

Additional files: Abbreviations of Table 1, 2, 3, Figure 3, 4.

Abbreviations of Table 1

KEGG, Kyoto encyclopedia of genes and genomes; FDR, false discovery rate; DEGs, differentially expressed genes; ECM, extracellular matrix; SPI1, Spi-1 proto-oncogene; ACP5, acid phosphatase 5, tartrate resistant; BTK, Bruton tyrosine kinase; SIRPB1A, signal-regulatory protein beta 1A; SIRPB1B, signal-regulatory protein beta 1B; TNFRSF1A, TNF receptor superfamily member 1A; LOC100038947, signal-regulatory protein beta 1-like; LILRA6, leukocyte immunoglobulin like receptor A6; PIK3R5, phosphoinositide-3-kinase regulatory subunit 5; IFNGR1, interferon gamma receptor 1; IL1A, interleukin 1 alpha; CSF1R, colony stimulating factor 1 receptor; TEC, tec protein tyrosine kinase; BLNK, B cell linker; SYK, spleen associated tyrosine kinase; TYROBP, TYRO protein tyrosine kinase binding protein; PIK3CG, phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma; NCF2, neutrophil cytosolic factor 2; NCF1, neutrophil cytosolic factor 1; SOCS3, suppressor of cytokine signaling 3; NCF4, neutrophil cytosolic factor 4; FCGR4, Fc receptor, IgG, low affinity IV; FCGR1, Fc receptor, IgG, high affinity I; SIRPA, signal-regulatory protein alpha; JUNB, jun B proto-oncogene; FCGR3, Fc receptor, IgG, low affinity III; PIRB, paired Ig-like receptor B; IFNAR2, interferon alpha and beta receptor subunit 2; CYBA, cytochrome b-245 alpha chain; CYBB, cytochrome b-245, beta polypeptide; PIRA1, paired-Ig-like receptor A1; PIRA6, paired-Ig-like receptor A6; FCGR2B, Fc receptor, IgG, low affinity Iib; PIRA4, paired-Ig-like receptor A4; PLCG2, phospholipase C gamma 2; TREM2, triggering receptor expressed on myeloid cells 2; LCP2, lymphocyte cytosolic protein 2; MSR1, macrophage scavenger receptor 1; TLR2, toll-like receptor 2; H2-D1, histocompatibility 2, D region locus 1; ITGB5, integrin subunit beta 5; TLR4, toll-like receptor 4; ITGB2, integrin subunit beta 2; ITGAM, integrin subunit alpha M; C1RA, complement component 1, r subcomponent A; THBS1, thrombospondin 1; THBS2, thrombospondin 2; ATP6V0D2, ATPase, H⁺ transporting, lysosomal V0 subunit D2; TUBA1C, tubulin alpha 1c; TCIRG1, T-cell immune regulator 1, ATPase H⁺ transporting V0 subunit a3; MRC1, mannose receptor C-type 1; H2-K1, histocompatibility 2, K1, K region; H2-M3, H2-DMB1, histocompatibility 2, class II, locus Mb1; COLEC12, collectin subfamily member 12; H2-AB1, histocompatibility 2, class II antigen A, beta 1; CTSS, cathepsin S; H2-Q7, histocompatibility 2, Q region locus 7; H2-DMB2, histocompatibility 2, class II, locus Mb2; CTSL, cathepsin L; CD36, CD36 molecule; H2-EB1, histocompatibility 2, class II antigen E beta; H2-OB, histocompatibility 2, O region beta locus; LOC101056305, H-2 class I histocompatibility antigen, K-D alpha chain; H2-AA, histone cluster 1 H2A family member a; CLEC7A, C-type lectin domain containing 7A; CD14, CD14 molecule; ICAM1, intercellular adhesion molecule 1; C3AR1, complement C3a receptor 1; C5AR1, complement C5a receptor 1; C1QC, complement C1q C chain; C1QA, complement C1q A chain; C1QB, complement C1q B chain; CFH, complement factor H; CCL3, C-C motif chemokine ligand 3; CCL2, C-C motif chemokine ligand 2; TNFSF13, TNF superfamily member 13; IL15, interleukin 15; CCL5, C-C motif chemokine ligand 5; MMP3, matrix metalloproteinase 