

Supporting Information

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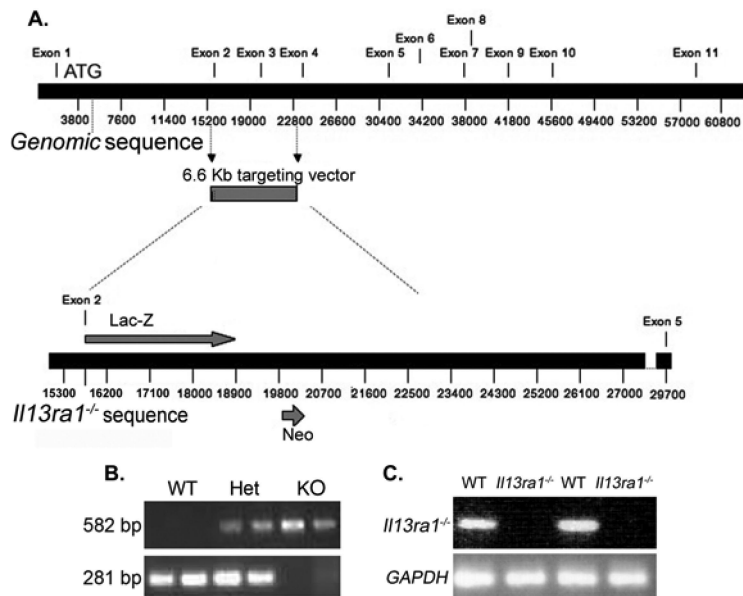


Fig. S1. Generation of *Il13ra1*^{-/-} mice. The IL-13R α 1 gene was replaced by a reporter-selection cassette, which consists of a β -galactosidase enzyme gene and a neomycin resistance gene. The knockout-reporter construct was created by means of bacterial homologous recombination into a bacterial artificial chromosome encoding IL-13R α 1 and was constructed so that the β -galactosidase gene was placed in frame with the ATG of IL-13R α 1 (Fig. 1A). The diagram shows the WT murine IL-13R α 1 gene locus and the gene-targeted locus. The construct deletes amino acids 15,824 through 22,414 of IL-13R α 1 contained in exons 2-4 of the gene. The mice were identified as heterozygotes and homozygotes by means of the TaqMan assay with probes for the Neo and LacZ genes and the IL-13R α 1 loss-of-allele probes. The mice were genotyped by means of PCR displaying a WT band of 281 bp and a targeted band of 582 bp (Fig. 1B). Het, heterozygote mice; KO, *Il13ra1*^{-/-} mice. Each lane represents a separate animal. The absence of mRNA transcript encoding for IL-13R α 1 was validated by PCR (Fig. 1C). Reverse transcription of whole-lung RNA was subjected to PCR using IL-13R α 1-specific primers and GAPDH control primers. Each lane represents a separate animal. Male *Il13ra1*^{-/-} mice were generated from BALB/c \times C57BL/6 mice and were backcrossed onto the BALB/c and C57BL/6 strains (10 and seven generations, respectively). Littermate controls at the identical stage of backcrossing were used in all experiments and are referred to as WT.

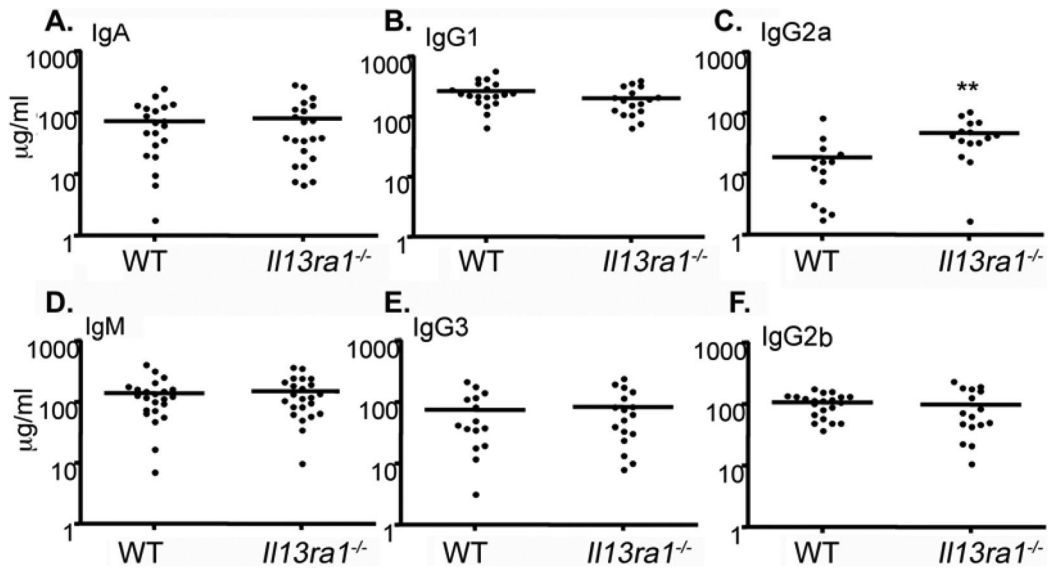


Fig. S2. Assessment of Ig levels in *Il13ra1*^{-/-} mice. Total serum Ig concentrations were determined in *Il13ra1*^{-/-} and WT mice using a standard ELISA (A–F). Each dot represents a different mouse; the horizontal line represents the mean. **, $P < 0.01$.

