0 .65	Hr h3	histamine receptor H3
ENSRNOG000000 01152	2 .51	Gl p1r	glucagon-like peptide 1 receptor
ENSRNOG000000 11292	- 1.62	Col 1a2	collagen, type I, alpha 2
ENSRNOG000000 08839	1 .69	Pp arg	peroxisome proliferator-activated receptor gamma
ENSRNOG000000 14684	0 .76	Np r1	natriuretic peptide receptor A/guanylate cyclase A (atriuretic peptide receptor A)
ENSRNOG000000 25757	0 .65	My h6	myosin, heavy chain 6, cardiac muscle, alpha
<b>Immune system process----GO:0002376, adjP=0.0024</b>			
ENSRNOG000000 24115	2 .01	C6	complement component 6
ENSRNOG000000 08839	1 .69	Pp arg	peroxisome proliferator-activated receptor gamma
ENSRNOG000000 09848	1 .57	Il1 8	interleukin 18
ENSRNOG000000 11483	- 3.24	S1 00a9	S100 calcium binding protein A9
ENSRNOG000000 02843	d own	Cx cl6	chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)

ENSRNOG000000 03357	- 1.88	Col 3a1	collagen, type III, alpha 1
ENSRNOG000000 29191	- 2.24	LO C685067	similar to guanylate binding protein family, member 6
ENSRNOG000000 32240	- 1.53	Gb p5	guanylate binding protein 5
ENSRNOG000000 23214	1 .77	Il2 0rb	interleukin 20 receptor beta
ENSRNOG000000 02792	- 2.14	Cx cl2	chemokine (C-X-C motif) ligand 2
ENSRNOG000000 33564	1 .65	Cf d	complement factor D (adipsin)
ENSRNOG000000 14683	2 .97	Il1r l2	interleukin 1 receptor-like 2
ENSRNOG000000 28043	- 3.64	Cx cl3	chemokine (C-X-C motif) ligand 3
ENSRNOG000000 13948	0 .64	Zc 3hav1	zinc finger CCCH type, antiviral 1
ENSRNOG000000 13673	- 0.69	Ms h3	mutS homolog 3 (E. coli)
ENSRNOG000000 01821	3 .49	Ad ipoq	adiponectin, C1Q and collagen domain containing
ENSRNOG000000 01372	- 0.66	Oa s1b	2-5 oligoadenylate synthetase 1B
<b>Inflammatory response----GO:0006954, adjP=0.0050</b>			
ENSRNOG000000 24115	2 .01	C6	complement component 6
ENSRNOG000000 02792	- 2.15	Cx cl2	chemokine (C-X-C motif) ligand 2
ENSRNOG000000 08839	1 .69	Pp arg	peroxisome proliferator-activated receptor gamma
ENSRNOG000000 28043	- 3.64	Cx cl3	chemokine (C-X-C motif) ligand 3

ENSRNOG000000 33564	1 .65	Cf d	complement factor D (adipsin)
ENSRNOG000000 10805	1 .06	Fa bp4	fatty acid binding protein 4, adipocyte
ENSRNOG000000 02843	d own	Cx cl6	chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)
ENSRNOG000000 23214	1 .77	Il2 0rb	interleukin 20 receptor beta
<b>Response to wounding----GO:0009611, adjP=0.0056</b>			
ENSRNOG000000 24115	2 .01	C6	complement component 6
ENSRNOG000000 02792	- 2.15	Cx cl2	chemokine (C-X-C motif) ligand 2
ENSRNOG000000 08839	1 .69	Pp arg	peroxisome proliferator-activated receptor gamma
ENSRNOG000000 28043	- 3.64	Cx cl3	chemokine (C-X-C motif) ligand 3
ENSRNOG000000 33564	1 .65	Cf d	complement factor D (adipsin)
ENSRNOG000000 12840	- 0.61	Sp arc	secreted protein, acidic, cysteine-rich (osteonectin)
ENSRNOG000000 10805	1 .06	Fa bp4	fatty acid binding protein 4, adipocyte
ENSRNOG000000 02843	d own	Cx cl6	chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)
ENSRNOG000000 03357	- 1.88	Col 3a1	collagen, type III, alpha 1
ENSRNOG000000 04517	- 0.75	Igf 1	insulin-like growth factor 1
ENSRNOG000000 23214	1 .77	Il2 0rb	interleukin 20 receptor beta
<b>Cytokine activity----GO:0005125, adjP=0.0163</b>			
ENSRNOG000000	-	Cx	chemokine (C-X-C motif) ligand 2

02792	2.15	cl2	
ENSRNOG000000 02843	d own	Cx cl6	chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)
ENSRNOG000000 28043	- 3.64	Cx cl3	chemokine (C-X-C motif) ligand 3
ENSRNOG000000 19661	- 1.55	Gd fl5	growth differentiation factor 15
ENSRNOG000000 09848	1 .57	Il1 8	interleukin 18

**Table 2. The most representative enriched GO categories for differentially expressed genes in retinas 3 vs 18- month-old senescent-accelerated OXYS rats with retinopathy.**

Ensemble ID	Log2 Fold Change	Gene name	Description
<b>Extracellular region part GO:0044421, adjP=2.33e-08</b>			
ENSRNOG000000 24115	- 2.99	C6	complement component 6
ENSRNOG000000 12471	- 1.26	Thbs 4	thrombospondin 4
ENSRNOG000000 09848	1 .14	Il18	interleukin 18
ENSRNOG000000 11292	- 2.26	Col1 a2	collagen, type I, alpha 2
ENSRNOG000000 06025	0 .77	Lam b3	laminin, beta 3
ENSRNOG000000 03897	- 2.21	Col1 a1	collagen, type I, alpha 1
ENSRNOG000000 01469	- 0.78	Eln	elastin
ENSRNOG000000 03357	- 2.45	Col3 a1	collagen, type III, alpha 1
ENSRNOG000000 03312	0 .69	Chi3 11	chitinase 3-like 1
ENSRNOG000000	-	Col1	collagen, type XII, alpha 1

10510	0.64	2a1	
ENSRNOG000000 16695	- 1.43	Mm p2	matrix metalloproteinase 2
ENSRNOG000000 17392	1 .85	Fgf2	fibroblast growth factor 2
ENSRNOG000000 09390	3 .38	Edn 2	endothelin 2
ENSRNOG000000 03254	1 .22	Il23 a	Interleukin 23, alpha subunit p19
ENSRNOG000000 12216	- 0.94	Tgfb i	transforming growth factor, beta induced
ENSRNOG000000 03172	- 0.99	Serp infl	serine (or cysteine) peptidase inhibitor, clade F, member 1
ENSRNOG000000 04712	- 1.30	Ang ptl1	angiopoietin-like 1
ENSRNOG000000 01249	- 1.16	Col6 a1	collagen, type VI, alpha 1
ENSRNOG000000 08749	- 0.65	Col5 a1	collagen, type V, alpha 1
ENSRNOG000000 15410	- 2.02	Asp n	asporin
ENSRNOG000000 04610	- 2.08	Lum	lumican
<b>Collagen GO:0005581, adjP=4.26e-08</b>			
ENSRNOG000000 10510	- 0.64	Col1 2a1	collagen, type XII, alpha 1
ENSRNOG000000 11292	- 2.26	Col1 a2	collagen, type I, alpha 2
ENSRNOG000000 03897	- 2.21	Col1 a1	collagen, type I, alpha 1
ENSRNOG000000 03357	- 2.45	Col3 a1	collagen, type III, alpha 1
ENSRNOG000000 08749	- 0.65	Col5 a1	collagen, type V, alpha 1

ENSRNOG000000 04610	- 2.08	Lum	lumican
<b>Vasculature development GO:0001944, adjP=6.64e-05</b>			
ENSRNOG000000 16695	- 1.43	Mm p2	matrix metallopeptidase 2
ENSRNOG000000 09131	1 .05	Zc3 h12a	zinc finger CCCH type containing 12A
ENSRNOG000000 17392	1 .85	Fgf2	fibroblast growth factor 2
ENSRNOG000000 09848	1 .14	Il18	interleukin 18
ENSRNOG000000 03172	- 0.99	Serp infl	serine (or cysteine) peptidase inhibitor, clade F, member 1
ENSRNOG000000 11292	- 2.26	Col1 a2	collagen, type I, alpha 2
ENSRNOG000000 03897	- 2.21	Col1 a1	collagen, type I, alpha 1
ENSRNOG000000 18839	0 .59	Ntrk 2	neurotrophic tyrosine kinase, receptor, type 2
ENSRNOG000000 03357	- 2.45	Col3 a1	collagen, type III, alpha 1
ENSRNOG000000 01469	- 0.78	Eln	elastin
ENSRNOG000000 08749	- 0.65	Col5 a1	collagen, type V, alpha 1
<b>MHC class I protein complex GO:0042612, adjP=0.0001</b>			
ENSRNOG000000 32596	1 .78	RT1 -T24-1	RT1 class I, locus T24, gene 1
ENSRNOG000000 27873	- 4.47	RT1 -M1-4	RT1 class I, locus M1, gene 4
ENSRNOG000000 00723	1 .05	RT1 -CE5	RT1 class I, locus CE5
ENSRNOG000000	-	RT1	RT1 class I, locus1

21604	1.54	-CE1	
ENSRNOG000000 33136	2 .15	RT1 -M5	RT1 class Ib, locus M5
<b>Response to wounding GO:0009611, adjP=0.0027</b>			
ENSRNOG000000 16695	- 1.43	Mm p2	matrix metalloproteinase 2
ENSRNOG000000 24115	- 2.99	C6	complement component 6
ENSRNOG000000 05392	0 .51	Ngfr	nerve growth factor receptor (TNFR superfamily, member 16)
ENSRNOG000000 32788	- 0.85	Dysf	dysferlin
ENSRNOG000000 17392	1 .85	Fgf2	fibroblast growth factor 2
ENSRNOG000000 03254	1 .22	Il23 a	Interleukin 23, alpha subunit p19
ENSRNOG000000 10805	- 2.49	Fabp 4	fatty acid binding protein 4, adipocyte
ENSRNOG000000 03172	- 0.99	Serp infl	serine (or cysteine) peptidase inhibitor, clade F, member 1
ENSRNOG000000 08837	0 .66	Ass1	argininosuccinate synthetase 1
ENSRNOG000000 03357	- 2.45	Col3 a1	collagen, type III, alpha 1
ENSRNOG000000 08749	- 0.65	Col5 a1	collagen, type V, alpha 1
<b>Antigen processing and presentation GO:0019882, adjP=0.0046</b>			
ENSRNOG000000 32596	1 .78	RT1 -T24-1	RT1 class I, locus T24, gene 1
ENSRNOG000000 27873	- 4.47	RT1 -M1-4	RT1 class I, locus M1, gene 4
ENSRNOG000000 00723	1 .06	RT1 -CE5	RT1 class I, locus CE5