3; CCL12, C-C motif chemokine ligand 12; CD86, CD86 molecule; IL1A, interleukin 1 alpha; CD28, CD28 molecule; TLR1, toll-like receptor 1; ITGAX, integrin subunit alpha X; IL10RB, interleukin 10 receptor subunit beta; CASP8, caspase 8; FCER1G, LBP, lipopolysaccharide binding protein; CEBPB, CCAAT/enhancer binding protein alpha; LSP1, lymphocyte-specific protein 1; CTSD, cathepsin D; CLEC7A, C-type lectin domain family 7, member a; PTPN6, protein tyrosine phosphatase, non-receptor type 6; NAGLU, N-acetyl-alpha-glucosaminidase; CTSZ, cathepsin Z; LIPA, lipase A, lysosomal acid type; PLA2G15, phospholipase A2 group XV; LGMN, legumain; HEXA, hexosaminidase subunit alpha; GUSB, glucuronidase, beta; HEXB, hexosaminidase subunit beta; GLB1, galactosidase beta 1; GNS, glucosamine (N-acetyl)-6-sulfatase; SLC11A1, solute carrier family 11 (proton-coupled divalent metal ion transporters), member 1; CD68, CD68 molecule; LAPTM5, lysosomal protein transmembrane 5; TPP1, tripeptidyl peptidase 1; CTSC, cathepsin C; CTSB, cathepsin B; MAN2B1, mannosidase alpha class 2B member 1; CTSH, cathepsin H; COL4A2, collagen

type IV alpha 2 chain; COL4A1, collagen type IV alpha 1 chain; COL3A1, collagen type III alpha 1 chain; COL5A2, collagen type V alpha 2 chain; COL5A1, collagen type V alpha 1 chain; COL4A5, collagen type IV alpha 5 chain; LAMA2, ITGA6, integrin subunit alpha 6; CD44, COL6A3, collagen type VI alpha 3 chain; COL6A2, collagen type VI alpha 2 chain; COL1A2, collagen type I alpha 2 chain; COL6A1, collagen type VI alpha 1 chain; COL1A1, collagen type I alpha 1 chain; SPP1, secreted phosphoprotein 1; FN1, fibronectin 1; HIST1H2AB, histone cluster 1 H2A family member b; HIST1H2AC, histone cluster 1 H2A family member C; HIST1H2AG, histone cluster 1 H2A family member G; HIST1H2AD, histone cluster 1 H2A family member D; HIST1H2AE, histone cluster 1 H2A family member E; HIST1H2AP, histone cluster 1 H2A family member P; HIST1H2AI, histone cluster 1 H2A family member I; HIST1H2AH, histone cluster 1 H2A family member H; HIST1H2AO, histone cluster 1 H2A family member O; HIST1H2AN, histone cluster 1 H2A family member N; CD244, CD244 molecule; VAV1, vav guanine nucleotide exchange factor 1; HCST, hematopoietic cell signal transducer; CD48, CD48 molecule; RAC2, Rac family small GTPase 2; KLRD1, killer cell lectin like receptor D1; SH3BP2, SH3 domain binding protein 2; LYN, LYN proto-oncogene, Src family tyrosine kinase; LY96, lymphocyte antigen 96; TRIM25, tripartite motif containing 25; CCL4, C-C motif chemokine ligand 4; BCL2A1D, B cell leukemia/lymphoma 2 related protein A1d; BCL2A1B, B cell leukemia/lymphoma 2 related protein A1b; BCL2A1A, B cell leukemia/lymphoma 2 related protein A1a; RIPK1, receptor interacting serine/threonine kinase 1; GM11787, predicted gene 11787; PLAU, plasminogen activator, urokinase; TLR7, toll-like receptor 7; IKKBE, inhibitor of nuclear factor kappa B kinase subunit epsilon; MAP3K8, mitogen-activated protein kinase kinase kinase 8; IFI30, IFI30, lysosomal thiol reductase; IFIH1, interferon induced with helicase C domain 1; PYCARD, PYD and CARD domain containing; OAS1A, 2'-5' oligoadenylate synthetase 1A; CASP1, caspase 1; ARG1, arginase 1; SERPINB6A, serine (or cysteine) peptidase inhibitor, clade B, member 6a; SERPINB6B, Serpinb6b serine (or cysteine) peptidase inhibitor, clade