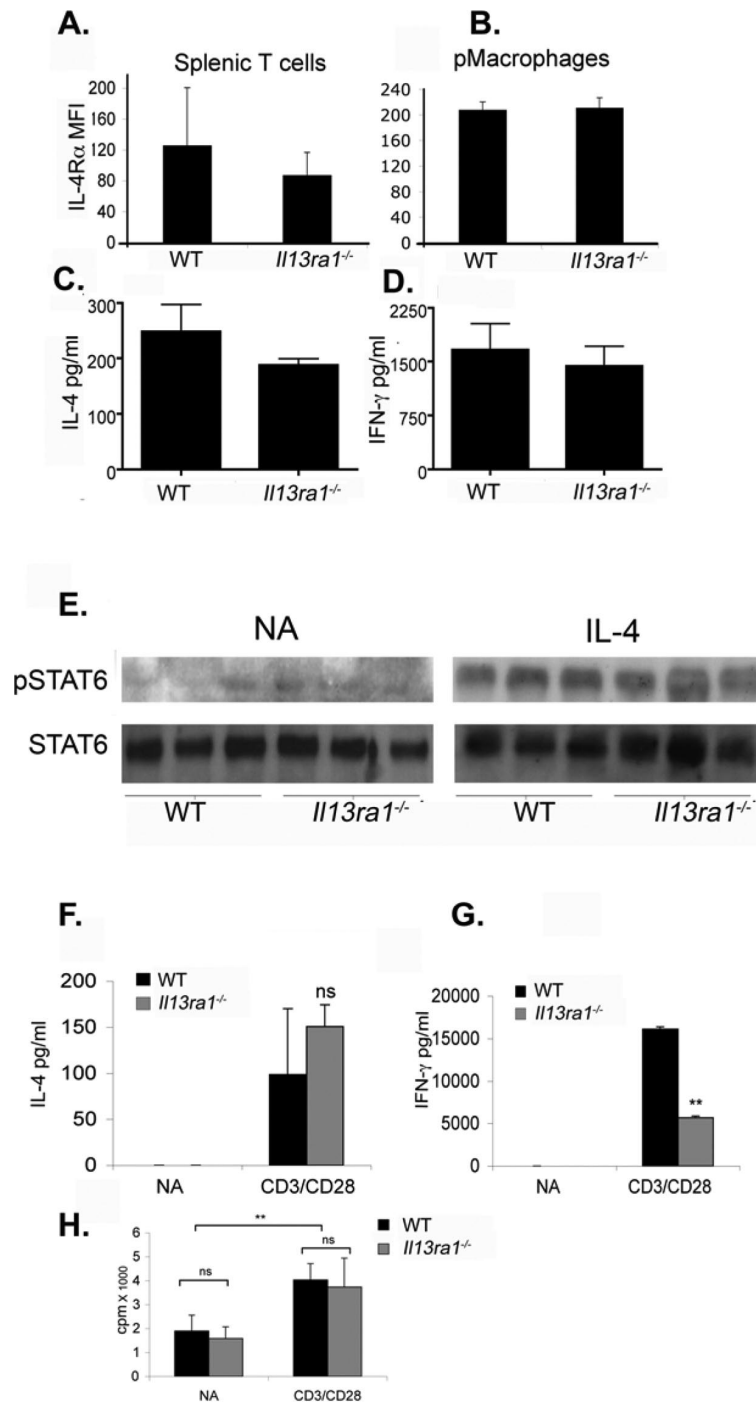


Fig. S3. Assessment of IL-4 levels and signaling components in *Il13ra1*^{-/-} mice. Splenocytes (A) and peritoneal macrophages (B) (pMacrophages) were isolated from *Il13ra1*^{-/-} mice and WT mice. The mice were stained with anti-IL-4R α (clone M1) followed by goat anti-rat FITC. Thereafter, the cells were washed and stained with cell-specific markers [i.e., CD3 (A) and CD11b/F4/80 (B), respectively]. The data are shown as mean \pm SD of fluorescence intensity ($n = 4$). *Il13ra1*^{-/-} mice were injected i.p. with biotinylated anti-IL-4 and biotinylated anti-IFN γ . Twenty-four hours later the mice were bled and IL-4 and IFN γ levels in the serum were assessed by using the *in vivo* cytokine capture assay (C and D). The data are shown as mean \pm SD ($n = 12$). Splenocytes were obtained from WT and *Il13ra1*^{-/-} mice. The cells were activated with recombinant mouse IL-4 (50 ng/ml) for 30 min and subjected to Western blot analysis using phospho-STAT6 (pSTAT6) and total STAT6 (STAT6) as loading control (E). Each lane represents an individual mouse. NA, nonactivated; IL-4, IL-4 treated. In addition, the splenocytes were subjected to CD3/CD28 stimulation for 48–72 h. Thereafter, the supernatants were collected and analyzed by ELISA for IL-4 (F) and IFN γ (G). NA, nonactivated. $n = 4$. **, $P < 0.01$. (H) Activated splenocytes were pulsed with [³H]thymidine, and cell proliferation was assessed by thymidine incorporation and is expressed as cpm. NA, nonactivated. Data are expressed as mean \pm SD. $n = 4$. **, $P < 0.01$.

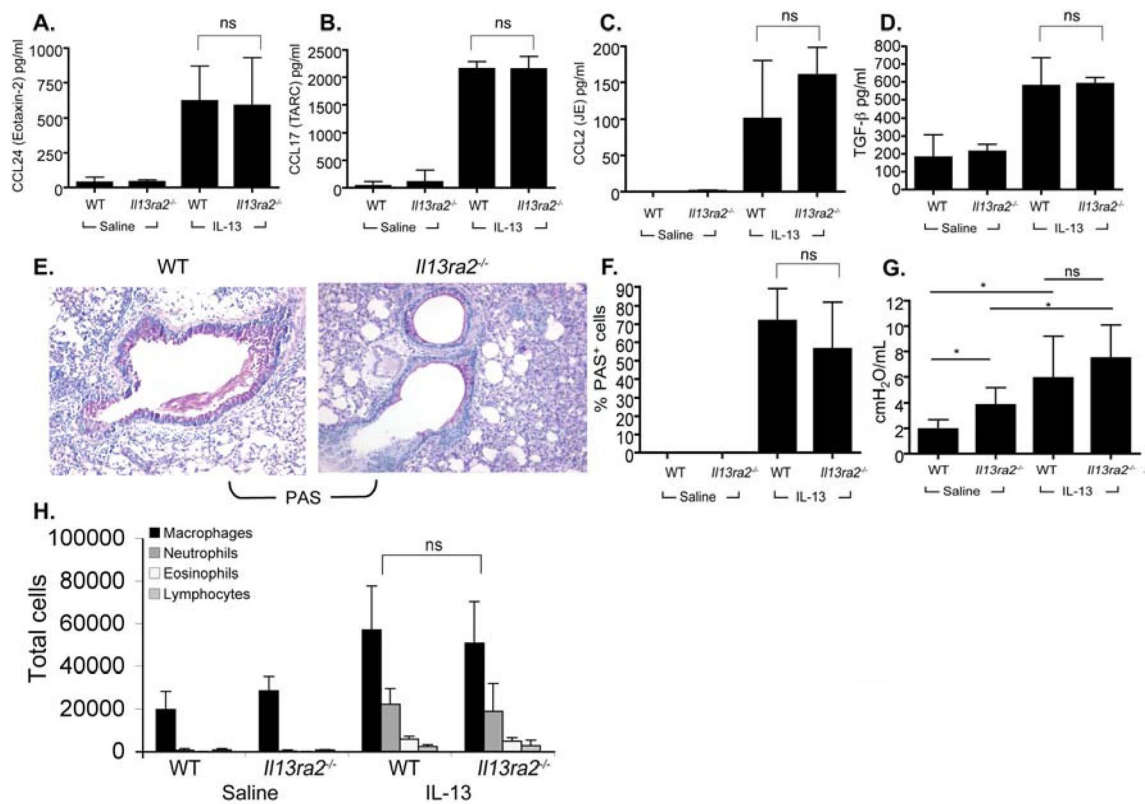


Fig. S4. Assessment of IL-13R α 2-mediated responses in a murine model of IL-13-induced airway inflammation. IL-13 was administered three times every other day to *Il13ra2*^{-/-} mice and WT control mice. Forty-eight hours after the final challenge, the mice were assessed for BALF chemokine levels (A–C), active TGF- β production (D), mucus production (as assessed by PAS staining) (E and F), airway resistance (G), and BALF cellular infiltration (H). The data are presented as mean \pm SD ($n = 3$, eight to 10 mice per experimental group). ns, nonsignificant. *, $P < 0.05$.