ENSRNOG000000 21604	- 1.54	RT1 -CE1	RT1 class I, locus 1
ENSRNOG000000 33136	2 .15	RT1 -M5	RT1 class Ib, locus M5
<b>Immune response----GO:0006955, adjP=0.0104</b>			
ENSRNOG000000 24115	- 2.99	C6	complement component 6
ENSRNOG000000 32596	1 .78	RT1 -T24-1	RT1 class I, locus T24, gene 1
ENSRNOG000000 27873	- 4.47	RT1 -M1-4	RT1 class I, locus M1, gene 4
ENSRNOG000000 00723	1 .06	RT1 -CE5	RT1 class I, locus CE5
ENSRNOG000000 13948	1 .13	Zc3 hav1	zinc finger CCCH type, antiviral 1
ENSRNOG000000 09848	1 .14	Il18	interleukin 18
ENSRNOG000000 33136	2 .15	RT1 -M5	RT1 class Ib, locus M5
ENSRNOG000000 03254	1 .22	Il23 a	Interleukin 23, alpha subunit p19
ENSRNOG000000 03357	- 2.45	Col3 a1	collagen, type III, alpha 1
ENSRNOG000000 21604	- 1.54	RT1 -CE1	RT1 class I, locus 1
<b>Cell adhesion----GO:0007155, adjP=0.0104</b>			
ENSRNOG000000 16695	- 1.43	M mp2	matrix metalloproteinase 2
ENSRNOG000000 32656	1 .10	Ptp rt	protein tyrosine phosphatase, receptor type, T
ENSRNOG000000 10510	- 0.64	Col 12a1	collagen, type XII, alpha 1
ENSRNOG000000	-	Col	collagen, type XIV, alpha 1



26415	0.71	14a1	
ENSRNOG0000000 12471	- 1.26	Th bs4	thrombospondin 4
ENSRNOG0000000 20095	0 .72	Pc dhb3	protocadherin beta 3
ENSRNOG0000000 09848	1 .14	Il1 8	interleukin 18
ENSRNOG0000000 03897	- 2.21	Col 1a1	collagen, type I, alpha 1
ENSRNOG0000000 03357	- 2.45	Col 3a1	collagen, type III, alpha 1
ENSRNOG0000000 08749	- 0.65	Col 5a1	collagen, type V, alpha 1

**Table 3. The most representative enriched GO categories for differentially expressed genes in retinas between 3-month-old OXYS rats and Wistar rats.**

Ensemble ID	Log2-Fold Change	Gene name	Description
<b>Immune response---GO:0006955, adjP=1.12e-07</b>			
ENSRNOG0000000 8180	- 1.10	Ly n	v-yes-1 Yamaguchi sarcoma viral related oncogene homolog
ENSRNOG0000000 0321	- 1.33	Cd 24	CD24 molecule
ENSRNOG00000001 7414	- 1.58	Irf 7	interferon regulatory factor 7
ENSRNOG0000000 7390	- 0.50	Nf kbia	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
ENSRNOG00000001 4605	- 1.93	Lig 4	ligase IV, DNA, ATP-dependent
ENSRNOG0000000 2792	- 3.63	Cx cl2	chemokine (C-X-C motif) ligand 2
ENSRNOG0000000 0723	- 1.08	RT 1-CE5	RT1 class I, locus CE5
ENSRNOG0000000	-	Tlr	toll-like receptor 2

9822	0.96	2	
ENSRNOG00000002 8814	- 1.12	Oa sl2	2'-5' oligoadenylate synthetase-like 2
ENSRNOG00000003 1138	- 1.41	Irg m	immunity-related GTPase family, M
ENSRNOG00000001 3170	- 0.70	Il1 3ra1	interleukin 13 receptor, alpha 1
ENSRNOG00000000 4575	- 3.07	Il1 a	interleukin 1 alpha
ENSRNOG00000003 6673	- 1.88	Sec tm1b	secreted and transmembrane 1B
ENSRNOG00000000 0763	- 0.91	RT 1-M3-1	RT1 class Ib, locus M3, gene 1
ENSRNOG00000000 6418	- 1.24	Sa mhd1	SAM domain and HD domain, 1
ENSRNOG00000000 5871	- 1.46	Il1r n	interleukin 1 receptor antagonist
ENSRNOG00000001 6995	- 2.61	Za p70	zeta-chain (TCR) associated protein kinase
ENSRNOG00000001 5441	- 2.39	Il4r a	interleukin 4 receptor, alpha
ENSRNOG00000000 9848	- 1.22	Il1 8	interleukin 18
ENSRNOG00000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG00000000 0456	- 1.26	Ps mb8	proteasome (prosome, macropain) subunit, beta type 8 (large multifunctional peptidase 7)
ENSRNOG00000001 3634	- 0.71	My d88	myeloid differentiation primary response gene 88
ENSRNOG00000003 2240	- 2.30	Gb p5	guanylate binding protein 5
ENSRNOG00000002 9191	- 2.58	LO C685067	similar to guanylate binding protein family, member 6

8768	ENSRNOG0000002	-	Gb	guanylate binding protein 4
		2.64	p4	
2802	ENSRNOG0000000	-	Cx	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
		2.32	cl1	
1369	ENSRNOG0000000	-	Oa	2'-5' oligoadenylate synthetase 1A
		1.73	s1a	
8455	ENSRNOG0000003	-	Gp	glutathione peroxidase 2
		1.44	x2	
3948	ENSRNOG0000001	-	Zc	zinc finger CCCH type, antiviral 1
		1.00	3hav1	
3254	ENSRNOG0000000	-	Il2	Interleukin 23, alpha subunit p19
		1.76	3a	
7539	ENSRNOG0000000	-	Rs	radical S-adenosyl methionine domain containing 2
		2.33	ad2	
0795	ENSRNOG0000000	-	RT	RT1 class Ib, locus N3
		0.75	1-N3	
1187	ENSRNOG0000000	-	Oa	2'-5'-oligoadenylate synthetase-like
		1.36	sl	
0021	ENSRNOG0000003	-	Ccl	chemokine (C-C motif) ligand 6
		1.17	6	
0777	ENSRNOG0000000	-	RT	RT1 class Ib, locus S3
		1.83	1-S3	
<b>Response to virus---GO:0009615, adjP=4.77e-07</b>				
1959	ENSRNOG0000000	-	Mx	myxovirus (influenza virus) resistance 1
		2.58	1	
1369	ENSRNOG0000000	-	Oa	2'-5' oligoadenylate synthetase 1A
		1.73	s1a	
3948	ENSRNOG0000001	-	Zc	zinc finger CCCH type, antiviral 1
		1.00	3hav1	
7539	ENSRNOG0000000	-	Rs	radical S-adenosyl methionine domain containing 2
		2.33	ad2	
3254	ENSRNOG0000000	-	Il2	Interleukin 23, alpha subunit p19
		1.76	3a	
	ENSRNOG0000000	-	Tnf	tumor necrosis factor (TNF superfamily,

0837	2.74		member 2)
ENSRNOG00000000 1963	- 1.68	Mx 2	myxovirus (influenza virus) resistance 2
ENSRNOG00000001 3634	- 0.71	My d88	myeloid differentiation primary response gene 88
ENSRNOG00000001 7414	- 1.58	Irf 7	interferon regulatory factor 7
ENSRNOG00000001 8151	- 0.93	Isg 20	interferon stimulated exonuclease gene 20
ENSRNOG00000000 6418	- 1.24	Sa mhd1	SAM domain and HD domain, 1
ENSRNOG00000001 7395	- 3.16	Du ox2	dual oxidase 2
<b>Defense response----GO:0006952, adjP=3.97e-06</b>			
ENSRNOG00000001 7469	- 1.51	An xa1	annexin A1
ENSRNOG00000000 5871	- 1.46	Il1r n	interleukin 1 receptor antagonist
ENSRNOG00000001 5441	N A	Il4r a	interleukin 4 receptor, alpha
ENSRNOG00000001 0626	- 0.81	Sp hk1	sphingosine kinase 1
ENSRNOG00000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG00000000 8180	- 1.10	Ly n	v-yes-1 Yamaguchi sarcoma viral related oncogene homolog
ENSRNOG00000000 0321	- 1.33	Cd 24	CD24 molecule
ENSRNOG00000002 0811	- 0.71	Il6r a	interleukin 6 receptor, alpha
ENSRNOG00000001 3634	- 0.71	My d88	myeloid differentiation primary response gene 88
ENSRNOG00000000 8837	- 0.78	As s1	argininosuccinate synthetase 1

1163	ENSRNOG0000003	-	Nf	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, zeta
7390	ENSRNOG0000000	-	Nf	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
9077	ENSRNOG0000001	-	Lip	lipase A, lysosomal acid, cholesterol esterase
2792	ENSRNOG0000000	-	Cx	chemokine (C-X-C motif) ligand 2
2802	ENSRNOG0000000	-	Cx	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
1023	ENSRNOG0000001	-	No	nitric oxide synthase 2, inducible
8043	ENSRNOG0000002	-	Cx	chemokine (C-X-C motif) ligand 3
8455	ENSRNOG0000003	-	Gp	glutathione peroxidase 2
6396	ENSRNOG0000000	-	Sd	syndecan 1
0901	ENSRNOG0000000	-	Crc	calcitonin gene-related peptide-receptor component
9822	ENSRNOG0000000	-	Tlr	toll-like receptor 2
3948	ENSRNOG0000001	-	Zc	zinc finger CCCH type, antiviral 1
1138	ENSRNOG0000003	-	Irg	immunity-related GTPase family, M
7539	ENSRNOG0000000	-	Rs	radical S-adenosyl methionine domain containing 2
3254	ENSRNOG0000000	-	Il2	Interleukin 23, alpha subunit p19
4575	ENSRNOG0000000	-	Il1	interleukin 1 alpha
0763	ENSRNOG0000000	-	RT	RT1 class Ib, locus M3, gene 1

2470	ENSRNOG0000000	-	Ifi4	interferon gamma inducible protein 47
6418	ENSRNOG0000000	1.54	7	
6330	ENSRNOG0000000	-	Sa	SAM domain and HD domain, 1
		1.24	mhd1	
6330	ENSRNOG0000000	-	Elf	E74-like factor 3
		1.50	3	
<b>Inflammatory response----GO:0006954, adjP=0.0001</b>				
7469	ENSRNOG0000001	-	An	annexin A1
		1.51	xa1	
5871	ENSRNOG0000000	-	Il1r	interleukin 1 receptor antagonist
		1.46	n	
5441	ENSRNOG0000001	N	Il4r	interleukin 4 receptor, alpha
		A	a	
0626	ENSRNOG0000001	-	Sp	sphingosine kinase 1
		0.81	hk1	
0837	ENSRNOG0000000	-	Tnf	tumor necrosis factor (TNF superfamily, member 2)
		2.74		
8180	ENSRNOG0000000	-	Ly	v-yes-1 Yamaguchi sarcoma viral related oncogene homolog
		1.10	n	
0321	ENSRNOG0000000	-	Cd	CD24 molecule
		1.33	24	
8837	ENSRNOG0000000	-	As	argininosuccinate synthetase 1
		0.78	s1	
1163	ENSRNOG0000003	-	Nf	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, zeta
		1.36	kbiz	
9077	ENSRNOG0000001	-	Lip	lipase A, lysosomal acid, cholesterol esterase
		0.72	a	
2792	ENSRNOG0000000	-	Cx	chemokine (C-X-C motif) ligand 2
		3.63	cl2	
2802	ENSRNOG0000000	-	Cx	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
		2.32	cl1	
8043	ENSRNOG0000002	-	Cx	chemokine (C-X-C motif) ligand 3
		5.21	cl3	
	ENSRNOG0000003	-	Gp	glutathione peroxidase 2