B, member 6b; CSF2RB2, colony stimulating factor 2 receptor, beta 2, low-affinity (granulocyte-macrophage); CRLF2, cytokine receptor like factor 2; CCL8, C-C motif chemokine ligand 8; PF4, platelet factor 4; TNFSF12, TNF superfamily member 12; IL7R, interleukin 7 receptor; CCL7, C-C motif chemokine ligand 7; TNFRSF1B, TNF receptor superfamily member 1B; CXCR4, C-X-C motif chemokine receptor 4; CSF2RB, colony stimulating factor 2 receptor beta common subunit; CSF3R, colony stimulating factor 3 receptor; IL2RG, interleukin 2 receptor subunit gamma; IL13RA1, interleukin 13 receptor subunit alpha 1; CSF1R, colony stimulating factor 1 receptor; TNFRSF13B, TNF receptor superfamily member 13B; EDA2R, ectodysplasin A2 receptor; CXCL16, C-X-C motif chemokine ligand 16; CX3CR1, C-X3-C motif chemokine receptor 1; TNFSF13, TNF superfamily member 13; PTPRC, protein tyrosine phosphatase, receptor type C; ARPC1B, actin related protein 2/3 complex subunit 1B; HCK, HCK proto-oncogene, Src family tyrosine kinase; INPP5D, inositol polyphosphate-5-phosphatase D; TBXAS1, thromboxane A synthase 1; ADCY7, adenylate cyclase 7; FERMT3, fermitin family member 3; VAMP8, vesicle associated membrane protein 8; SNAP23, synaptosome associated protein 23; MYLK, myosin light chain kinase; CDK1, cyclin dependent kinase 1; CFP, complement factor properdin; UGT1A10, UDP glucuronosyltransferase family 1 member A10; UGT1A9, UDP glucuronosyltransferase family 1 member A9; UGT1A7C, UDP glucuronosyltransferase family 1 member A7C; UGT1A2, UDP glucuronosyltransferase family 1 member A2; UGT1A6B, UDP glucuronosyltransferase family 1 member A6B; UGT1A6A, UDP glucuronosyltransferase family 1 member A6A; HMOX1, heme oxygenase 1; UGT1A5, UDP glucuronosyltransferase family 1 member A5; BLVRB, biliverdin reductase B; UGT1A1, UDP glucuronosyltransferase family 1 member A1; IGF1, insulin like growth factor 1; FLNA, filamin A; ANPEP, alanyl aminopeptidase, membrane; GNGT2, G protein subunit gamma transducin 2; AKR1B8, aldo-keto reductase family 1, member B8; KNG1, KNG1; A2M, alpha-2-macroglobulin; F13A1, coagulation factor XIII A chain; SERPINE1, serpin family E member 1; F7, coagulation factor VII; PROS1, protein S; SLC7A8, solute carrier family 7 member 8; SLC7A7, solute carrier family 7 member 7; NAIP6, NLR family, apoptosis inhibitory protein

6; NAIP7, NLR family, apoptosis inhibitory protein 7; NAIP2, NLR family, apoptosis inhibitory protein 2; NAIP5, NLR family, apoptosis inhibitory protein 5; PYCARD, PYD and CARD domain containing; SYT1, Synaptotagmin 1; RAB3A, RAB3A, member RAS oncogene family; CPLX2, complexin 2; CPLX1, complexin 1; STXBP1, syntaxin binding protein 1; ATP6V1G2, ATPase H⁺ transporting V1 subunit G2; UNC13C, unc-13 homolog C ; RIMS1, regulating synaptic membrane exocytosis 1; DNMI1, dynamin 1; UNC13A, unc-13 homolog A; CACNA1B, calcium voltage-gated channel subunit alpha 1 B; ADCY1, adenylyate cyclase 1; GNAI1, G protein subunit alpha i1; ADCY8, adenylyate cyclase 8; GNG13, G protein subunit gamma 13; GRIA3, glutamate ionotropic receptor AMPA type subunit 3; GRIA4, glutamate ionotropic receptor AMPA type subunit 4; GRIN3A, glutamate ionotropic receptor NMDA type subunit 3A; HOMER2, homer scaffolding protein 2; KCNJ3, potassium voltage-gated channel subfamily J member 3; GRM1, glutamate metabotropic