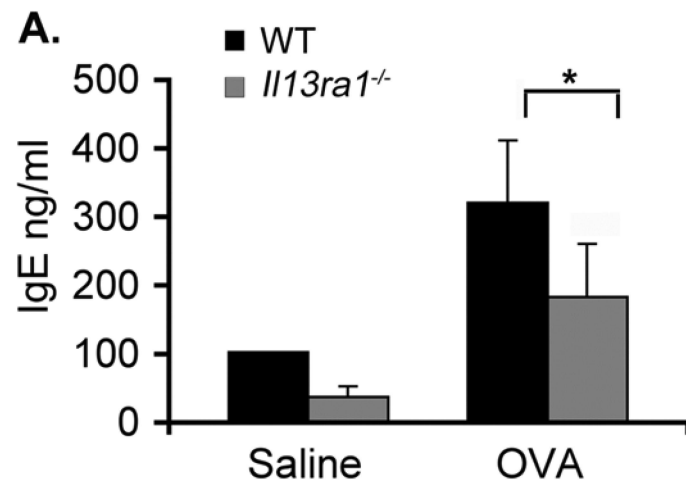


Fig. S5. Assessment of Th2 responses toward T cell-dependent antigens. After OVA/alum sensitization, serum was obtained from WT and *Il13ra1*^{-/-} mice and assessed for total IgE levels (A). The data are expressed as mean \pm SD. $n = 3$ (four mice per experimental group). *, $P < 0.05$.

| Affymetrix number/probe set | Gene description |
|-----------------------------|--|
| 1450009_at | Lactotransferrin |
| 1449864_at | interleukin 4 |
| 1449835_at | programmed cell death 1 |
| 1449705_x_at | |
| 1449699_s_at | RIKEN cDNA C330027C09 gene |
| 1449580_s_at | histocompatibility 2, class II, locus Mb1; histocompatibility 2, class II, locus Mb2 |
| 1449538_a_at | glucosaminyl (N-acetyl) transferase 1, core 2 |
| 1449452_a_at | glycoprotein 2 (zymogen granule membrane) |
| 1449401_at | complement component 1, q subcomponent, gamma polypeptide |
| 1449393_at | SH2 domain protein 1A |
| 1449360_at | Colony stimulating factor 2 receptor, beta 2, low-affinity (granulocyte-macrophage) |
| 1449269_at | coagulation factor V |
| 1449227_at | cholesterol 25-hydroxylase |
| 1449207_a_at | kinesin family member 20A |
| 1449171_at | Ttk protein kinase |
| 1449164_at | CD68 antigen |
| 1449049_at | toll-like receptor 1 |
| 1449015_at | resistin like alpha |
| 1448901_at | carboxypeptidase X 1 (M14 family) |
| 1448899_s_at | RAD51 associated protein 1 |
| 1448883_at | Legumain |
| 1448859_at | chemokine (C-X-C motif) ligand 13 |
| 1448777_at | minichromosome maintenance deficient 2 mitotin (<i>S. cerevisiae</i>) |
| 1448627_s_at | PDZ binding kinase |
| 1448466_at | cell division cycle associated 5 |
| 1448441_at | CDC28 protein kinase 1b |
| 1448409_at | lymphoid-restricted membrane protein |
| 1448380_at | lectin, galactoside-binding, soluble, 3 binding protein |
| 1448314_at | cell division cycle 2 homolog A (<i>S. pombe</i>) |
| 1448239_at | heme oxygenase (decycling) 1 |
| 1448226_at | ribonucleotide reductase M2 |
| 1448205_at | cyclin B1, related sequence 1; cyclin B1 |
| 1448123_s_at | transforming growth factor, beta induced |
| 1448061_at | |
| 1447891_at | |
| 1447792_x_at | PREDICTED: similar to putative purinergic receptor FKSG79 [<i>Mus musculus</i>] |
| 1447621_s_at | RIKEN cDNA 2610307O08 gene |
| 1447363_s_at | budding uninhibited by benzimidazoles 1 homolog, beta (<i>S. cerevisiae</i>) |
| 1447284_at | triggering receptor expressed on myeloid cells 1 |
| 1445365_at | membrane-spanning 4-domains, subfamily A, member 7 |
| 1444299_at | RIKEN cDNA A430093F15 gene |
| 1444040_at | leukocyte-associated Ig-like receptor 1 |
| 1443687_x_at | |
| 1443686_at | |
| 1442544_at | immunoglobulin heavy chain 4 (serum IgG1) |
| 1442118_at | Transcribed locus |
| 1442082_at | complement component 3a receptor 1 |
| 1440275_at | Peptidylprolyl isomerase B, mRNA (cDNA clone MGC:6241 IMAGE:3483267) |
| 1439695_a_at | M-phase phosphoprotein 1 |
| 1439595_at | TCR alpha C = T cell receptor alpha {Alternatively Spliced, C region} |
| 1439566_at | RIKEN cDNA C030038J10 gene |
| 1439510_at | shugoshin-like 1 (<i>S. pombe</i>) |
| 1439436_x_at | inner centromere protein |
| 1439377_x_at | cell division cycle 20 homolog (<i>S. cerevisiae</i>) |
| 1439323_a_at | mitogen activated protein kinase kinase kinase 1 |
| 1439067_at | leukocyte-associated Ig-like receptor 1 |
| 1439040_at | Centromere protein E |
| 1438434_at | Rho GTPase activating protein 11A |
| 1438009_at | Histone 1, H2ae, mRNA (cDNA clone MGC:90847 IMAGE:5713252) |
| 1437811_x_at | Coactosin-like 1 (<i>Dictyostelium</i>) (Cot1), mRNA |
| 1437726_x_at | complement component 1, q subcomponent, beta polypeptide |
| 1437716_x_at | kinesin family member 22 |
| 1437611_x_at | kinesin family member 2C |
| 1437370_at | shugoshin-like 2 (<i>S. pombe</i>) |
| 1437356_at | Epstein-Barr virus induced gene 2 |