8455	1.44	x2	
ENSRNOG0000000	-	Sd	syndecan 1
6396	1.58	c1	
ENSRNOG0000000	-	Crc	calcitonin gene-related peptide-receptor
0901	1.17	p	component
ENSRNOG0000000	-	Il2	Interleukin 23, alpha subunit p19
3254	1.76	3a	
ENSRNOG0000000	-	Il1	interleukin 1 alpha
4575	3.07	a	
ENSRNOG0000000	-	Elf	E74-like factor 3
6330	1.50	3	
<b>Response to wounding----GO:0009611, adjP=0.0009</b>			
ENSRNOG00000001	-	An	annexin A1
7469	1.51	xa1	
ENSRNOG0000000	-	Il1r	interleukin 1 receptor antagonist
5871	1.46	n	
ENSRNOG00000001	N	Il4r	interleukin 4 receptor, alpha
5441	A	a	
ENSRNOG00000001	-	Sp	sphingosine kinase 1
0626	0.81	hk1	
ENSRNOG0000000	-	Tnf	tumor necrosis factor (TNF superfamily, member 2)
0837	2.74		
ENSRNOG00000001	-	An	annexin A2
0362	1.16	xa2	
ENSRNOG0000000	-	Ly	v-yes-1 Yamaguchi sarcoma viral related oncogene homolog
8180	1.10	n	
ENSRNOG0000000	-	Cd	CD24 molecule
0321	1.33	24	
ENSRNOG0000000	-	As	argininosuccinate synthetase 1
8837	0.78	s1	
ENSRNOG00000003	-	Nf	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, zeta
1163	1.36	kbiz	
ENSRNOG00000001	-	Lip	lipase A, lysosomal acid, cholesterol
9077	0.72	a	esterase

ENSRNOG0000000	-	Cx	chemokine (C-X-C motif) ligand 2
2792	3.63	cl2	
ENSRNOG0000000	-	Cx	chemokine (C-X-C motif) ligand 1
2802	2.32	cl1	(melanoma growth stimulating activity, alpha)
ENSRNOG0000000	0	Slc	solute carrier family 1 (glial high affinity
5479	.61	1a2	glutamate transporter), member 2
ENSRNOG0000002	-	Cx	chemokine (C-X-C motif) ligand 3
8043	5.21	cl3	
ENSRNOG0000003	-	Gp	glutathione peroxidase 2
8455	1.44	x2	
ENSRNOG0000000	-	Sd	syndecan 1
6396	1.58	c1	
ENSRNOG0000000	-	Crc	calcitonin gene-related peptide-receptor
0901	1.17	p	component
ENSRNOG0000002	-	An	annexin A8
0270	1.37	xa8	
ENSRNOG0000001	-	Fgf	fibroblast growth factor 2
7392	1.71	2	
ENSRNOG0000000	-	Il2	Interleukin 23, alpha subunit p19
3254	1.76	3a	
ENSRNOG0000000	-	Il1	interleukin 1 alpha
4575	3.07	a	
ENSRNOG0000001	-	Tfp	tissue factor pathway inhibitor 2
0513	1.02	i2	
ENSRNOG0000002	-	Ho	HOP homeobox
4689	0.97	px	
ENSRNOG0000000	-	Elf	E74-like factor 3
6330	1.50	3	
<b>Response to stress---GO:0006950, adjP=0.0027</b>			
ENSRNOG0000000	-	As	asparagine synthetase
7546	1.00	ns	
ENSRNOG0000001	-	Sp	sphingosine kinase 1
0626	0.81	hk1	
ENSRNOG0000001	-	Aq	aquaporin 4



6043	0.50	p4	
ENSRNOG00000001 0362	- 1.16	An xa2	annexin A2
ENSRNOG00000000 8180	- 1.10	Ly n	v-yes-1 Yamaguchi sarcoma viral related oncogene homolog
ENSRNOG00000000 0321	- 1.33	Cd 24	CD24 molecule
ENSRNOG00000001 5750	- 3.86	Wn t7b	wingless-type MMTV integration site family, member 7B
ENSRNOG00000002 0811	- 0.71	Il6r a	interleukin 6 receptor, alpha
ENSRNOG00000003 1163	- 1.36	Nf kbiz	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, zeta
ENSRNOG00000000 7390	- 0.50	Nf kbia	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
ENSRNOG00000001 4605	- 1.93	Lig 4	ligase IV, DNA, ATP-dependent
ENSRNOG00000001 9077	- 0.72	Lip a	lipase A, lysosomal acid, cholesterol esterase
ENSRNOG00000000 2792	- 3.63	Cx cl2	chemokine (C-X-C motif) ligand 2
ENSRNOG00000002 8043	- 5.21	Cx cl3	chemokine (C-X-C motif) ligand 3
ENSRNOG00000000 0901	- 1.17	Crc p	calcitonin gene-related peptide-receptor component
ENSRNOG00000000 9822	- 0.96	Tlr 2	toll-like receptor 2
ENSRNOG00000002 0270	- 1.37	An xa8	annexin A8
ENSRNOG00000001 7392	- 1.71	Fgf 2	fibroblast growth factor 2
ENSRNOG00000003 1138	- 1.41	Irg m	immunity-related GTPase family, M
ENSRNOG00000000	-	Cd	cell division cycle 2, G1 to S and G2 to

0632	1.54	c2	M
ENSRNOG00000000 4575	- 3.07	III a	interleukin 1 alpha
ENSRNOG00000000 1216	- 0.78	Trp m2	transient receptor potential cation channel, subfamily M, member 2
ENSRNOG00000000 0763	- 0.91	RT 1-M3-1	RT1 class Ib, locus M3, gene 1
ENSRNOG00000001 0513	- 1.02	Tfp i2	tissue factor pathway inhibitor 2
ENSRNOG00000000 6418	- 1.24	Sa mhd1	SAM domain and HD domain, 1
ENSRNOG00000000 6330	- 1.50	Elf 3	E74-like factor 3
ENSRNOG00000001 2772	- 1.35	Nq o1	NAD(P)H dehydrogenase, quinone 1
ENSRNOG00000001 7469	- 1.51	An xa1	annexin A1
ENSRNOG00000000 5871	- 1.46	IIIr n	interleukin 1 receptor antagonist
ENSRNOG00000002 9528	1 .04	Cb s	cystathionine beta synthase
ENSRNOG00000000 2164	- 1.45	N mu	neuromedin U
ENSRNOG00000001 5441	N A	II4r a	interleukin 4 receptor, alpha
ENSRNOG00000000 9848	- 1.22	III 8	interleukin 18
ENSRNOG00000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG00000000 8837	- 0.78	As s1	argininosuccinate synthetase 1
ENSRNOG00000001 3634	- 0.71	My d88	myeloid differentiation primary response gene 88
ENSRNOG00000000	0	Ac	acyl-Coenzyme A dehydrogenase, C-4 to

9845	.67	adm	C-12 straight chain
ENSRNOG0000000 2802	- 2.32	Cx cl1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
ENSRNOG0000000 2331	- 1.51	Al dh3a1	aldehyde dehydrogenase 3 family, member A1
ENSRNOG0000001 1023	- 2.21	No s2	nitric oxide synthase 2, inducible
ENSRNOG0000000 5479	0 .61	Slc 1a2	solute carrier family 1 (glial high affinity glutamate transporter), member 2
ENSRNOG0000000 6396	- 1.58	Sd c1	syndecan 1
ENSRNOG0000003 8455	- 1.44	Gp x2	glutathione peroxidase 2
ENSRNOG0000001 3948	- 1.00	Zc 3hav1	zinc finger CCCH type, antiviral 1
ENSRNOG0000002 7513	- 0.91	Rte l1	regulator of telomere elongation helicase 1
ENSRNOG0000000 7539	- 2.33	Rs ad2	radical S-adenosyl methionine domain containing 2
ENSRNOG0000000 3254	- 1.76	Il2 3a	Interleukin 23, alpha subunit p19
ENSRNOG0000003 6842	0 .90	Sm ug1	single-strand-selective monofunctional uracil-DNA glycosylase 1
ENSRNOG0000003 2404	- 1.61	To p2a	topoisomerase (DNA) II alpha
ENSRNOG0000003 2813	0 .77	Md c1	mediator of DNA damage checkpoint 1
ENSRNOG0000002 4689	- 0.97	Ho px	HOP homeobox
ENSRNOG0000000 2470	- 1.54	Ifi4 7	interferon gamma inducible protein 47
<b>Calcium-mediated signaling----GO:0019722, adjP=0.0027</b>			
ENSRNOG0000000 6470	1 .30	Ca mk1g	calcium/calmodulin-dependent protein kinase IG

ENSRNOG00000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG00000000 0321	- 1.33	Cd 24	CD24 molecule
ENSRNOG00000001 6995	- 2.61	Za p70	zeta-chain (TCR) associated protein kinase
ENSRNOG00000001 0626	- 0.81	Sp hk1	sphingosine kinase 1
ENSRNOG00000000 9390	- 3.52	Ed n2	endothelin 2
ENSRNOG00000001 1954	1 .26	Kis slr	KISS1 receptor
<b>Leukocyte migration----GO:0050900, adjP=0.0046</b>			
ENSRNOG00000001 1483	- 2.24	S1 00a9	S100 calcium binding protein A9
ENSRNOG00000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG00000000 0321	- 1.33	Cd 24	CD24 molecule
ENSRNOG00000000 2792	- 3.63	Cx cl2	chemokine (C-X-C motif) ligand 2
ENSRNOG00000000 2802	- 2.32	Cx cl1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
ENSRNOG00000002 8043	- 5.21	Cx cl3	chemokine (C-X-C motif) ligand 3
ENSRNOG00000000 9822	- 0.96	Tlr 2	toll-like receptor 2
ENSRNOG00000000 9390	- 3.52	Ed n2	endothelin 2
<b>Cytokine production----GO:0001816, adjP=0.0046</b>			
ENSRNOG00000001 9077	- 0.72	Lip a	lipase A, lysosomal acid, cholesterol esterase
ENSRNOG00000000 8144	- 1.06	Irf 1	interferon regulatory factor 1

ENSRNOG0000000	-	Tlr	toll-like receptor 2
9822	0.96	2	
ENSRNOG00000001	-	Sp	sphingosine kinase 1
0626	0.81	hk1	
ENSRNOG00000000	-	Il1	interleukin 18
9848	1.22	8	
ENSRNOG00000000	-	Tnf	tumor necrosis factor (TNF superfamily, member 2)
0837	2.74		
ENSRNOG00000000	-	Il1	interleukin 1 alpha
4575	3.07	a	
ENSRNOG00000000	-	Ly	v-yes-1 Yamaguchi sarcoma viral related oncogene homolog
8180	1.10	n	
ENSRNOG00000000	-	Cd	CD24 molecule
0321	1.33	24	
ENSRNOG00000002	-	Il6r	interleukin 6 receptor, alpha
0811	0.71	a	
ENSRNOG00000000	-	RT	RT1 class Ib, locus M3, gene 1
0763	0.91	1-M3-1	
ENSRNOG00000001	-	My	myeloid differentiation primary response gene 88
3634	0.71	d88	
ENSRNOG00000001	-	Irf	interferon regulatory factor 7
7414	1.58	7	
<b>Epithelial cell differentiation----GO:0030855, adjP=0.0083</b>			
ENSRNOG00000001	-	An	annexin A1
7469	1.51	xa1	
ENSRNOG00000002	-	Cst	cystatin A (stefin A)
3953	2.21	a	
ENSRNOG00000000	-	Em	epithelial membrane protein 1
8676	1.47	p1	
ENSRNOG00000002	-	Up	uroplakin 1B
7380	1.98	k1b	
ENSRNOG00000002	-	Scel	sciellin
4237	1.58	l	
ENSRNOG00000000	N	Krt	keratin 14