receptor 1; GLS2, glutaminase 2; GRM3, glutamate metabotropic receptor 3; GRIA2, glutamate ionotropic receptor AMPA type subunit 2; GRM8, glutamate metabotropic receptor 8; SLC1A6, solute carrier family 1 member 6; GABRB3, gamma-aminobutyric acid type A receptor beta3 subunit; GABRA3, gamma-aminobutyric acid type A receptor beta3 subunit; SCN1A, CALY, calcyon neuron specific vesicular protein; KIF5A, kinesin family member 5A; CAMK2G, calcium/calmodulin dependent protein kinase II gamma; KIF5C, kinesin family member 5C; CAMK2B, calcium/calmodulin dependent protein kinase IIB; PRKG2, protein kinase, cGMP-dependent, type II; RYR2, ryanodine receptor 2; GUCY1B3, guanylate cyclase 1 soluble subunit beta; CAMK1G, calcium/calmodulin dependent protein kinase IG; CACNB2, calcium voltage-gated channel auxiliary subunit beta 2; CACNB4, calcium voltage-gated channel auxiliary subunit beta 4; CACNG2, calcium voltage-gated channel auxiliary subunit gamma 2; CACNA2D3, calcium voltage-gated channel auxiliary subunit alpha2delta 3; KCNJ14, potassium voltage-gated channel subfamily J member 14; CAMKK1, calcium/calmodulin dependent protein kinase kinase 1; GUCY1B3, guanylate cyclase 1 soluble subunit beta; CHRNA7, cholinergic receptor nicotinic alpha 7 subunit; MYH7, myosin heavy chain 7; ATP2B2, ATPase plasma membrane Ca²⁺ transporting 2; ATP2B3, ATPase plasma membrane Ca²⁺ transporting 3; SCN4B, sodium voltage-gated channel beta subunit 4; ACHE, acetylcholinesterase; KCNQ3, potassium voltage-gated channel subfamily Q member 3; E2F2, E2F transcription factor 2; CDC6, cell division cycle 6; DBF4, DBF4 zinc finger; CDC20, cell division cycle 20; ESPL1, extra spindle pole bodies like 1, separase; CDK6, cyclin dependent kinase 6; MCM2, minichromosome maintenance complex component 2; MCM3, minichromosome maintenance complex component 3; MCM5, minichromosome maintenance complex component 5; CDC25B, cell division cycle 25B; MCM6, minichromosome maintenance complex component 6; CCNE2, cyclin E2; CCND1, cyclin D1; MAD2L1, mitotic arrest deficient 2 like 1; CDKN2A, cyclin dependent kinase inhibitor 2A; PLK1, polo like kinase 1; BUB1, BUB1 mitotic checkpoint serine/threonine kinase; MYC, MYC proto-oncogene, bHLH transcription factor; LITAF, lipopolysaccharide induced TNF factor; PSAP, prosaposin; CTSA, cathepsin A; MANBA, mannosidase beta; ASAH1, N-acylsphingosine amidohydrolase 1; CTSK, cathepsin K; LAMP2, lysosomal associated membrane protein 2; SLC17A5, solute carrier family 17 member 5; NPC2, NPC intracellular cholesterol transporter 2; GLA, galactosidase alpha; IGF2R, insulin like growth factor 2 receptor; GALNS, galactosamine (N-acetyl)-6-sulfatase; CLN5, CLN5, intracellular trafficking protein; GBA, glucosylceramidase beta; CXCL5, C-X-C motif chemokine ligand 5; C4B, complement C4B; C3, complement C3; SERPING1, serpin family G member 1; C2, complement 2; C1S1, complement component 1, s subcomponent 1; TFPI, tissue factor pathway inhibitor; GABRG2, gamma-aminobutyric acid type A receptor gamma2 subunit; SLC17A6, solute carrier family 17 member 6; GABRA1, gamma-aminobutyric acid type A receptor alpha1 subunit; GABRB2, gamma-aminobutyric acid type A receptor beta2 subunit; GABRA5, gamma-aminobutyric acid type A receptor alpha5 subunit; GRM5, glutamate metabotropic receptor 5; WAS, Wiskott-Aldrich syndrome.