| Affymetrix number/probe set | Gene description |
|-----------------------------|---|
| 1437025_at | CD28 antigen |
| 1436922_at | |
| 1436847_s_at | cell division cycle associated 8 |
| 1436808_x_at | minichromosome maintenance deficient 5, cell division cycle 46 (<i>S. cerevisiae</i>) |
| 1436723_at | FSH primary response 1 |
| 1436649_at | PREDICTED: zinc finger protein, subfamily 1A, 3 (<i>Aiolos</i>) [<i>Mus musculus</i>] |
| 1436598_at | inducible T-cell co-stimulator |
| 1436576_at | RIKEN cDNA A630077B13 gene |
| 1436419_a_at | RIKEN cDNA 1700097N02 gene |
| 1436312_at | zinc finger protein, subfamily 1A, 1 (<i>Ikaros</i>) |
| 1436186_at | E2F transcription factor 8 |
| 1436003_at | vascular cell adhesion molecule 1 |
| 1435955_at | sialic acid binding Ig-like lectin 10 |
| 1435945_a_at | potassium intermediate/small conductance calcium-activated channel, subfamily N |
| 1435773_at | RIKEN cDNA 4930547N16 gene |
| 1435597_at | RIKEN cDNA C130052G03 gene |
| 1435575_at | kinetochore associated 1 |
| 1435477_s_at | Fc receptor, IgG, low affinity IIb |
| 1435476_a_at | Fc receptor, IgG, low affinity IIb |
| 1435330_at | expressed sequence AI447904; cDNA sequence BC094916 |
| 1435306_a_at | kinesin family member 11 |
| 1435172_at | Eomesodermin homolog (<i>Xenopus laevis</i>) |
| 1435114_at | WD repeat and HMG-box DNA binding protein 1 |
| 1435005_at | centromere protein E |
| 1434955_at | membrane-associated ring finger (C3HC4) 1 |
| 1434850_at | IQ motif containing GTPase activating protein 3 |
| 1434767_at | expressed sequence C79407 |
| 1434748_at | cytoskeleton associated protein 2 |
| 1434695_at | denticleless homolog (<i>Drosophila</i>) |
| 1434437_x_at | Ribonucleotide reductase M2 |
| 1434366_x_at | complement component 1, q subcomponent, beta polypeptide |
| 1434295_at | RAS guanyl releasing protein 1 |
| 1434152_at | RIKEN cDNA 2210421G13 gene |
| 1434068_s_at | expressed sequence AI662270 |
| 1434067_at | expressed sequence AI662270 |
| 1433963_a_at | cDNA sequence BC032204 |
| 1433893_s_at | Sperm associated antigen 5 |
| 1433892_at | Sperm associated antigen 5 |
| 1433862_at | extra spindle poles-like 1 (<i>S. cerevisiae</i>) |
| 1432361_a_at | RIKEN cDNA 1700022C02 gene |
| 1431705_a_at | mucolipin 2 |
| 1431609_a_at | Acid phosphatase 5, tartrate resistant |
| 1431320_a_at | myosin Va |
| 1430811_a_at | cell division cycle associated 1 |
| 1430802_at | histocompatibility 2, Q region locus 8 |
| 1430574_at | cyclin-dependent kinase inhibitor 3 |
| 1430570_at | kynureninase (L-kynurenine hydrolase) |
| 1430523_s_at | immunoglobulin lambda chain, variable 1 |
| 1430447_a_at | leukocyte-associated Ig-like receptor 1 |
| 1430352_at | RIKEN cDNA 8430417A20 gene |
| 1429954_at | C-type lectin domain family 4, member a3 |
| 1429947_a_at | Z-DNA binding protein 1 |
| 1429381_x_at | immunoglobulin heavy chain (J558 family) |
| 1429295_s_at | thyroid hormone receptor interactor 13 |
| 1429172_a_at | RIKEN cDNA 5730507H05 gene |
| 1429171_a_at | RIKEN cDNA 5730507H05 gene |
| 1428947_at | RIKEN cDNA 2010001M09 gene |
| 1428787_at | NCK associated protein 1 like |
| 1428481_s_at | cell division cycle associated 8 |
| 1428480_at | cell division cycle associated 8 |
| 1428391_at | RAB3A interacting protein (rabin3)-like 1 |
| 1428304_at | establishment of cohesion 1 homolog 2 (<i>S. cerevisiae</i>) |
| 1428136_at | secreted frizzled-related sequence protein 1 |
| 1428114_at | Solute carrier family 14 (urea transporter), member 1 |
| 1428111_at | Solute carrier family 38, member 4 |

| Affymetrix number/probe set | Gene description |
|-----------------------------|---|
| 1428105_at | TPX2, microtubule-associated protein homolog (<i>Xenopus laevis</i>) |
| 1428104_at | TPX2, microtubule-associated protein homolog (<i>Xenopus laevis</i>) |
| 1427911_at | RIKEN cDNA 2610307O08 gene |
| 1427892_at | myosin IG |
| 1427870_x_at | immunoglobulin heavy chain 4 (serum IgG1) |
| 1427860_at | IgG light chain gene, V region |
| 1427820_at | <i>Mus musculus</i> , clone IMAGE:3983821 |
| 1427756_x_at | immunoglobulin heavy chain 4 (serum IgG1) |
| 1427747_a_at | lipocalin 2 |
| 1427455_x_at | immunoglobulin kappa chain, constant region; immunoglobulin kappa chain variable 28 (V28); similar to anti-glycoprotein-B of human Cytomegalovirus immunoglobulin VI chain; similar to anti-PRSV coat protein monoclonal antibody PRSV-L 3-8 immunoglobulin light chain variable region |
| 1427351_s_at | immunoglobulin heavy chain 6 (heavy chain of IgM) |
| 1427329_a_at | immunoglobulin heavy chain 6 (heavy chain of IgM) |
| 1427161_at | centromere autoantigen F |
| 1427094_at | polymerase (DNA directed), epsilon 2 (p59 subunit) |
| 1426936_at | hypothetical LOC433593 |
| 1426817_at | antigen identified by monoclonal antibody K _i 67 |
| 1426652_at | minichromosome maintenance deficient 3 (<i>S. cerevisiae</i>) |
| 1426183_a_at | CD209d antigen |
| 1426169_a_at | linker for activation of T cells family, member 2 |
| 1426168_a_at | T-cell receptor alpha chain; RIKEN cDNA A430107P09 gene |
| 1426112_a_at | CD72 antigen |
| 1425815_a_at | hyaluronan mediated motility receptor (RHAMM) |
| 1425753_a_at | uracil DNA glycosylase |
| 1425477_x_at | histocompatibility 2, class II antigen A, beta 1 |
| 1425406_at | C-type lectin domain family 4, member a2 |
| 1425385_a_at | immunoglobulin heavy chain 1a (serum IgG2a) |
| 1425324_x_at | immunoglobulin heavy chain 4 (serum IgG1) |
| 1425294_at | SLAM family member 8 |
| 1425247_a_at | immunoglobulin heavy chain 4 (serum IgG1) |
| 1425214_at | pyrimidineric receptor P2Y, G-protein coupled, 6 |
| 1425145_at | interleukin 1 receptor-like 1 |
| 1425086_a_at | SLAM family member 6 |
| 1425025_at | RIKEN cDNA 0610008L10 gene |
| 1424998_at | EGF-like module containing, mucin-like, hormone receptor-like sequence 4 |
| 1424971_at | RIKEN cDNA 2600001J17 gene |
| 1424965_at | Leupaxin |
| 1424931_s_at | immunoglobulin lambda chain, variable 1 |
| 1424775_at | 2'-5' oligoadenylate synthetase 1A |
| 1424754_at | membrane-spanning 4-domains, subfamily A, member 7 |
| 1424727_at | chemokine (C-C motif) receptor 5 |
| 1424629_at | Breast cancer 1 |
| 1424542_at | S100 calcium binding protein A4 |
| 1424511_at | Aurora kinase A |
| 1424509_at | CD177 antigen |
| 1424305_at | immunoglobulin joining chain |
| 1424292_at | DEP domain containing 1a |
| 1424278_a_at | baculoviral IAP repeat-containing 5 |
| 1424208_at | prostaglandin E receptor 4 (subtype EP4) |
| 1424144_at | retroviral integration site 2 |
| 1424143_a_at | retroviral integration site 2 |
| 1424128_x_at | Aurora kinase B |
| 1424118_a_at | spindle pole body component 25 homolog (<i>S. cerevisiae</i>) |
| 1424046_at | budding uninhibited by benzimidazoles 1 homolog (<i>S. cerevisiae</i>) |
| 1423954_at | complement component 3 |
| 1423847_at | RIKEN cDNA 2810406C15 gene |
| 1423809_at | transcription factor 19 |
| 1423775_s_at | protein regulator of cytokinesis 1 |
| 1423774_a_at | protein regulator of cytokinesis 1 |
| 1423524_at | microtubule associated serine/threonine kinase-like |
| 1423463_a_at | DNA segment, Chr 2, ERATO Doi 750, expressed |
| 1423182_at | Tumor necrosis factor receptor superfamily, member 13b |
| 1423092_at | inner centromere protein |