3899	A	14	
ENSRNOG00000000 7484	- 1.60	Ehf	ets homologous factor
ENSRNOG00000000 9563	- 2.06	Krt 2	keratin 2
ENSRNOG00000000 4414	- 1.16	F1 1r	F11 receptor
ENSRNOG00000000 6330	- 1.50	Elf 3	E74-like factor 3
<b>Regulation of cell proliferation----GO:0042127, adjP=0.0083</b>			
ENSRNOG00000001 7469	- 1.51	An xa1	annexin A1
ENSRNOG00000001 6995	- 2.61	Za p70	zeta-chain (TCR) associated protein kinase
ENSRNOG00000000 8144	- 1.06	Irf 1	interferon regulatory factor 1
ENSRNOG00000001 0626	- 0.81	Sp hk1	sphingosine kinase 1
ENSRNOG00000000 9848	- 1.22	Il1 8	interleukin 18
ENSRNOG00000000 3033	0 .60	Plc d3	phospholipase C, delta 3
ENSRNOG00000002 7037	- 1.51	Al ox12	arachidonate 12-lipoxygenase
ENSRNOG00000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG00000000 8180	- 1.10	Ly n	v-yes-1 Yamaguchi sarcoma viral related oncogene homolog
ENSRNOG00000000 0321	- 1.33	Cd 24	CD24 molecule
ENSRNOG00000002 0811	- 0.71	Il6r a	interleukin 6 receptor, alpha
ENSRNOG00000001 3634	- 0.71	My d88	myeloid differentiation primary response gene 88

ENSRNOG0000000	-	Ser	serine (or cysteine) peptidase inhibitor, clade B, member 5
2640	2.18	pinb5	
ENSRNOG0000000	-	My	v-myc myelocytomatosis viral related oncogene, neuroblastoma derived (avian)
6308	0.77	cn	
ENSRNOG0000000	-	Nf	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
7390	0.50	kbia	
ENSRNOG00000001	-	Lig	ligase IV, DNA, ATP-dependent
4605	1.93	4	
ENSRNOG0000000	-	Al	aldehyde dehydrogenase 3 family, member A1
2331	1.51	dh3a1	
ENSRNOG00000001	-	No	nitric oxide synthase 2, inducible
1023	2.21	s2	
ENSRNOG0000000	0	Nd	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, assembly factor 4
7506	.60	ufaf4	
ENSRNOG00000001	-	Fgf	fibroblast growth factor 2
7392	1.71	2	
ENSRNOG0000000	-	Cd	cell division cycle 2, G1 to S and G2 to M
0632	1.54	c2	
ENSRNOG0000000	-	Ed	endothelin 2
9390	3.52	n2	
ENSRNOG00000001	-	Il1	interleukin 13 receptor, alpha 1
3170	0.70	3ra1	
ENSRNOG0000000	-	Il1	interleukin 1 alpha
4575	3.07	a	
ENSRNOG0000000	-	Klf	Kruppel-like factor 5
8785	1.68	5	
ENSRNOG00000003	-	Slf	schlafen 2
7113	1.07	n2	
ENSRNOG00000001	1	Kis	KISS1 receptor
1954	.26	s1r	
ENSRNOG00000001	-	Ifit	interferon induced transmembrane protein 3
5078	0.98	m3	
<b>Regulation of hormone levels----GO:0010817, adjP=0.0099</b>			
ENSRNOG00000001	-	Rb	retinol binding protein 2, cellular

3932	2.29	p2	
ENSRNOG0000001 7469	- 1.51	An xa1	annexin A1
ENSRNOG0000000 0582	- 1.76	Dd o	D-aspartate oxidase
ENSRNOG0000001 1023	- 2.21	No s2	nitric oxide synthase 2, inducible
ENSRNOG0000000 5871	- 1.46	Il1r n	interleukin 1 receptor antagonist
ENSRNOG0000000 2164	- 1.45	N mu	neuromedin U
ENSRNOG0000002 5019	2 .93	Di o1	deiodinase, iodothyronine, type I
ENSRNOG0000001 7392	- 1.71	Fgf 2	fibroblast growth factor 2
ENSRNOG0000000 9390	- 3.52	Ed n2	endothelin 2
ENSRNOG0000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG0000000 8180	- 1.10	Ly n	v-yes-1 Yamaguchi sarcoma viral related oncogene homolog
ENSRNOG0000000 1962	- 1.39	Fa m3b	family with sequence similarity 3, member B
ENSRNOG0000001 1954	1 .26	Kis s1r	KISS1 receptor
ENSRNOG0000001 7395	- 3.16	Du ox2	dual oxidase 2
<b>Cellular nitrogen compound metabolic process----GO:0034641, adjP=0.0099</b>			
ENSRNOG0000000 0582	- 1.76	Dd o	D-aspartate oxidase
ENSRNOG0000001 9023	- 0.47	Tar s	threonyl-tRNA synthetase
ENSRNOG0000002 0202	- 0.98	Asr gl1	asparaginase like 1



ENSRNOG00000000 9660	- 5.81	En pp6	ectonucleotide pyrophosphatase/phosphodiesterase 6
ENSRNOG00000000 7546	- 1.00	As ns	asparagine synthetase
ENSRNOG00000002 9528	1 .04	Cb s	cystathionine beta synthase
ENSRNOG00000002 1255	- 1.18	Sm ox	spermine oxidase
ENSRNOG00000000 0925	- 0.65	Psp h	phosphoserine phosphatase
ENSRNOG00000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG00000001 1580	- 1.39	Phf 11	PHD finger protein 11
ENSRNOG00000000 8837	- 0.78	As s1	argininosuccinate synthetase 1
ENSRNOG00000000 7067	- 1.77	Pa di1	peptidyl arginine deiminase, type I
ENSRNOG00000000 9845	0 .67	Ac adm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
ENSRNOG00000002 0651	- 0.81	Car s	cysteinyl-tRNA synthetase
ENSRNOG00000000 3537	- 0.90	Spt a1	spectrin, alpha, erythrocytic 1 (elliptocytosis 2)
ENSRNOG00000001 1023	- 2.21	No s2	nitric oxide synthase 2, inducible
ENSRNOG00000000 9822	- 0.96	Tlr 2	toll-like receptor 2
ENSRNOG00000001 5677	- 1.33	Cd a	cytidine deaminase
ENSRNOG00000001 2843	- 1.92	As pg	asparaginase homolog ( <i>S. cerevisiae</i> )
ENSRNOG00000000 0763	- 0.91	RT 1-M3-1	RT1 class Ib, locus M3, gene 1

<b>Cytokine-mediated signaling pathway----GO:0019221, adjP=0.0166</b>			
ENSRNOG00000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG00000000 4575	- 3.07	Il1 a	interleukin 1 alpha
ENSRNOG00000000 0321	- 1.33	Cd 24	CD24 molecule
ENSRNOG00000002 0811	- 0.71	Il6r a	interleukin 6 receptor, alpha
ENSRNOG00000001 3634	- 0.71	My d88	myeloid differentiation primary response gene 88
ENSRNOG00000000 9390	- 3.52	Ed n2	endothelin 2
ENSRNOG00000001 7395	- 3.16	Du ox2	dual oxidase 2
<b>Anti-apoptosis----GO:0006916, adjP=0.0191</b>			
C=175;O=11;E=3.53;R=3.11;rawP=0.0009;			
ENSRNOG00000001 2473	1 .01	Cfl ar	CASP8 and FADD-like apoptosis regulator
ENSRNOG00000000 5731	- 1.76	Bir c3	baculoviral IAP repeat-containing 3
ENSRNOG00000000 7506	0 .60	Nd ufaf4	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, assembly factor 4
ENSRNOG00000000 0632	- 1.54	Cd c2	cell division cycle 2, G1 to S and G2 to M
ENSRNOG00000000 9308	- 1.56	Bcl 2l10	BCL2-like 10 (apoptosis facilitator)
ENSRNOG00000002 7037	- 1.51	Al ox12	arachidonate 12-lipoxygenase
ENSRNOG00000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG00000000 6419	- 0.80	Av en	apoptosis, caspase activation inhibitor
ENSRNOG00000002	-	Il6r	interleukin 6 receptor, alpha

0811	0.71	a	
ENSRNOG0000001 3634	- 0.71	My d88	myeloid differentiation primary response gene 88
ENSRNOG0000000 7390	- 0.50	Nf kbia	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
<b>Response to glucocorticoid stimulus----GO:0051384, adjP=0.0191</b>			
ENSRNOG0000001 7469	- 1.51	An xa1	annexin A1
ENSRNOG0000000 9845	0 .67	Ac adm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
ENSRNOG0000000 5695	1 .07	Mg p	matrix Gla protein
ENSRNOG0000000 2331	- 1.51	Al dh3a1	aldehyde dehydrogenase 3 family, member A1
ENSRNOG0000000 5871	- 1.46	Il1r n	interleukin 1 receptor antagonist
ENSRNOG0000000 6396	- 1.58	Sd c1	syndecan 1
ENSRNOG0000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG0000002 0811	- 0.71	Il6r a	interleukin 6 receptor, alpha
ENSRNOG0000000 8837	- 0.78	As s1	argininosuccinate synthetase 1
<b>Regulation of JNK cascade----GO:0046328, adjP=0.0207</b>			
ENSRNOG0000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG0000000 4575	- 3.07	Il1 a	interleukin 1 alpha
ENSRNOG0000001 5750	- 3.86	Wn t7b	wingless-type MMTV integration site family, member 7B
ENSRNOG0000000 5871	- 1.46	Il1r n	interleukin 1 receptor antagonist
ENSRNOG0000002	1	Cb	cystathionine beta synthase

9528	.04	s	
ENSRNOG0000001 3634	- 0.71	My d88	myeloid differentiation primary response gene 88
<b>Cytokine activity----GO:0005125, adjP=0.0231</b>			
ENSRNOG0000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG0000000 4575	- 3.07	Il1 a	interleukin 1 alpha
ENSRNOG0000000 2792	- 3.63	Cx cl2	chemokine (C-X-C motif) ligand 2
ENSRNOG0000000 2802	- 2.32	Cx cl1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
ENSRNOG0000002 8043	- 5.21	Cx cl3	chemokine (C-X-C motif) ligand 3
ENSRNOG0000003 0021	- 1.17	Ccl 6	chemokine (C-C motif) ligand 6
ENSRNOG0000001 9661	- 0.83	Gd f15	growth differentiation factor 15
ENSRNOG0000000 9848	- 1.22	Il1 8	interleukin 18
ENSRNOG0000000 3254	- 1.76	Il2 3a	Interleukin 23, alpha subunit p19
<b>Calcium ion binding----GO:0005509, adjP=0.0375</b>			
ENSRNOG0000002 1134	- 1.10	An xa9	annexin A9
ENSRNOG0000001 7469	- 1.51	An xa1	annexin A1
ENSRNOG0000004 3325	4 .33	RG D156223 4	similar to S100 calcium-binding protein, ventral prostate
ENSRNOG0000000 5695	1 .07	Mg p	matrix Gla protein
ENSRNOG0000001 1647	- 1.08	S1 00a6	S100 calcium binding protein A6