Abbreviations of Table 2

PPI, protein-protein interaction; DEGs, differentially expressed genes; nodes indicate protein; edges indicate interaction relationships; IDs, protein name; Rgs19, regulator of G protein signaling 19; Kng1, kininogen 1; Cxcl16, C-X-C motif chemokine ligand 16; Adcy7, adenylate cyclase 7; C3ar1, complement C3a receptor 1; C5ar1, complement C5a receptor 1; Ccl5, C-C motif chemokine ligand 5; Ccl6, chemokine (C-C motif) ligand 6; Ccl9, chemokine (C-C motif) ligand 9; Cnr2, cannabinoid receptor 2; Cxcr4, C-X-C motif chemokine receptor 4; Grm3, glutamate metabotropic receptor 3; Grm8, glutamate metabotropic receptor 8; Hebp1, heme binding protein 1; Htr1b, 5-hydroxytryptamine receptor 1B; Nmu, neuromedin U; Npy5r, neuropeptide Y receptor Y5; Oprl1, opioid related nociceptin receptor 1; Sst, somatostatin; Rgs18, regulator of G protein signaling 18; Cck, cholecystokinin; Cysl1r1, cysteinyl leukotriene receptor 1; Gpr65, G protein-coupled receptor 65; Htr2b, 5-hydroxytryptamine (serotonin) receptor 2B; P2ry6, pyrimidineric receptor P2Y6; Tac2, tachykinin 2; Tacr3, tachykinin receptor 3; Col8a1, collagen type VIII alpha 1 chain; Birc5, baculoviral IAP repeat containing 5; Ccna2, cyclin A2; Ccnb2, cyclin B2; Cdk1, cyclin dependent kinase 1; Melk, maternal embryonic leucine zipper kinase; Mki67, marker of proliferation Ki-67; Ncapg2, non-SMC condensin II complex subunit G2; Pbk, PDZ binding kinase; Rrm2, ribonucleotide reductase regulatory subunit M2; Ube2c, ubiquitin conjugating enzyme E2 C; Ect2, epithelial cell transforming 2; A2m, alpha-2-macroglobulin; F13a1, coagulation factor XIII A chain; Pf4, platelet factor 4; Pros1, protein S; Serpine1, serpin family E member 1; Srgn, serglycin; Timp1, TIMP metalloproteinase inhibitor 1; Fn1, fibronectin 1; Coll1a1, collagen type I alpha 1 chain; Coll1a2, collagen type I alpha 2 chain; Col3a1, collagen type III alpha 1 chain; Icam1, intercellular adhesion molecule 1; Fcgr1, Fc receptor, IgG, high affinity I; H2-Aa, histocompatibility 2, class II antigen A, alpha; H2-Ab1, histocompatibility 2, class II antigen A, beta 1; H2-Eb1, histocompatibility 2, class II antigen E beta; Ifi30, IFI30, lysosomal thiol reductase; Irf8, interferon regulatory factor 8; Oas1a, 2'-5' oligoadenylate synthetase 1A; Cd44, CD44 molecule (Indian blood group); Col4a1, collagen type IV alpha 1 chain; Col4a2, collagen type IV alpha 2 chain; Col4a5, collagen type IV alpha 5 chain; Col5a1, collagen type V alpha 1 chain; Col5a2, collagen type V alpha 2 chain; Col6a1, collagen type VI alpha 1 chain; Col14a1, collagen type XIV alpha 1 chain; Col18a1, collagen type XVIII alpha 1 chain; Col6a3, collagen type VI alpha 3 chain; Itga6, integrin subunit alpha 6; Itgb5, integrin subunit beta 5; Col6a2, collagen type VI alpha 2 chain; Kcns3, potassium voltage-gated channel modifier subfamily S member 3; Kcna2, potassium voltage-gated channel subfamily A member 2; Kcnab1, potassium voltage-gated channel subfamily A member regulatory beta subunit 1; Kcnab2, potassium voltage-gated channel subfamily A regulatory beta subunit 2; Kcnc1, potassium voltage-gated channel subfamily C member 1; Kcng4, potassium voltage-gated channel modifier subfamily G member 4; Kcnh2, potassium voltage-gated channel subfamily H member 2; Kcnh5, potassium voltage-gated channel subfamily H member 5; Syk, spleen associated tyrosine kinase; C1qa, complement C1q A chain; C1qc, complement C1q C chain; Csf1r, colony stimulating factor 1 receptor; C1qb, complement C1q B chain; Thbs1, thrombospondin 1; Thbs2, thrombospondin 2; Spp1, secreted phosphoprotein 1; Mmp13, matrix metalloproteinase 13; Mmp8, matrix metalloproteinase 