| Affymetrix number/probe set | Gene description |
|-----------------------------|---|
| 1422957_at | chemokine (C-C motif) receptor 3 |
| 1422932_a.at | vav 1 oncogene |
| 1422903_at | lymphocyte antigen 86 |
| 1422814_at | asp (abnormal spindle)-like, microcephaly associated (Drosophila) |
| 1422812_at | chemokine (C-X-C motif) receptor 6 |
| 1422535_at | cyclin E2 |
| 1422476_at | interferon gamma inducible protein 30 |
| 1422462_at | ubiquitin-conjugating enzyme E2T (putative) |
| 1422460_at | MAD2 (mitotic arrest deficient, homolog)-like 1 (yeast) |
| 1422430_at | fidgetin-like 1 |
| 1422260_x.at | chemokine (C-C motif) receptor 5 |
| 1422259_a.at | chemokine (C-C motif) receptor 5 |
| 1422046_at | integrin alpha M |
| 1422016_a.at | centromere autoantigen H |
| 1422013_at | C-type lectin domain family 4, member a2 |
| 1421813_a.at | Prosaposin |
| 1421731_a.at | flap structure specific endonuclease 1 |
| 1421546_a.at | Rac GTPase-activating protein 1 |
| 1421307_at | carbonic anhydrase 13 |
| 1421211_a.at | class II transactivator |
| 1421188_at | chemokine (C-C motif) receptor 2 |
| 1421187_at | chemokine (C-C motif) receptor 2 |
| 1421186_at | chemokine (C-C motif) receptor 2 |
| 1421173_at | interferon regulatory factor 4 |
| 1421073_a.at | prostaglandin E receptor 4 (subtype EP4) |
| 1421038_a.at | potassium intermediate/small conductance calcium-activated channel, subfamily N, member 4 |
| 1420664_s.at | protein C receptor, endothelial |
| 1420380_at | chemokine (C-C motif) ligand 2 |
| 1420338_at | arachidonate 15-lipoxygenase |
| 1420081_s.at | DNA segment, Chr 2, ERATO Doi 750, expressed |
| 1420028_s.at | minichromosome maintenance deficient 3 (<i>S. cerevisiae</i>) |
| 1419943_s.at | cyclin B1 |
| 1419754_at | myosin Va |
| 1419728_at | chemokine (C-X-C motif) ligand 5 |
| 1419684_at | chemokine (C-C motif) ligand 8 |
| 1419605_at | macrophage galactose N-acetyl-galactosamine specific lectin 1 |
| 1419561_at | chemokine (C-C motif) ligand 3 |
| 1419483_at | complement component 3a receptor 1 |
| 1419482_at | complement component 3a receptor 1 |
| 1419334_at | cytotoxic T-lymphocyte-associated protein 4 |
| 1419282_at | chemokine (C-C motif) ligand 12 |
| 1419254_at | methylenetetrahydrofolate dehydrogenase (NAD + dependent) |
| 1419219_at | cytochrome P450, family 4, subfamily f, polypeptide 18 |
| 1419209_at | chemokine (C-X-C motif) ligand 1 |
| 1419202_at | cystatin F (leukocystatin) |
| 1419153_at | RIKEN cDNA 2810417H13 gene |
| 1419152_at | RIKEN cDNA 2810417H13 gene |
| 1419128_at | integrin alpha X |
| 1419100_at | Serine (or cysteine) peptidase inhibitor, clade A, member 3N |
| 1419082_at | Serine (or cysteine) peptidase inhibitor, clade B, member 2 |
| 1419043_a.at | interferon inducible GTPase 1 |
| 1419042_at | interferon inducible GTPase 1 |
| 1418998_at | kynurenine 3-monooxygenase (kynurenine 3-hydroxylase) |
| 1418930_at | chemokine (C-X-C motif) ligand 10 |
| 1418907_at | coagulation factor V |
| 1418666_at | pentraxin related gene |
| 1418652_at | chemokine (C-X-C motif) ligand 9 |
| 1418641_at | lymphocyte cytosolic protein 2 |
| 1418353_at | CD5 antigen |
| 1418281_at | RAD51 homolog (<i>S. cerevisiae</i>) |
| 1418264_at | SoxLZ/Sox6 leucine zipper binding protein in testis |
| 1418204_s.at | allograft inflammatory factor 1 |
| 1418026_at | exonuclease 1 |
| 1417939_at | RAD51 associated protein 1 |