1483	ENSRNOG0000001	-	S1	S100 calcium binding protein A9
		2.24	00a9	
0362	ENSRNOG0000001	-	An	annexin A2
		1.16	xa2	
5285	ENSRNOG0000001	-	Lrp	low density lipoprotein receptor-related
		0.89	4	protein 4
9969	ENSRNOG0000003	-	Ds	desmocollin 2
		1.89	c2	
1955	ENSRNOG0000003	-	Cal	calmodulin-like 3
		1.66	ml3	
7067	ENSRNOG0000000	-	Pa	peptidyl arginine deiminase, type I
		1.77	di1	
6632	ENSRNOG0000001	-	Ds	desmoglein 3
		1.58	g3	
2053	ENSRNOG0000001	-	S1	S100 calcium binding protein A16
		0.71	00a16	
9841	ENSRNOG0000002	1	Cd	cadherin 19, type 2
		.08	h19	
3537	ENSRNOG0000000	-	Spt	spectrin, alpha, erythrocytic 1
		0.90	a1	(elliptocytosis 2)
3226	ENSRNOG0000002	-	S1	S100 calcium binding protein A10
		0.84	00a10	
0105	ENSRNOG0000001	-	S1	S100 calcium binding protein A11
		1.17	00a11	(calizzarin)
6647	ENSRNOG0000001	-	Pla	phospholipase A2, group IIC
		1.35	2g2c	
1821	ENSRNOG0000001	-	S1	S100 calcium-binding protein A4
		1.28	00a4	
0270	ENSRNOG0000002	-	An	annexin A8
		1.37	xa8	
7357	ENSRNOG0000003	-	LO	similar to S100 calcium binding protein
		1.61	C685385	A14
2375	ENSRNOG0000003	-	Ca	calpain 13
		1.38	pn13	

8576	ENSRNOG0000002	-	Cal	calmodulin 4
		1.76	m4	
3330	ENSRNOG0000001	0	Pc	protocadherin 21
		.79	dh21	
7395	ENSRNOG0000001	-	Du	dual oxidase 2
		3.16	ox2	
<b>Water transporter activity----GO:0005372, adjP=0.0375</b>				
9797	ENSRNOG0000000	-	Aq	aquaporin 3
		1.83	p3	
6753	ENSRNOG0000001	-	Slc	solute carrier family 14 (urea
		0.84	14a1	transporter), member 1
6043	ENSRNOG0000001	-	Aq	aquaporin 4
		0.50	p4	
<b>Intermediate filament cytoskeleton----GO:0045111, adjP=3.16e-05</b>				
4099	ENSRNOG0000001	-	Krt	keratin 15
		1.50	15	
5248	ENSRNOG0000000	-	Slc	solute carrier family 1 (glutamate/neutral
		0.96	1a4	amino acid transporter), member 4
5994	ENSRNOG0000002	-	Krt	keratin 80
		1.52	80	
4909	ENSRNOG0000002	-	Krt	keratin 78
		3.17	78	
2859	ENSRNOG0000003	-	Krt	keratin 83
		3.48	83	
4087	ENSRNOG0000003	-	Krt	keratin 42
		3.04	42	
4441	ENSRNOG0000001	-	Krt	keratin 16
		4.07	16	
1986	ENSRNOG0000001	-	Krt	keratin 12
		1.85	12	
4070	ENSRNOG0000001	-	Krt	keratin 13
		1.59	13	
3899	ENSRNOG0000000	-	Krt	keratin 14
		2.20	14	

ENSRNOG00000000	-	Krt	keratin 2
9563	2.06	2	
ENSRNOG00000001	-	Krt	keratin 23 (histone deacetylase inducible)
1907	1.64	23	
ENSRNOG00000000	-	Mn	meiosis-specific nuclear structural 1
6009	1.02	s1	
<b>Apoptosis, adjP=0.0017</b>			
ENSRNOG00000000	-	Tnf	tumor necrosis factor (TNF superfamily, member 2)
0837	2.74		
ENSRNOG00000001	1	Cfl	CASP8 and FADD-like apoptosis regulator
2473	.01	ar	
ENSRNOG00000000	-	Irf	interferon regulatory factor 1
8144	1.06	1	
ENSRNOG00000000	-	Bir	baculoviral IAP repeat-containing 3
5731	1.76	c3	
ENSRNOG00000001	-	Irf	interferon regulatory factor 7
7414	1.58	7	
ENSRNOG00000001	-	My	myeloid differentiation primary response gene 88
3634	0.71	d88	
ENSRNOG00000000	-	Nf	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
7390	0.50	kbia	
ENSRNOG00000000	-	Jdp	Jun dimerization protein 2
8224	0.86	2	
ENSRNOG00000002	-	Rip	receptor-interacting serine-threonine kinase 3
0465	0.99	k3	
ENSRNOG00000002	-	An	similar to ankyrin repeat and kinase domain containing 1; ankyrin repeat and kinase domain containing 1
5037	2.64	kk1	
ENSRNOG00000003	-	RG	apoptosis signal regulating kinase
1700	0.70	D130656	
		5	
ENSRNOG00000000	-	Bcl	BCL2-like 10 (apoptosis facilitator)
9308	1.56	2110	
<b>Toll-like receptor signaling pathway, adjP=0.0014</b>			

ENSRNOG00000000 0837	- 2.74	Tnf	tumor necrosis factor (TNF superfamily, member 2)
ENSRNOG00000003 1233	0 .57	Ma pk12	mitogen-activated protein kinase 12
ENSRNOG00000001 3634	- 0.71	My d88	myeloid differentiation primary response gene 88
ENSRNOG00000000 9822	- 0.96	Tlr 2	toll-like receptor 2
ENSRNOG00000001 7414	- 1.58	Irf 7	interferon regulatory factor 7
ENSRNOG00000000 7390	- 0.50	Nf kbia	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
ENSRNOG00000001 4079	- 0.54	Sta t4	signal transducer and activator of transcription 1; signal transducer and activator of transcription 4
<b>S100 calcium-binding protein A, pval=6,9E-6</b>			
ENSRNOG00000002 3226	- 0.84	S1 00a10	S100 calcium binding protein A10
ENSRNOG00000001 0105	- 1.17	S1 00a11	S100 calcium binding protein A11 (calizzarin)
ENSRNOG00000001 2053	- 0.71	S1 00a16	S100 calcium binding protein A16
ENSRNOG00000001 1647	- 1.08	S1 00a6	S100 calcium binding protein A6
ENSRNOG00000001 1483	- 2.24	S1 00a9	S100 calcium binding protein A9
ENSRNOG00000001 1821	- 1.28	S1 00a4	S100 calcium-binding protein A4
ENSRNOG00000003 7357	- 1.61	LO C685385	similar to S100 calcium binding protein A14
<b>(2-5)oligoadenylate synthetase, pval= 1,9E-3</b>			
ENSRNOG00000003 3220	- 2.38	Oa s1k	2'-5' oligoadenylate synthetase 1K
ENSRNOG00000000	-	Oa	2'-5' oligoadenylate synthetase 1A



1369	1.73	sl1a	
ENSRNOG00000002 8814	- 1.12	Oa sl2	2'-5' oligoadenylate synthetase-like 2
ENSRNOG00000000 1187	- 1.36	Oa sl	2'-5'-oligoadenylate synthetase-like
<b>Serine protease-related, pval= 1,9E-3</b>			
ENSRNOG00000002 2353	d own	Kl k13	kallikrein related-peptidase 13
ENSRNOG00000002 2313	- 3.83	Kl k9	kallikrein related-peptidase 9
ENSRNOG00000000 5336	- 1.99	Prs s27	protease, serine 27
ENSRNOG00000003 9698	- 1.97	Prs s22	protease, serine, 22
ENSRNOG00000002 9223	- 1.83	Prs s32	protease, serine, 32
ENSRNOG00000002 9964	- 2.13	Tm prss11g	similar to RIKEN cDNA 9930032O22 gene
ENSRNOG00000002 6650	- 1.74	Tm prss4	similar to transmembrane protease, serine 4; transmembrane protease, serine 4
ENSRNOG00000000 5903	- 1.35	St1 4	suppression of tumorigenicity 14 (colon carcinoma)
ENSRNOG00000000 2002	- 1.56	Tm prss11b	transmembrane protease, serine 11b
ENSRNOG00000000 2006	- 1.89	Tm prss11d	transmembrane protease, serine 11d
ENSRNOG00000000 2005	d own	Tm prss11f	transmembrane protease, serine 11f
<b>Annexin, pval= 2,4E-3</b>			
ENSRNOG00000001 7469	- 1.51	An xa1	annexin A1
ENSRNOG00000001 0362	- 1.16	An xa2	annexin A2
ENSRNOG00000002	-	An	annexin A8

0270	1.37	xa8	
ENSRNOG00000002	-	An	annexin A9
1134	1.10	xa9	

**Table 4. The most representative enriched GO categories for differentially expressed genes in retinas between 18-month-old OXYS rats and Wistar rats.**

Ensemble ID	L log2-Fold Change	Gene name	Description
<b>Response to stress----GO:0006950, adjP=9.42e-08</b>			
ENSRNOG00000001 7369	- 1.36	Mu stn1	musculoskeletal, embryonic nuclear protein 1
ENSRNOG00000001 7927	0 .48	Dr d4	dopamine receptor D4
ENSRNOG00000001 3768	- 1.33	De fb1	defensin beta 1
ENSRNOG00000004 3451	- 1.38	Sp p1	secreted phosphoprotein 1
ENSRNOG00000003 2788	- 0.81	Dy sf	dysferlin
ENSRNOG00000001 0626	- 0.71	Sp hk1	sphingosine kinase 1
ENSRNOG00000001 8991	- 1.27	Gs n	gelsolin
ENSRNOG00000001 0362	- 1.21	An xa2	annexin A2
ENSRNOG00000002 3546	- 1.12	Hs pb1	heat shock protein 1
ENSRNOG00000000 3357	- 0.72	Col 3a1	collagen, type III, alpha 1
ENSRNOG00000003 3526	- 0.62	Hs pa1b	heat shock 70kD protein 1B (mapped)
ENSRNOG00000002 3214	- 2.32	Il2 orb	interleukin 20 receptor beta
ENSRNOG00000001	-	Lig	ligase IV, DNA, ATP-dependent

4605	2.49	4		
ENSRNOG00000000 0655	1 .07	Ptp rc		protein tyrosine phosphatase, receptor type, C
ENSRNOG00000001 1306	- 2.43	My od1		myogenic differentiation 1
ENSRNOG00000003 3564	- 1.91	Cf d		complement factor D (adipsin)
ENSRNOG00000000 0901	- 0.86	Crc p		calcitonin gene-related peptide-receptor component
ENSRNOG00000002 0270	- 1.62	An xa8		annexin A8
ENSRNOG00000000 0632	- 1.45	Cd c2		cell division cycle 2, G1 to S and G2 to M
ENSRNOG00000001 9500	d own	Cy p1a1		cytochrome P450, family 1, subfamily a, polypeptide 1
ENSRNOG00000001 3673	0 .69	Ms h3		mutS homolog 3 (E. coli)
ENSRNOG00000000 1821	- 4.89	Ad ipoq		adiponectin, C1Q and collagen domain containing
ENSRNOG00000003 0111	1 .32	Cy p11b2		cytochrome P450, subfamily 11B, polypeptide 2
ENSRNOG00000001 3704	- 3.53	Cp s1		carbamoyl-phosphate synthetase 1
ENSRNOG00000001 0513	- 1.76	Tfp i2		tissue factor pathway inhibitor 2
ENSRNOG00000000 1216	- 0.60	Trp m2		transient receptor potential cation channel, subfamily M, member 2
ENSRNOG00000000 6418	- 0.76	Sa mhd1		SAM domain and HD domain, 1
ENSRNOG00000000 6330	- 1.20	Elf 3		E74-like factor 3
ENSRNOG00000001 2772	- 2.13	Nq o1		NAD(P)H dehydrogenase, quinone 1
ENSRNOG00000003	-	Ca		calpain 2