8; Mmp3, matrix metalloproteinase 3; Ctsl, cathepsin L; Ctsd, cathepsin D; Lgmn, legumain; Ctss, cathepsin S; Vav1, vav guanine nucleotide exchange factor 1; Blnk, B cell linker; Lyn, LYN proto-oncogene, Src family tyrosine kinase; Tec, tec protein tyrosine kinase; Btk, Bruton tyrosine kinase; Pik3ap1, phosphoinositide-3-kinase adaptor protein 1; Pik3cg, phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma; Inpp5d, inositol polyphosphate-5-phosphatase D; Pik3r5, phosphoinositide-3-kinase regulatory subunit 5; Fcer1g, Fc fragment of IgE receptor Ig; Plcg2, phospholipase C gamma 2; Cd14, CD14 molecule; Cd180, CD180 molecule; Ly86, lymphocyte antigen 86; Ly96, lymphocyte antigen 96; Tlr4, toll-like receptor 4; Cyba, cytochrome b-245 alpha chain; Ncf1, neutrophil cytosolic factor 1; Ncf4, neutrophil cytosolic factor 4; Cybb, cytochrome b-245 beta chain; Itgam, integrin subunit alpha M; Itgb2, integrin subunit beta 2; Hck, HCK proto-oncogene, Src family tyrosine kinase; Fcgr3, Fc receptor, IgG, low affinity III; Lila6, leukocyte

immunoglobulin like receptor A6; Fcgr2b, Fc receptor, IgG, low affinity Iib; Pirb, paired Ig-like receptor B; Cdca5, cell division cycle associated 5; Anln, anillin actin binding protein; Aurkb, aurora kinase B; Bub1, BUB1 mitotic checkpoint serine/threonine kinase; Cdc20, cell division cycle 20; Cenpe, centromere protein E; Cenpf, centromere protein F; Hmnr, hyaluronan mediated motility receptor; Cep55, centrosomal protein 55; Kif20b, kinesin family member 20B; Kif11, kinesin family member 11; Kif20a, kinesin family member 20A; Kif23, kinesin family member 23; Mad2l1, mitotic arrest deficient 2 like; Mcm5, minichromosome maintenance complex component 5; Ncapg, non-SMC condensin I complex subunit G; Ncaph, non-SMC condensin I complex subunit H; Ndc80, NDC80, kinetochore complex component; Nuf2, NUF2, NUF2, NDC80 kinetochore complex component; Nusap1, nucleolar and spindle associated protein 1; Plk1, polo like kinase 1; Top2a, DNA topoisomerase II alpha; Zwilch, zwilch kinetochore protein; Prc1, protein regulator of cytokinesis 1; Cdkn3, cyclin dependent kinase inhibitor 3; Cdc6, cell division cycle 6; Smc4, structural maintenance of chromosomes 4; Mcm3, minichromosome maintenance complex component 3; Rad51ap1, RAD51 associated protein 1; Asf1b, anti-silencing function 1B histone chaperone; Cenpa, centromere protein A; Cenph, centromere protein H; Cdca8, cell division cycle associated 8; Shcbp1, SHC binding and spindle associated 1; Ckap2, cytoskeleton associated protein 2; Cenpi, centromere protein I; Esco2, establishment of sister chromatid cohesion N-acetyltransferase 2; Esp11, extra spindle pole bodies like 1, separate; Spc25, kinetochore-associated Ndc80 complex subunit SPC25; Spdl1, spindle apparatus coiled-coil protein 1; Sgol1, shugoshin 1; Ckap2l, cytoskeleton associated protein 2 like; Uhrf1, ubiquitin like with PHD and ring finger domains 1; Trip13, thyroid hormone receptor interactor 13; S1pr2, sphingosine-1-phosphate receptor 2; Adcy1, adenylate cyclase 1; Adcy8, adenylate cyclase 8; Anxa1, annexin A1; Ccr1, C-C motif chemokine receptor 1; Ccr5, C-C motif chemokine receptor 5; Cxcr6, C-X-C motif chemokine receptor 6; Gnai1, G protein subunit alpha i1; Npy2r, neuropeptide Y receptor Y2; P2ry14, purinergic receptor; Pnoc, prepronociceptin; Rgs4, regulator of G protein signaling 4; S1pr3, sphingosine-1-phosphate receptor 3; C3, complement C3; Cxcl10, C-X-C motif chemokine ligand 10; Cxcl1, C-X-C motif chemokine ligand 1; Cxcl2, C-X-C motif chemokine ligand 2; Cxcl5, C-X-C motif chemokine ligand 5; Hcar2, hydroxycarboxylic acid receptor 2; P2ry13, purinergic receptor P2Y, G-protein coupled 13.