| Affymetrix number/probe set | Gene description |
|-----------------------------|--|
| 1417938_at | RAD51 associated protein 1 |
| 1417929_at | Solute carrier family 7 (cationic amino acid transporter, y ⁺ system), member 8 |
| 1417928_at | PDZ and LIM domain 4 |
| 1417926_at | leucine zipper protein 5 |
| 1417911_at | cyclin A2 |
| 1417910_at | cyclin A2 |
| 1417876_at | Fc receptor, IgG, high affinity I |
| 1417870_x_at | cathepsin Z |
| 1417869_s_at | cathepsin Z |
| 1417851_at | chemokine (C-X-C motif) ligand 13 |
| 1417822_at | DNA segment, Chr 17, human D6S56E 5 |
| 1417821_at | DNA segment, Chr 17, human D6S56E 5 |
| 1417676_a_at | protein tyrosine phosphatase, receptor type, O |
| 1417601_at | regulator of G-protein signaling 1 |
| 1417541_at | helicase, lymphoid specific |
| 1417450_a_at | transforming, acidic coiled-coil containing protein 3 |
| 1417445_at | kinetochore associated 2 |
| 1417381_at | complement component 1, q subcomponent, alpha polypeptide |
| 1417346_at | PYD and CARD domain containing |
| 1417314_at | histocompatibility 2, complement component factor B |
| 1417244_a_at | interferon regulatory factor 7 |
| 1417063_at | complement component 1, q subcomponent, beta polypeptide |
| 1417019_a_at | cell division cycle 6 homolog (<i>S. cerevisiae</i>) |
| 1416957_at | POU domain, class 2, associating factor 1 |
| 1416956_at | potassium voltage-gated channel, shaker-related subfamily, beta member 2 |
| 1416827_at | thromboxane A synthase 1, platelet |
| 1416802_a_at | cell division cycle associated 5 |
| 1416757_at | Zwilch, kinetochore associated, homolog (<i>Drosophila</i>) |
| 1416664_at | cell division cycle 20 homolog (<i>S. cerevisiae</i>) |
| 1416641_at | ligase I, DNA, ATP-dependent |
| 1416575_at | cell division cycle 45 homolog (<i>S. cerevisiae</i>)-like |
| 1416558_at | maternal embryonic leucine zipper kinase |
| 1416514_a_at | Fascin homolog 1, actin bundling protein(<i>Strongylocentrotus purpuratus</i>) |
| 1416333_at | docking protein 2 |
| 1416309_at | nucleolar and spindle associated protein 1 |
| 1416299_at | Shc SH2-domain binding protein 1 |
| 1416258_at | thymidine kinase 1 |
| 1416251_at | minichromosome maintenance deficient 6 (MIS5 homolog, <i>S. pombe</i>) (<i>S. cerevisiae</i>) |
| 1416120_at | ribonucleotide reductase M2 |
| 1416076_at | cyclin B1, related sequence 1; cyclin B1 |
| 1416030_a_at | minichromosome maintenance deficient 7 (<i>S. cerevisiae</i>) |
| 1416016_at | transporter 1, ATP-binding cassette, sub-family B (MDR/TAP) |
| 1416002_x_at | coactosin-like 1 (<i>Dictyostelium</i>) |
| 1415945_at | minichromosome maintenance deficient 5, cell division cycle 46 (<i>S. cerevisiae</i>) |
| 1415871_at | transforming growth factor, beta induced |
| 1415811_at | ubiquitin-like, containing PHD and RING finger domains, 1 |
| 1415810_at | ubiquitin-like, containing PHD and RING finger domains, 1; |

The genes are listed by order of fold change.

Table S2. Cluster 1: Up-regulated in *Il13ra1*^{-/-} to a lesser extent (i.e., down-regulated genes)

| Affymetrix number/probe set | Gene description |
|-----------------------------|---|
| 1432329_a.at | megakaryocyte-associated tyrosine kinase |
| 1416306_at | chloride channel calcium activated 3 |
| 1425295_at | eosinophil-associated, ribonuclease A family, member 11 |
| 1448872_at | regenerating islet-derived 3 gamma |
| 1423719_at | cDNA sequence U46068 |
| 1439423_x.at | cDNA sequence U46068 |
| 1422448_at | trefoil factor 2 (spasmolytic protein 1) |
| 1426911_at | desmocollin 2 |
| 1427626_at | mucin 5, subtype B, tracheobronchial |
| 1450488_at | chemokine (C-C motif) ligand 24 |
| 1418993_s.at | coagulation factor X |
| 1440173_x.at | Selectin, platelet (Selp), mRNA |
| 1426008_a.at | solute carrier family 7 (cationic amino acid transporter, y + system), member 2 |
| 1428034_a.at | tumor necrosis factor receptor superfamily, member 9 |
| 1417795_at | cell adhesion molecule with homology to L1CAM |
| 1417256_at | matrix metalloproteinase 13 |
| 1450290_at | programmed cell death 1 ligand 2 |
| 1452014_a.at | insulin-like growth factor 1 |
| 1436223_at | PREDICTED: integrin beta 8 [Mus musculus], mRNA sequence |
| 1419519_at | insulin-like growth factor 1 |
| 1453076_at | RIKEN cDNA 9130211103 gene |
| 1425386_at | RIKEN cDNA 4833422F24 gene |
| 1437244_at | PREDICTED: similar to growth arrest-specific 2 like 3 [Mus musculus], mRNA sequence |
| 1451289_at | double cortin and calcium/calmodulin-dependent protein kinase-like 1 |
| 1424271_at | double cortin and calcium/calmodulin-dependent protein kinase-like 1 |
| 1419549_at | arginase 1, liver |
| 1420558_at | selectin, platelet |
| 1448898_at | chemokine (C-C motif) ligand 9 |
| 1449305_at | coagulation factor X |
| 1417936_at | chemokine (C-C motif) ligand 9 |
| 1421075_s.at | cytochrome P450, family 7, subfamily b, polypeptide 1 |
| 1434046_at | expressed sequence AA467197 |
| 1460227_at | tissue inhibitor of metalloproteinase 1 |
| 1451798_at | interleukin 1 receptor antagonist |
| 1420582_at | Cd209e antigen |
| 1435409_at | Transcribed locus |
| 1438148_at | gene model 1960, (NCBI) |
| 1418992_at | coagulation factor X |
| 1425663_at | interleukin 1 receptor antagonist |
| 1427221_at | X transporter protein 3 similar 1 gene |
| 1450060_at | polymeric immunoglobulin receptor |
| 1449906_at | selectin, platelet |
| 1421921_at | serine (or cysteine) peptidase inhibitor, clade A, member 3M |
| 1455490_at | upstream binding transcription factor, RNA polymerase I |
| 1421977_at | matrix metalloproteinase 19 |
| 1449153_at | matrix metalloproteinase 12 |
| 1421228_at | chemokine (C-C motif) ligand 7 |
| 1423569_at | glycine amidinotransferase (L-arginine:glycine amidinotransferase) |
| 1419599_s.at | membrane-spanning 4-domains, subfamily A, member 11 |
| 1435190_at | cell adhesion molecule with homology to L1CAM |
| 1424923_at | serine (or cysteine) peptidase inhibitor, clade A, member 3G |
| 1419192_at | interleukin 4 induced 1 |
| 1422873_at | proteoglycan 2, bone marrow |
| 1452794_x.at | spermatogenesis associated glutamate (E)-rich protein 1 |
| 1421074_at | cytochrome P450, family 7, subfamily b, polypeptide 1 |
| 1419598_at | membrane-spanning 4-domains, subfamily A, member 6D |
| 1455980_a.at | PREDICTED: similar to growth arrest-specific 2 like 3 [Mus musculus], mRNA sequence |
| 1425450_at | chitinase 3-like 4 |

The genes are listed by order of fold change.