4015	0.52	pn2	
ENSRNOG00000002 4115	- 3.22	C6	complement component 6
ENSRNOG00000001 9915	- 0.49	Xr cc1	X-ray repair complementing defective repair in Chinese hamster cells 1
ENSRNOG00000002 1798	- 2.51	Pgl yrp4	peptidoglycan recognition protein 4
ENSRNOG00000000 9848	- 1.66	Il1 8	interleukin 18
ENSRNOG00000001 2155	- 1.32	So x15	SRY (sex determining region Y)-box 15
ENSRNOG00000001 6166	- 1.05	Pdl im1	PDZ and LIM domain 1
ENSRNOG00000001 6289	0 .66	Bm pr1b	bone morphogenetic protein receptor, type IB
ENSRNOG00000001 9673	- 1.32	Zfp 36	zinc finger protein 36
ENSRNOG00000001 5891	- 0.73	Hp s1	Hermansky-Pudlak syndrome 1 homolog (human)
ENSRNOG00000001 6575	- 0.90	Tnf rsf1b	tumor necrosis factor receptor superfamily, member 1b
ENSRNOG00000000 9845	0 .97	Ac adm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
ENSRNOG00000000 1416	0 .48	Vg f	VGF nerve growth factor inducible
ENSRNOG00000001 1023	- 1.29	No s2	nitric oxide synthase 2, inducible
ENSRNOG00000000 2331	- 1.75	Al dh3a1	aldehyde dehydrogenase 3 family, member A1
ENSRNOG00000001 4960	- 2.10	Bar d1	BRCA1 associated RING domain 1
ENSRNOG00000000 5479	0 .58	Slc 1a2	solute carrier family 1 (glial high affinity glutamate transporter), member 2
ENSRNOG00000002	-	Mk	MAP kinase-interacting serine/threonine

9028	0.58	nk2	kinase 2
ENSRNOG00000003 8455	- 1.63	Gp x2	glutathione peroxidase 2
ENSRNOG00000000 6396	- 1.50	Sd c1	syndecan 1
ENSRNOG00000000 4964	- 1.32	Erb b3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
ENSRNOG00000002 7513	- 0.68	Rte l1	regulator of telomere elongation helicase 1
ENSRNOG00000000 7136	- 0.69	An xa7	annexin A7
ENSRNOG00000000 7539	- 1.42	Rs ad2	radical S-adenosyl methionine domain containing 2
ENSRNOG00000001 0805	- 4.08	Fa bp4	fatty acid binding protein 4, adipocyte
ENSRNOG00000002 2769	- 0.90	Sp 100	SP100 nuclear antigen
ENSRNOG00000000 2659	0 .92	Cii ta	class II transactivator
ENSRNOG00000003 2404	- 1.57	To p2a	topoisomerase (DNA) II alpha
ENSRNOG00000002 4689	- 0.93	Ho px	HOP homeobox
ENSRNOG00000000 6450	- 0.70	Erb b2	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
ENSRNOG00000002 9500	- 0.52	Ta pbp	TAP binding protein
<b>Response to wounding----GO:0009611, adjP=1.20e-06</b>			
ENSRNOG00000001 7369	- 1.36	Mu stn1	musculoskeletal, embryonic nuclear protein 1
ENSRNOG00000002 4115	- 3.22	C6	complement component 6
ENSRNOG00000004	-	Sp	secreted phosphoprotein 1

3451	1.38	p1	
ENSRNOG0000003 2788	- 0.81	Dy sf	dysferlin
ENSRNOG0000001 0626	- 0.71	Sp hk1	sphingosine kinase 1
ENSRNOG0000001 2155	- 1.32	So x15	SRY (sex determining region Y)-box 15
ENSRNOG0000001 8991	- 1.27	Gs n	gelsolin
ENSRNOG0000001 0362	- 1.21	An xa2	annexin A2
ENSRNOG0000001 6289	0 .66	Bm pr1b	bone morphogenetic protein receptor, type IB
ENSRNOG0000001 9673	- 1.32	Zfp 36	zinc finger protein 36
ENSRNOG0000001 5891	- 0.73	Hp s1	Hermansky-Pudlak syndrome 1 homolog (human)
ENSRNOG0000000 3357	- 0.72	Col 3a1	collagen, type III, alpha 1
ENSRNOG0000002 3214	- 2.32	Il2 0rb	interleukin 20 receptor beta
ENSRNOG0000001 6575	- 0.90	Tnf rsf1b	tumor necrosis factor receptor superfamily, member 1b
ENSRNOG0000001 1306	- 2.43	My od1	myogenic differentiation 1
ENSRNOG0000000 5479	0 .58	Slc 1a2	solute carrier family 1 (glial high affinity glutamate transporter), member 2
ENSRNOG0000003 3564	- 1.91	Cf d	complement factor D (adipsin)
ENSRNOG0000000 6396	- 1.50	Sd c1	syndecan 1
ENSRNOG0000003 8455	- 1.63	Gp x2	glutathione peroxidase 2
ENSRNOG0000000	-	Crc	calcitonin gene-related peptide-receptor

0901	0.86	p	component
ENSRNOG00000000 4964	- 1.32	Erb b3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
ENSRNOG00000002 0270	- 1.62	An xa8	annexin A8
ENSRNOG00000001 9500	d own	Cy p1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
ENSRNOG00000001 0805	- 4.08	Fa bp4	fatty acid binding protein 4, adipocyte
ENSRNOG00000000 2659	0 .92	Cii ta	class II transactivator
ENSRNOG00000001 0513	- 1.76	Tfp i2	tissue factor pathway inhibitor 2
ENSRNOG00000002 4689	- 0.93	Ho px	HOP homeobox
ENSRNOG00000000 6450	- 0.70	Erb b2	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
ENSRNOG00000000 6330	- 1.20	Elf 3	E74-like factor 3
<b>Immune system process----GO:0002376, adjP=0.0002</b>			
ENSRNOG00000000 8144	- 0.77	Irf 1	interferon regulatory factor 1
ENSRNOG00000004 2672	1 .33	RT 1-A3	RT1 class I, locus A3
ENSRNOG00000000 9797	- 1.54	Aq p3	aquaporin 3
ENSRNOG00000001 3768	- 1.33	De fb1	defensin beta 1
ENSRNOG00000000 5917	- 0.87	Pa wr	PRKC, apoptosis, WT1, regulator
ENSRNOG00000003 1090	- 0.80	RT 1-CE7	RT1 class I, locus CE7
ENSRNOG00000000	-	Col	collagen, type III, alpha 1

3357	0.72	3a1	
ENSRNOG00000002 3214	- 2.32	Il2 Orb	interleukin 20 receptor beta
ENSRNOG00000001 4605	- 2.49	Lig 4	ligase IV, DNA, ATP-dependent
ENSRNOG00000000 0655	1 .07	Ptp rc	protein tyrosine phosphatase, receptor type, C
ENSRNOG00000000 3537	- 0.85	Spt a1	spectrin, alpha, erythrocytic 1 (elliptocytosis 2)
ENSRNOG00000003 3564	- 1.91	Cf d	complement factor D (adipsin)
ENSRNOG00000001 3673	0 .69	Ms h3	mutS homolog 3 (E. coli)
ENSRNOG00000000 1821	- 4.89	Ad ipoq	adiponectin, C1Q and collagen domain containing
ENSRNOG00000001 3170	- 0.55	Il1 3ra1	interleukin 13 receptor, alpha 1
ENSRNOG00000000 4498	- 1.42	Sci n	scinderin
ENSRNOG00000002 0165	u p	Era f	erythroid associated factor
ENSRNOG00000000 6418	- 0.76	Sa mhd1	SAM domain and HD domain, 1
ENSRNOG00000001 8311	- 1.71	Cd 19	CD19 molecule
ENSRNOG00000002 4115	- 3.22	C6	complement component 6
ENSRNOG00000000 9848	- 1.66	Il1 8	interleukin 18
ENSRNOG00000001 5891	- 0.73	Hp s1	Hermansky-Pudlak syndrome 1 homolog (human)
ENSRNOG00000001 9673	- 1.32	Zfp 36	zinc finger protein 36
ENSRNOG00000001	-	Il2	interleukin 22 receptor, alpha 2



2259	2.40	2ra2	
ENSRNOG00000001 6575	- 0.90	Tnf rsf1b	tumor necrosis factor receptor superfamily, member 1b
ENSRNOG00000001 1886	- 0.66	My ole	myosin IE
ENSRNOG00000003 8455	- 1.63	Gp x2	glutathione peroxidase 2
ENSRNOG00000000 7539	- 1.42	Rs ad2	radical S-adenosyl methionine domain containing 2
ENSRNOG00000003 0712	- 1.79	RT 1-A2	RT1 class Ia, locus A2
ENSRNOG00000002 2769	- 0.90	Sp 100	SP100 nuclear antigen
ENSRNOG00000000 2659	0 .92	Cii ta	class II transactivator
ENSRNOG00000000 1187	- 0.72	Oa sl	2'-5'-oligoadenylate synthetase-like
ENSRNOG00000000 0777	- 1.43	RT 1-S3	RT1 class Ib, locus S3
ENSRNOG00000002 9500	- 0.52	Ta pbp	TAP binding protein
ENSRNOG00000000 6450	- 0.70	Erb b2	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
<b>Defense response----GO:0006952, adjP=0.0006</b>			
ENSRNOG00000002 4115	- 3.22	C6	complement component 6
ENSRNOG00000001 7927	0 .48	Dr d4	dopamine receptor D4
ENSRNOG00000002 1798	- 2.51	Pgl yrp4	peptidoglycan recognition protein 4
ENSRNOG00000001 3768	- 1.33	De fb1	defensin beta 1
ENSRNOG00000004	-	Sp	secreted phosphoprotein 1

3451	1.38	p1	
ENSRNOG0000001 0626	- 0.71	Sp hk1	sphingosine kinase 1
ENSRNOG0000001 6289	0 .66	Bm pr1b	bone morphogenetic protein receptor, type IB
ENSRNOG0000001 9673	- 1.32	Zfp 36	zinc finger protein 36
ENSRNOG0000002 3214	- 2.32	Il2 0rb	interleukin 20 receptor beta
ENSRNOG0000001 6575	- 0.90	Tnf rsf1b	tumor necrosis factor receptor superfamily, member 1b
ENSRNOG0000000 0655	1 .07	Ptp rc	protein tyrosine phosphatase, receptor type, C
ENSRNOG0000001 1023	- 1.29	No s2	nitric oxide synthase 2, inducible
ENSRNOG0000003 3564	- 1.91	Cf d	complement factor D (adipsin)
ENSRNOG0000000 6396	- 1.50	Sd c1	syndecan 1
ENSRNOG0000003 8455	- 1.63	Gp x2	glutathione peroxidase 2
ENSRNOG0000000 0901	- 0.86	Crc p	calcitonin gene-related peptide-receptor component
ENSRNOG0000000 7539	- 1.42	Rs ad2	radical S-adenosyl methionine domain containing 2
ENSRNOG0000001 0805	- 4.08	Fa bp4	fatty acid binding protein 4, adipocyte
ENSRNOG0000002 2769	- 0.90	Sp 100	SP100 nuclear antigen
ENSRNOG0000000 2659	0 .92	Cii ta	class II transactivator
ENSRNOG0000002 9500	- 0.52	Ta pbp	TAP binding protein
ENSRNOG0000000	-	Sa	SAM domain and HD domain, 1