Abbreviations of Table 3

BP, biological process; MF, molecular function; FDR, false discovery rate; PPI, protein-protein interaction; KEGG, Kyoto encyclopedia of genes and genomes; DEGs, differentially expressed genes; C3AR1, complement C3a receptor 1; P2RY6, pyrimidinergic receptor P2Y6; HTR1B, 5-hydroxytryptamine receptor 1B; GRM3, glutamate metabotropic receptor 3; C5AR1, , complement C5a receptor 1; TACR3, tachykinin receptor 3; CYSLTR1, cysteinyl leukotriene receptor 1; GRM8, glutamate metabotropic receptor 8; OPRL1, opioid related nociceptin receptor 1; CNR2, cannabinoid receptor 2; HTR2B, 5-hydroxytryptamine (serotonin) receptor 2B ;NPY5R, neuropeptide Y receptor Y5; COL4A2, collagen type IV alpha 2 chain; COL4A1, collagen type IV alpha 1 chain; COL3A1, collagen type III alpha 1 chain; ITGB5, integrin subunit beta 5; COL5A2, collagen type V alpha 2 chain; COL5A1, collagen type V alpha 1 chain; COL4A5, collagen type IV alpha 5 chain; ITGA6, integrin subunit alpha 6; COL6A3, collagen type VI alpha 3 chain; COL6A2, collagen type VI alpha 2 chain ; COL1A2, collagen type I alpha 2 chain; COL6A1, collagen type VI alpha 1 chain; COL1A1, collagen type I alpha 1 chain; FN1, fibronectin 1; COL18A1, collagen type XVIII alpha 1 chain; COL14A1, collagen type XIV alpha 1 chain; KCNS3, potassium

voltage-gated channel modifier subfamily S member 3; KCNA2, potassium voltage-gated channel subfamily A member 2; KCNAB1, potassium voltage-gated channel subfamily A member regulatory beta subunit 1; KCNAB2, potassium voltage-gated channel subfamily A regulatory beta subunit 2; KCNC1, potassium voltage-gated channel subfamily C member 1; KCNG4, potassium voltage-gated channel modifier subfamily G member 4; KCNH2, potassium voltage-gated channel subfamily H member 2; KCNH5, potassium voltage-gated channel subfamily H member 5; PIK3CG, phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma; NCF1, neutrophil cytosolic factor 1; NCF4, neutrophil cytosolic factor 4; BTK, Bruton tyrosine kinase; FCGR3, Fc receptor, IgG, low affinity III; PIRB, paired Ig-like receptor B; CYBA, cytochrome b-245 alpha chain; CYBB, cytochrome b-245 beta chain; FCGR2B, Fc receptor, IgG, low affinity Iib; PLCG2, phospholipase C gamma 2; LILRA6, leukocyte immunoglobulin like receptor A6; PIK3R5, phosphoinositide-3-kinase regulatory subunit 5; CSF1R, colony stimulating factor 1 receptor; SYK, spleen associated tyrosine kinase; BLNK, B cell linker; TEC, tec protein tyrosine kinase; TLR4, toll-like receptor 4; ITGB2, C integrin subunit beta 2; CTSS, cathepsin S; ITGAM, integrin subunit alpha M; CTSL, cathepsin L; THBS1, thrombospondin 1; THBS2, thrombospondin 2; LYN, LYN proto-oncogene, Src family tyrosine kinase; PIK3AP1, phosphoinositide-3-kinase adaptor protein 1; INPP5D, inositol polyphosphate-5-phosphatase D; VAV1, vav guanine nucleotide exchange factor 1; BLNK, B cell linker; BTK, Bruton tyrosine kinase; HCK, HCK proto-oncogene, Src family tyrosine kinase; FCER1G, Fc fragment of IgE receptor Ig; C1QA, complement C1q A chain; C1QB, complement C1q B chain; LY96, lymphocyte antigen 96; C1QC, complement C1q C chain; CTSD, cathepsin D; CDC6, cell division cycle 6; MAD2L1, mitotic arrest deficient 2 like; PLK1, polo like kinase 1; BUB1, BUB1 mitotic checkpoint serine/threonine kinase; CDC20, cell