Table S3. Cluster 2: Unchanged genes (i.e., relatively down-regulated in *I13ra1*^{-/-} mice)

| Affymetrix number/probe set | Gene description |
|-----------------------------|--|
| 1438665_at | sphingomyelin phosphodiesterase 3, neutral |
| 1455531_at | RIKEN cDNA A930031D07 gene |
| 1449285_at | cystatin 9 |
| 1416286_at | regulator of G-protein signaling 4 |
| 1422340_a.at | Actin, gamma 2, smooth muscle, enteric |
| 1449896_at | Melanophilin |
| 1448285_at | regulator of G-protein signaling 4 |
| 1427511_at | Beta-2 microglobulin (B2m), mRNA |
| 1452250_a.at | procollagen, type VI, alpha 2 |
| 1460604_at | Cytochrome b reductase 1, mRNA |
| 1441818_at | Transcribed locus |
| 1426872_at | Fc fragment of IgG binding protein |
| 1431900_a.at | forkhead box A3 |
| 1450276_a.at | Scinderin |
| 1430899_at | similar to secreted gel-forming mucin |
| 1418207_at | FXYD domain-containing ion transport regulator 4 |
| 1448789_at | aldehyde dehydrogenase family 1, subfamily A3 |
| 1418547_at | tissue factor pathway inhibitor 2 |
| 1455770_at | Tryptophan 2,3-dioxygenase, mRNA (cDNA clone MGC:25811 IMAGE:4159877) |
| 1417789_at | small chemokine (C-C motif) ligand 11 |
| 1419017_at | Corin |
| 1459889_at | chloride channel calcium activated 3 |
| 1443408_at | Polo-like kinase 1 (Drosophila) |
| 1422177_at | Interleukin 13 receptor, alpha 2 |
| 1418368_at | resistin like beta |
| 1419093_at | tryptophan 2,3-dioxygenase |
| 1425122_at | Open reading frame 9 |
| 1450618_a.at | small proline-rich protein 2A |
| 1422876_at | calpain 9 (nCL-4) |
| 1439016_x.at | small proline-rich protein 2A |
| 1416200_at | RIKEN cDNA 9230117N10 gene |
| 1424187_at | RIKEN cDNA 2610001E17 gene |
| 1416456_a.at | chitinase, acidic |
| 1421564_at | serine (or cysteine) peptidase inhibitor, clade A, member 3C |
| 1455802_x.at | anterior gradient 2 (<i>Xenopus laevis</i>) |
| 1458484_at | RIKEN cDNA A730020M07 gene |
| 1443746_x.at | dentin matrix protein 1 |
| 1449028_at | ras homolog gene family, member U |
| 1443745_s.at | dentin matrix protein 1 |
| 1417642_at | aldehyde dehydrogenase family 1, subfamily A3 |
| 1419725_at | solute carrier family 26, member 4 |
| 1451416_a.at | transglutaminase 1, K polypeptide |
| 1419268_at | anterior gradient 2 (<i>Xenopus laevis</i>) |
| 1419413_at | chemokine (C-C motif) ligand 17 |
| 1419057_at | solute carrier family 5 (sodium/glucose cotransporter), member |
| 11433600_at | |
| 1450139_at | endoplasmic reticulum (ER) to nucleus signalling 2 |
| 1455431_at | solute carrier family 5 (sodium/glucose cotransporter), member 1 |
| 1440681_at | Adult male cortex cDNA, RIKEN full-length enriched library, |
| 1436712_at | phospholipase A2, group IVC (cytosolic, calcium-independent) |
| 1418165_at | intelectin a |
| 1420413_at | solute carrier family 7 (cationic amino acid transporter, y + system), member 11 |
| 1434583_at | transmembrane protein 26 |
| 1418724_at | complement component factor i |
| 1445626_at | Lectin, galactose binding, soluble 3 (Lgals3), mRNA |
| 1416342_at | tenascin C |
| 1448470_at | fructose bisphosphatase 1 |
| 1418649_at | EGL nine homolog 3 (<i>C. elegans</i>) |
| 1438467_at | macrophage galactose N-acetyl-galactosamine specific lectin 2 |
| 1450616_at | eosinophil-associated, ribonuclease A family, member 5 |
| 1431970_at | transmembrane 7 superfamily member 4 |
| 1445642_at | LEM domain containing 1 |
| 1422648_at | solute carrier family 7 (cationic amino acid transporter, y + system), member 2 |
| 1457483_at | Modulator recognition factor 2 (Mrf2) |

| Affymetrix number/probe set | Gene description |
|-----------------------------|---|
| 1437218_at | fibronectin 1 |
| 1458781_at | Potassium channel, subfamily K, member 13 (Kcnk13), mRNA |
| 1443536_at | solute carrier family 7 (cationic amino acid transporter, y + system), member 11 |
| 1441836_x_at | PREDICTED: hypothetical protein LOC74174 [Mus musculus], mRNA sequence |
| 1449451_at | serine (or cysteine) peptidase inhibitor, clade B (ovalbumin), member 11 |
| 1416125_at | FK506 binding protein 5 |
| 1428195_at | RIKEN cDNA 4631427C17 gene |
| 1450185_a_at | Potassium inwardly-rectifying channel, subfamily J, member 15 |
| 1419610_at | chemokine (C-C motif) receptor 1 |
| 1435354_at | Potassium inwardly-rectifying channel, subfamily J, member 15 |
| 1423523_at | aminoadipate-semialdehyde synthase |
| 1442025_a_at | |
| 1419874_x_at | zinc finger and BTB domain containing 16 |
| 1442026_at | |
| 1439163_at | PREDICTED: zinc finger and BTB domain containing 16 [Mus musculus], mRNA sequence |

The genes are listed by order of fold change.

Table S4. Cluster 3: Altered only in *Il13ra1*^{-/-} mice

| Affymetrix number/probe set | Gene description |
|-----------------------------|--|
| 1427381_at | immunoresponsive gene 1 |
| 1455318_at | T-cell immunoglobulin and mucin domain containing 4 |
| 1419532_at | Interleukin 1 receptor, type II |
| 1447227_at | Solute carrier family 40 (iron-regulated transporter), member 1 |
| 1440104_at | RAN binding protein 2 |
| 1458089_at | FK506 binding protein 5, mRNA (cDNA clone MGC:18417 IMAGE:4237766) |
| 1441799_at | FK506 binding protein 5, mRNA (cDNA clone MGC:18417 IMAGE:4237766) |
| 1422892_s.at | histocompatibility 2, class II antigen E alpha |
| 1418438_at | fatty acid binding protein 2, intestinal |
| 1417065_at | early growth response 1 |
| 1431577_at | |
| 1420357_s.at | X-linked lymphocyte-regulated 3A; X-linked lymphocyte-regulated 3B |
| 1434449_at | Aquaporin 4 |

The genes are listed by order of fold change.