6418	0.76	mhd1	
ENSRNOG00000000 6330	- 1.20	Elf 3	E74-like factor 3
<b>Lipid oxidation, fatty acid oxidation----GO:0034440, adjP=0.0006</b>			
ENSRNOG00000000 9845	0 .97	Ac adm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
ENSRNOG00000000 1770	0 .69	Eh hadh	enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase
ENSRNOG00000003 2959	- 2.35	Ad h7	alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide
ENSRNOG00000002 7037	- 1.65	Al ox12	arachidonate 12-lipoxygenase
ENSRNOG00000000 1821	- 4.89	Ad ipoq	adiponectin, C1Q and collagen domain containing
ENSRNOG00000001 4254	0 .49	Cpt 1a	carnitine palmitoyltransferase 1a, liver
ENSRNOG00000001 6265	- 0.59	Ac sl5	acyl-CoA synthetase long-chain family member 5
ENSRNOG00000000 8236	- 0.82	De cr1	2,4-dienoyl CoA reductase 1, mitochondrial
<b>Oxidation reduction----GO:0055114, adjP=0.0008</b>			
ENSRNOG00000003 2450	1 .49	Cy p11b1	cytochrome P450, subfamily 11B, polypeptide 1
ENSRNOG00000001 5072	- 1.39	Ptg r1	prostaglandin reductase 1
ENSRNOG00000002 5019	4 .95	Di o1	deiodinase, iodothyronine, type I
ENSRNOG00000003 2959	- 2.35	Ad h7	alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide
ENSRNOG00000000 7081	- 0.84	Xd h	xanthine dehydrogenase
ENSRNOG00000002 7037	- 1.65	Al ox12	arachidonate 12-lipoxygenase

ENSRNOG0000002 5767	0 .52	Rd h8	retinol dehydrogenase 8 (all-trans)
ENSRNOG0000001 4656	- 2.47	Co x8b	cytochrome c oxidase, subunit 8B
ENSRNOG0000001 2081	- 1.02	Tx n1	thioredoxin 1
ENSRNOG0000000 9845	0 .97	Ac adm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
ENSRNOG0000000 0158	- 1.10	Cd o1	cysteine dioxygenase, type I
ENSRNOG0000000 1770	0 .69	Eh hadh	enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase
ENSRNOG0000003 2165	- 1.18	Cb r1	carbonyl reductase 1
ENSRNOG0000001 1023	- 1.29	No s2	nitric oxide synthase 2, inducible
ENSRNOG0000000 2331	- 1.75	Al dh3a1	aldehyde dehydrogenase 3 family, member A1
ENSRNOG0000004 2224	- 1.17	Cy p2j10	cytochrome P450, family 2, subfamily j, polypeptide 10
ENSRNOG0000003 8455	- 1.63	Gp x2	glutathione peroxidase 2
ENSRNOG0000000 1379	- 1.51	Cy p3a9	cytochrome P450, family 3, subfamily a, polypeptide 9
ENSRNOG0000001 6172	0 .62	RG D131001 6	similar to hypothetical protein
ENSRNOG0000001 9500	d own	Cy p1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
ENSRNOG0000001 5807	- 1.20	Pyr oxd2	pyridine nucleotide-disulphide oxidoreductase domain 2
ENSRNOG0000003 0111	1 .32	Cy p11b2	cytochrome P450, subfamily 11B, polypeptide 2
ENSRNOG0000001	-	Glr	glutaredoxin 1

2183	1.03	x1	
ENSRNOG00000000 8236	- 0.82	De cr1	2,4-dienoyl CoA reductase 1, mitochondrial
ENSRNOG00000001 4090	- 0.97	Ret sat	retinol saturase (all trans retinol 13,14 reductase)
ENSRNOG00000001 2772	- 2.13	Nq o1	NAD(P)H dehydrogenase, quinone 1
ENSRNOG00000001 5233	- 0.52	Etf a	electron-transfer-flavoprotein, alpha polypeptide
<b>Regulation of hormone levels----GO:0010817, adjP=0.0008</b>			
ENSRNOG00000000 1416	0 .48	Vg f	VGF nerve growth factor inducible
ENSRNOG00000001 1023	- 1.29	No s2	nitric oxide synthase 2, inducible
ENSRNOG00000003 2450	1 .49	Cy p11b1	cytochrome P450, subfamily 11B, polypeptide 1
ENSRNOG00000002 1763	- 3.80	Gp r120	G protein-coupled receptor 120
ENSRNOG00000002 2101	- 1.34	Cra bp2	cellular retinoic acid binding protein 2
ENSRNOG00000001 3166	- 1.37	Wn t4	wingless-type MMTV integration site family, member 4
ENSRNOG00000002 5019	4 .95	Di o1	deiodinase, iodothyronine, type I
ENSRNOG00000003 2959	- 2.35	Ad h7	alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide
ENSRNOG00000001 9500	d own	Cy p1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
ENSRNOG00000000 1821	- 4.89	Ad ipoq	adiponectin, C1Q and collagen domain containing
ENSRNOG00000003 0111	1 .32	Cy p11b2	cytochrome P450, subfamily 11B, polypeptide 2
ENSRNOG00000000 1962	- 2.36	Fa m3b	family with sequence similarity 3, member B

ENSRNOG0000002 5767	0 .52	Rd h8	retinol dehydrogenase 8 (all-trans)
ENSRNOG0000001 4254	0 .49	Cpt 1a	carnitine palmitoyltransferase 1a, liver
ENSRNOG0000001 4090	- 0.97	Ret sat	retinol saturase (all trans retinol 13,14 reductase)
<b>Extracellular matrix organization----GO:0030198, adjP=0.0008</b>			
ENSRNOG0000001 2811	- 1.06	Spi nt1	serine peptidase inhibitor, Kunitz type 1
ENSRNOG0000000 4275	0 .74	Egf 16	EGF-like-domain, multiple 6
ENSRNOG0000000 3572	0 .94	Ad amts2	ADAM metallopeptidase with thrombospondin type 1 motif, 2
ENSRNOG0000000 2052	- 0.93	Cc dc80	coiled-coil domain containing 80
ENSRNOG0000001 0362	- 1.21	An xa2	annexin A2
ENSRNOG0000000 3357	- 0.72	Col 3a1	collagen, type III, alpha 1
ENSRNOG0000000 2640	- 1.90	Ser pinb5	serine (or cysteine) peptidase inhibitor, clade B, member 5
ENSRNOG0000001 0645	- 1.16	Lg als3	lectin, galactoside-binding, soluble, 3
ENSRNOG0000000 6330	- 1.20	Elf 3	E74-like factor 3
<b>Inflammatory response----GO:0006954, adjP=0.0025</b>			
ENSRNOG0000002 4115	- 3.22	C6	complement component 6
ENSRNOG0000003 3564	- 1.91	Cf d	complement factor D (adipsin)
ENSRNOG0000000 0901	- 0.86	Crc p	calcitonin gene-related peptide-receptor component
ENSRNOG0000003	-	Gp	glutathione peroxidase 2

8455	1.63	x2	
ENSRNOG00000000 6396	- 1.50	Sd c1	syndecan 1
ENSRNOG00000004 3451	- 1.38	Sp p1	secreted phosphoprotein 1
ENSRNOG00000001 0626	- 0.71	Sp hk1	sphingosine kinase 1
ENSRNOG00000001 0805	- 4.08	Fa bp4	fatty acid binding protein 4, adipocyte
ENSRNOG00000001 6289	0 .66	Bm pr1b	bone morphogenetic protein receptor, type IB
ENSRNOG00000000 2659	0 .92	Cii ta	class II transactivator
ENSRNOG00000001 9673	- 1.32	Zfp 36	zinc finger protein 36
ENSRNOG00000002 3214	- 2.32	Il2 0rb	interleukin 20 receptor beta
ENSRNOG00000001 6575	- 0.90	Tnf rsf1b	tumor necrosis factor receptor superfamily, member 1b
ENSRNOG00000000 6330	- 1.20	Elf 3	E74-like factor 3
<b>Retinoid metabolic process----GO:0001523, adjP=0.0025</b>			
ENSRNOG00000002 5767	0 .52	Rd h8	retinol dehydrogenase 8 (all-trans)
ENSRNOG00000001 4090	- 0.97	Ret sat	retinol saturase (all trans retinol 13,14 reductase)
ENSRNOG00000002 2101	- 1.34	Cra bp2	cellular retinoic acid binding protein 2
ENSRNOG00000003 2959	- 2.35	Ad h7	alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide
ENSRNOG00000001 9500	d own	Cy p1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
<b>Regulation of cell adhesion----GO:0030155, adjP=0.0041</b>			

ENSRNOG00000000 4275	0 .74	Egf l6	EGF-like-domain, multiple 6
ENSRNOG00000000 4964	- 1.32	Erb b3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
ENSRNOG00000004 3451	- 1.38	Sp p1	secreted phosphoprotein 1
ENSRNOG00000000 9848	- 1.66	Il1 8	interleukin 18
ENSRNOG00000001 8991	- 1.27	Gs n	gelsolin
ENSRNOG00000000 2052	- 0.93	Cc dc80	coiled-coil domain containing 80
ENSRNOG00000002 7037	- 1.65	Al ox12	arachidonate 12-lipoxygenase
ENSRNOG00000000 1821	- 4.89	Ad ipoq	adiponectin, C1Q and collagen domain containing
ENSRNOG00000000 6450	- 0.70	Erb b2	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
ENSRNOG00000001 6217	0 .79	Gt pbp4	similar to Nucleolar GTP-binding protein 1
ENSRNOG00000000 5906	- 3.17	LO C100365 047	similar to CD36 antigen; similar to fatty acid translocase/CD36; CD36 molecule (thrombospondin receptor)
<b>Epithelial cell differentiation----GO:0030855, adjP=0.0056</b>			
ENSRNOG00000002 7380	- 2.07	Up k1b	uroplakin 1B
ENSRNOG00000000 7081	- 0.84	Xd h	xanthine dehydrogenase
ENSRNOG00000002 4237	- 1.44	Scel l	sciellin
ENSRNOG00000000 7484	- 1.37	Ehf	ets homologous factor
ENSRNOG00000002	-	Cst	cystatin A (stefin A)



3953	2.11	a	
ENSRNOG00000000 8676	- 1.41	Em p1	epithelial membrane protein 1
ENSRNOG00000001 3166	- 1.37	Wn t4	wingless-type MMTV integration site family, member 4
ENSRNOG00000000 4414	- 1.14	F1 1r	F11 receptor
ENSRNOG00000000 6330	- 1.20	Elf 3	E74-like factor 3
<b>Oxidoreductase activity----GO:0016491, adjP=0.0018</b>			
ENSRNOG00000003 2450	1 .49	Cy p11b1	cytochrome P450, subfamily 11B, polypeptide 1
ENSRNOG00000002 1255	- 0.88	Sm ox	spermine oxidase
ENSRNOG00000001 5072	- 1.39	Ptg r1	prostaglandin reductase 1
ENSRNOG00000002 5019	4 .95	Di o1	deiodinase, iodothyronine, type I
ENSRNOG00000003 2959	- 2.35	Ad h7	alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide
ENSRNOG00000000 7081	- 0.84	Xd h	xanthine dehydrogenase
ENSRNOG00000002 7037	- 1.65	Al ox12	arachidonate 12-lipoxygenase
ENSRNOG00000002 5767	0 .52	Rd h8	retinol dehydrogenase 8 (all-trans)
ENSRNOG00000001 4656	- 2.47	Co x8b	cytochrome c oxidase, subunit 8B
ENSRNOG00000003 8746	- 1.37	Bc o2	beta-carotene oxygenase 2
ENSRNOG00000001 2081	- 1.02	Tx n1	thioredoxin 1
ENSRNOG00000000 9845	0 .97	Ac adm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain

ENSRNOG00000000 1770	0 .69	Eh hadh	enoyl-Coenzyme A, hydratase/3- hydroxyacyl Coenzyme A dehydrogenase
ENSRNOG00000000 0158	- 1.10	Cd o1	cysteine dioxygenase, type I
ENSRNOG00000000 2331	- 1.75	Al dh3a1	aldehyde dehydrogenase 3 family, member A1
ENSRNOG00000001 1023	- 1.29	No s2	nitric oxide synthase 2, inducible
ENSRNOG00000004 2224	- 1.17	Cy p2j10	cytochrome P450, family 2, subfamily j, polypeptide 10
ENSRNOG00000003 2165	- 1.18	Cb r1	carbonyl reductase 1
ENSRNOG00000003 8455	- 1.63	Gp x2	glutathione peroxidase 2
ENSRNOG00000001 6172	0 .62	RG D131001 6	similar to hypothetical protein
ENSRNOG00000000 1379	- 1.51	Cy p3a9	cytochrome P450, family 3, subfamily a, polypeptide 9
ENSRNOG00000001 9500	d own	Cy p1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
ENSRNOG00000003 0111	1 .32	Cy p11b2	cytochrome P450, subfamily 11B, polypeptide 2
ENSRNOG00000001 5807	- 1.20	Pyr oxd2	pyridine nucleotide-disulphide oxidoreductase domain 2
ENSRNOG00000001 2183	- 1.03	Glr x1	glutaredoxin 1
ENSRNOG00000000 8236	- 0.82	De cr1	2,4-dienoyl CoA reductase 1, mitochondrial
ENSRNOG00000001 4090	- 0.97	Ret sat	retinol saturase (all trans retinol 13,14 reductase)
ENSRNOG00000001 2772	- 2.13	Nq o1	NAD(P)H dehydrogenase, quinone 1
ENSRNOG00000001	-	Etf	electron-transfer-flavoprotein, alpha

5233	0.52	a	polypeptide
<b>Calcium-dependent phospholipid binding----GO:0005544, adjP=0.0018</b>			
1134	0.99	- An xa9	annexin A9
8159	1.07	- An xa4	annexin A4
0270	1.62	- An xa8	annexin A8
9932	1.61	- Mc tp2	multiple C2 domains, transmembrane 2
7136	0.69	- An xa7	annexin A7
<b>Electron carrier activity----GO:0009055, adjP=0.0083</b>			
9845	0.97	0 Ac adm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
1023	1.29	- No s2	nitric oxide synthase 2, inducible
2450	0.49	1 Cy p11b1	cytochrome P450, subfamily 11B, polypeptide 1
2224	1.17	- Cy p2j10	cytochrome P450, family 2, subfamily j, polypeptide 10
1255	0.88	- Sm ox	spermine oxidase
1379	1.51	- Cy p3a9	cytochrome P450, family 3, subfamily a, polypeptide 9
9500	own	d Cy p1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
7081	0.84	- Xd h	xanthine dehydrogenase
0111	0.32	1 Cy p11b2	cytochrome P450, subfamily 11B, polypeptide 2
2183	1.03	- Glr x1	glutaredoxin 1

4090	ENSRNOG0000001	- 0.97	Ret sat	retinol saturase (all trans retinol 13,14 reductase)
2772	ENSRNOG0000001	- 2.13	Nq o1	NAD(P)H dehydrogenase, quinone 1
5233	ENSRNOG0000001	- 0.52	Etf a	electron-transfer-flavoprotein, alpha polypeptide
<b>Cofactor (coenzyme) binding----GO:0048037, adjP=0.0436</b>				
9845	ENSRNOG0000000	0 .97	Ac adm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
1770	ENSRNOG0000000	0 .69	Eh hadh	enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase
1023	ENSRNOG0000001	- 1.29	No s2	nitric oxide synthase 2, inducible
6480	ENSRNOG0000001	1 .14	Ac bd7	acyl-Coenzyme A binding domain containing 7
5275	ENSRNOG0000000	- 1.59	Sh mt1	serine hydroxymethyltransferase 1 (soluble)
6172	ENSRNOG0000001	0 .62	RG D131001 6	similar to hypothetical protein
2959	ENSRNOG0000003	- 2.35	Ad h7	alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide
7081	ENSRNOG0000000	- 0.84	Xd h	xanthine dehydrogenase
6064	ENSRNOG0000001	- 0.57	Tkt	transketolase
1861	ENSRNOG0000001	0 .59	Aa dat	aminoadipate aminotransferase
8236	ENSRNOG0000000	- 0.82	De cr1	2,4-dienoyl CoA reductase 1, mitochondrial
2772	ENSRNOG0000001	- 2.13	Nq o1	NAD(P)H dehydrogenase, quinone 1
5233	ENSRNOG0000001	- 0.52	Etf a	electron-transfer-flavoprotein, alpha polypeptide

<b>Vitamin metabolic process----GO:0006766, adjP=0.0008</b>			
ENSRNOG0000000	0	Ac	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
9845	.97	adm	
ENSRNOG0000003	-	Cb	carbonyl reductase 1
2165	1.18	r1	
ENSRNOG0000000	-	Sh	serine hydroxymethyltransferase 1 (soluble)
5275	1.59	mt1	
ENSRNOG0000002	-	Cra	cellular retinoic acid binding protein 2
2101	1.34	bp2	
ENSRNOG0000003	-	Ad	alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide
2959	2.35	h7	
ENSRNOG0000001	d	Cy	cytochrome P450, family 1, subfamily a, polypeptide 1
9500	own	p1a1	
ENSRNOG0000001	-	Tkt	transketolase
6064	0.57		
ENSRNOG0000002	0	Rd	retinol dehydrogenase 8 (all-trans)
5767	.52	h8	
ENSRNOG0000001	0	Cpt	carnitine palmitoyltransferase 1a, liver
4254	.49	1a	
ENSRNOG0000001	-	Ret	retinol saturase (all trans retinol 13,14 reductase)
4090	0.97	sat	
<b>DNA ligation during DNA repair, p-val= 2,1E-3</b>			
ENSRNOG0000001	-	Lig	ligase IV, DNA, ATP-dependent
4605	2.49	4	
ENSRNOG0000003	2	RG	similar to High mobility group protein 2 (HMG-2); high mobility group box 2
3321	.09	D155996 2	
ENSRNOG0000003	3	H	similar to Hmgb1 protein; similar to High mobility group protein 1 (HMG-1) (High mobility group protein B1) (Amphoterin) (Heparin-binding protein p30)
8478	.78	mg111	
<b>Retinol metabolism, adjP=0.0002</b>			
ENSRNOG0000001	-	Ret	retinol saturase (all trans retinol 13,14

4090	0.97	sat	reductase)
ENSRNOG00000000 1990	u p	Ug t2b17	UDP glucuronosyltransferase 2 family, polypeptide B17
ENSRNOG00000000 1379	- 1.51	Cy p3a9	cytochrome P450, family 3, subfamily a, polypeptide 9
ENSRNOG00000003 2959	- 2.35	Ad h7	alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide
ENSRNOG00000001 9500	d own	Cy p1a1	cytochrome P450, family 1, subfamily a, polypeptide 1
ENSRNOG00000001 2499	- 0.75	Rar g	retinoic acid receptor, gamma
ENSRNOG00000002 5767	0 .52	Rd h8	retinol dehydrogenase 8 (all-trans)
ENSRNOG00000002 2101	- 1.34	Cra bp2	cellular retinoic acid binding protein 2
ENSRNOG00000002 3633	- 1.65	Cra bp1	cellular retinoic acid binding protein 1
<b>Antigen processing and presentation, adjP=0.0023</b>			
ENSRNOG00000003 0712	- 1.79	RT 1-A2	RT1 class Ia, locus A2
ENSRNOG00000003 1090	- 0.80	RT 1-CE7	RT1 class I, locus CE7
ENSRNOG00000000 2659	0 .92	Cii ta	class II transactivator
ENSRNOG00000004 2672	1 .33	RT 1-A3	RT1 class I, locus A3
ENSRNOG00000000 0777	- 1.43	RT 1-S3	RT1 class Ib, locus S3
ENSRNOG00000002 9500	- 0.52	Ta pbp	TAP binding protein
ENSRNOG00000003 3526	- 0.62	Hs pa1b	heat shock 70kD protein 1B (mapped)
<b>Mitochondrial LC-Fatty Acid Beta-Oxidation, adjP=0.0124</b>			

ENSRNOG0000000	0	Ac	acyl-Coenzyme A dehydrogenase, C-4 to
9845	.97	adm	C-12 straight chain
ENSRNOG0000000	0	Eh	enoyl-Coenzyme A, hydratase/3-
1770	.69	hadh	hydroxyacyl Coenzyme A dehydrogenase
ENSRNOG0000001	0	Cpt	carnitine palmitoyltransferase 1a, liver
4254	.49	1a	
<b>Oxidative Stress, adjP=0.0324</b>			
ENSRNOG0000000	-	Xd	xanthine dehydrogenase
7081	0.84	h	
ENSRNOG0000001	d	Cy	cytochrome P450, family 1, subfamily a,
9500	own	p1a1	polypeptide 1
ENSRNOG0000001	-	Nq	NAD(P)H dehydrogenase, quinone 1
2772	2.13	o1	
<b>Metabolism of xenobiotics, adjP=0.0005</b>			
ENSRNOG0000000	-	Al	aldehyde dehydrogenase 3 family,
2331	1.75	dh3a1	member A1
ENSRNOG0000001	-	Gst	glutathione S-transferase mu 4
9221	0.84	m4	
ENSRNOG0000000	u	Ug	UDP glucuronosyltransferase 2 family,
1990	p	t2b17	polypeptide B17
ENSRNOG0000000	-	Cy	cytochrome P450, family 3, subfamily a,
1379	1.51	p3a9	polypeptide 9
ENSRNOG0000003	-	Ad	alcohol dehydrogenase 7 (class IV), mu
2959	2.35	h7	or sigma polypeptide
ENSRNOG0000001	d	Cy	cytochrome P450, family 1, subfamily a,
9500	own	p1a1	polypeptide 1
ENSRNOG0000003	-	Ce	carboxylesterase 2
9079	2.49	s2	
ENSRNOG0000000	-	Xd	xanthine dehydrogenase
7081	0.84	h	
ENSRNOG0000001	-	Ce	carboxylesterase 3
5519	1.42	s3	
ENSRNOG0000003	-	Ce	carboxylesterase 2-like

6571	1.78	s2l	
<b>PPAR signaling pathway, adjP=0.0005</b>			
ENSRNOG00000001 0805	- 4.08	Fa bp4	fatty acid binding protein 4, adipocyte
ENSRNOG00000000 1821	- 4.89	Ad ipoq	adiponectin, C1Q and collagen domain containing
ENSRNOG00000000 9845	0 .97	Ac adm	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
ENSRNOG00000000 1770	0 .69	Eh hadh	enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase
ENSRNOG00000001 6265	- 0.59	Ac sl5	acyl-CoA synthetase long-chain family member 5
ENSRNOG00000001 4254	0 .49	Cpt 1a	carnitine palmitoyltransferase 1a, liver
<b>Annexin, p-val=6,8E-5</b>			
ENSRNOG00000001 0362	- 1.21	An xa2	annexin A2
ENSRNOG00000001 8159	- 1.07	An xa4	annexin A4
ENSRNOG00000002 0270	- 1.62	An xa8	annexin A8
ENSRNOG00000002 1134	- 0.99	An xa9	annexin A9
ENSRNOG00000000 7136	- 0.69	An xa7	similar to Annexin A7 (Annexin VII) (Synexin); annexin A7