Table S5. Cluster 4: Up-regulated genes (i.e., down-regulated only in WT mice)

| Affymetrix number/probe set | Gene description |
|-----------------------------|---|
| 1449280_at | endothelial cell-specific molecule 1 |
| 1424479_at | cystatin 8 (cystatin-related epididymal spermatogenic) |
| 1422168_a.at | brain derived neurotrophic factor |
| 1448785_at | CBFA2T1 identified gene homolog (human) |
| 1433836_a.at | RIKEN cDNA 8430408G22 gene |
| 1433837_at | RIKEN cDNA 8430408G22 gene |
| 1426433_at | myc target 1 |
| 1448973_at | sulfotransferase family 1D, member 1 |
| 1418138_at | sulfotransferase family 1D, member 1 |
| 1436528_at | Kazal-type serine peptidase inhibitor domain 1 |
| 1416040_at | Lipase, gastric |
| 1444480_at | Protein kinase, AMP-activated, gamma 3 non-catalytic subunit (Prkag3) |
| 1416505_at | nuclear receptor subfamily 4, group A, member 1 |
| 1452260_at | cell death-inducing DFFA-like effector c |
| 1455392_at | RIKEN cDNA 9630019K15 gene |
| 1429953_at | RIKEN cDNA 2210011C24 gene |
| 1416077_at | Adrenomedullin |
| 1449498_at | macrophage receptor with collagenous structure |

The genes are listed by order of fold change.

Table S6. Cluster 1: Up-regulated genes

| Affymetrix number/probe set | Gene name | Gene description |
|-----------------------------|------------|---|
| 1456062_at | Nppa | natriuretic peptide precursor type A |
| 1418373_at | Pgam2 | phosphoglycerate mutase 2 |
| 1427735_a.at | Acta1 | Actin, alpha 1, skeletal muscle |
| 1449218_at | Cox8b | cytochrome c oxidase, subunit VIIIb |
| 1452651_a.at | Myl1 | myosin, light polypeptide 1 |
| 1436867_at | Srl | Sarcalumenin |
| 1418951_at | Txlnb | taxilin beta |
| 1448327_at | Actn2 | actinin alpha 2 |
| 1455374_at | | |
| 1450952_at | Pln | Phospholamban |
| 1417889_at | Apobec2 | apolipoprotein B editing complex 2 |
| 1420347_at | Plunc | palate, lung, and nasal epithelium carcinoma associated |
| 1441111_at | | 15 days embryo embryonic body below diaphragm cDNA, RIKEN full-length enriched library, clone:8230401F05 product:unclassifiable, full insert sequence |
| 1451203_at | Mb | Myoglobin |
| 1428722_at | Ckmt2 | creatine kinase, mitochondrial 2 |
| 1426615_s.at | Ndrp4 | N-myc downstream regulated gene 4 |
| 1422536_at | Tnni3 | troponin I, cardiac |
| 1420884_at | Sln | Sarcolipin |
| 1427446_s.at | Ttn | Titin |
| 1437482_at | Srd5a2l2 | steroid 5 alpha-reductase 2-like 2 |
| 1450123_at | Ryr2 | ryanodine receptor 2, cardiac |
| 1427445_a.at | Ttn | Titin |
| 1453351_at | Tbx20 | T-box 20 |
| 1418370_at | Tnnc1 | troponin C, cardiac/slow skeletal |
| 1460332_at | Pln | Phospholamban |
| 1420465_s.at | Mup1; Mup2 | major urinary protein 1; major urinary protein 2 |
| 1422973_a.at | Thrsp | thyroid hormone responsive SPOT14 homolog (Rattus) |

The genes are listed by order of fold change.

Table S7. Cluster 2: Up-regulated genes

| Affymetrix number/probe set | Gene name | Gene description |
|-----------------------------|-----------|---|
| 1431642_at | Eif2 s3y | Eukaryotic translation initiation factor 2, subunit 3, structural gene Y-linked |
| 1441799_at | Fkbp5 | FK506 binding protein 5, mRNA (cDNA clone MGC:18417 IMAGE:4237766) |
| 1417464_at | Tnnc2 | troponin C2, fast |
| 1427868_x_at | Myh1 | myosin, heavy polypeptide 1, skeletal muscle, adult |
| 1427520_a.at | Myh1 | myosin, heavy polypeptide 1, skeletal muscle, adult |
| 1450060_at | Pigr | Polymeric immunoglobulin receptor |

The genes are listed by order of fold change.

Table S8. Cluster 3: Unaltered genes

| Affymetrix number/probe set | Gene name | Gene description |
|-----------------------------|---------------|--|
| 1419268_at | Agr2 | anterior gradient 2 (<i>Xenopus laevis</i>) |
| 1450139_at | Ern2 | endoplasmic reticulum (ER) to nucleus signalling 2 |
| 1426872_at | Fcgbp | Fc fragment of IgG binding protein |
| 1439016_x_at | Sprr2a | small proline-rich protein 2A |
| 1440409_at | 2210401J11Rik | RIKEN cDNA 2210401J11 gene |
| 1450276_a_at | Scin | Scinderin |
| 1459889_at | Clca3 | chloride channel calcium activated 3 |
| 1441818_at | | Transcribed locus |
| 1422876_at | Capn9 | calpain 9 (nCL-4) |
| 1418165_at | Itlna | intelectin a |
| 1430899_at | LOC546020 | similar to secreted gel-forming mucin |
| 1450618_a_at | Sprr2a | small proline-rich protein 2A |
| 1433600_at | | |
| 1422448_at | Tff2 | trefoil factor 2 (spasmolytic protein 1) |

The genes are listed by order of fold change.

Table S9. Cluster 4: Down-regulated genes

| Affymetrix number/probe set | Gene name | Gene description |
|-----------------------------|---------------|---|
| 1422448_at | Tff2 | trefoil factor 2 (spasmolytic protein 1) Erythroid differentiation regulator 1, mRNA (cDNA clone MGC:69587 IMAGE:6820436) |
| 1439200_x_at | | |
| 1451775_s_at | Il13ra1 | interleukin 13 receptor, alpha 1 |
| 1427164_at | Il13ra1 | interleukin 13 receptor, alpha 1 |
| 1454783_at | Il13ra1 | interleukin 13 receptor, alpha 1 |
| 1427165_at | Il13ra1 | interleukin 13 receptor, alpha 1 |
| 1455431_at | Slc5a1 | solute carrier family 5 (sodium/glucose cotransporter) member 1 |
| 1438239_at | Mid1 | midline 1 |
| 1434292_at | E130013N09Rik | RIKEN cDNA E130013N09 gene |
| 1416456_a_at | Chia | chitinase, acidic |
| 1435761_at | Stfa3 | stefin A3 |

The genes are listed by order of fold change.

Table S10. Comparison of allergen- and IL-4-induced *Il13ra1*-dependent genes

| OVA | | IL-4 | |
|---------------------------|-----------------------------|---------------------------|-----------------------------|
| <i>Il13ra1</i> -dependent | <i>Il13ra1</i> -independent | <i>Il13ra1</i> -dependent | <i>Il13ra1</i> -independent |
| <i>Chi3l3</i> * | <i>Retnla</i> | <i>Chia</i> | <i>Mgl1</i> |
| <i>Arg1</i> | <i>Mgl1</i> | | <i>Arg1</i> |
| <i>Chia</i> | | | <i>Chi3l3</i> |
| | | | <i>Retnla</i> |

* Not induced by OVA challenge.