division cycle 20; ESPL1, extra spindle pole bodies like 1, separate; MCM3, minichromosome maintenance complex component 3; MCM5, minichromosome maintenance complex component 5; SGOL1, shugoshin 1; ADCY1, adenylate cyclase 1; CCR5, C-C motif chemokine receptor 5; ADCY8, adenylate cyclase 8; GNAI1, G protein subunit alpha i1; CCR1, C-C motif chemokine receptor 1; CXCR6, C-X-C motif chemokine receptor 6; CXCL1, C-X-C motif chemokine ligand 1; S1PR3, sphingosine-1-phosphate receptor 3; C3, complement C3; P2RY13, purinergic receptor P2Y, G-protein coupled 13; HCAR2, hydroxycarboxylic acid receptor 2

Abbreviations of Figure 3

A, module 1; B, module 2; C, module 3; D, module 4. PPI, protein-protein interaction; Rgs19, regulator of G protein signaling 19; Kng1, kininogen 1; Cxcl16, C-X-C motif chemokine ligand 16; Adcy7, adenylate cyclase 7; C3ar1, complement C3a receptor 1; C5ar1, complement C5a receptor 1; Ccl5, C-C motif chemokine ligand 5; Ccl6, chemokine (C-C motif) ligand 6; Ccl9, chemokine (C-C motif) ligand 9; Cnr2, cannabinoid receptor 2; Cxcr4, C-X-C motif chemokine receptor 4; Grm3, glutamate metabotropic receptor 3; Grm8, glutamate metabotropic receptor 8; Hebp1, heme binding protein 1; Htr1b, 5-hydroxytryptamine receptor 1B; Nmu, neuromedin U; Npy5r, neuropeptide Y receptor Y5; Oprl1, opioid related nociceptin receptor 1; Sst, somatostatin; Rgs18, regulator of G protein signaling 18; Cck, cholecystokinin; Cysltr1, cysteinyl leukotriene receptor 1; Gpr65, G protein-coupled receptor 65; Htr2b,

5-hydroxytryptamine (serotonin) receptor 2B; P2ry6, pyrimidinergic receptor P2Y6; Tac2, tachykinin 2; Tacr3, tachykinin receptor 3; Col8a1, collagen type VIII alpha 1 chain; Birc5, baculoviral IAP repeat containing 5; Ccna2, cyclin A2; Ccnb2, cyclin B2; Cdk1, cyclin dependent kinase 1; Melk, maternal embryonic leucine zipper kinase; Mki67, marker of proliferation Ki-67; Ncapg2, non-SMC condensin II complex subunit G2; Pbk, PDZ binding kinase; Rrm2, ribonucleotide reductase regulatory subunit M2; Ube2c, ubiquitin conjugating enzyme E2 C; Ect2, epithelial cell transforming 2; A2m, alpha-2-macroglobulin; F13a1, coagulation factor XIII A chain; Pf4, platelet factor 4; Pros1, protein S; Serpine1, serpin family E member 1; Srgn, serglycin; Timp1, TIMP metalloproteinase inhibitor 1; Fn1, fibronectin 1; Col1a1, collagen type I alpha 1 chain; Col1a2, collagen type I alpha 2 chain; Col3a1, collagen type III alpha 1 chain; Icam1, intercellular adhesion molecule 1; Fcgr1, Fc receptor, IgG, high affinity I; H2-Aa, histocompatibility 2, class II antigen A, alpha; H2-Ab1, histocompatibility 2, class II antigen A, beta 1; H2-Eb1, histocompatibility 2, class II antigen E beta; Ifi30, IFI30, lysosomal thiol reductase; Irf8, interferon regulatory factor 8; Oas1a, 2'-5' oligoadenylate synthetase 1A; Cd44, CD44 molecule (Indian blood group); Col4a1, collagen type IV alpha 1 chain; Col4a2, collagen type IV alpha 2 chain; Col4a5, collagen type IV alpha 5 chain; Col5a1, collagen type V alpha 1 chain; Col5a2, collagen type V alpha 2 chain; Col6a1, collagen type VI alpha 1 chain; Col14a1, collagen type XIV alpha 1 chain; Col18a1, collagen type XVIII alpha 1 chain; Col6a3, collagen type VI alpha 3 chain; Itga6, integrin subunit alpha 6; Itgb5, integrin subunit beta 5; Col6a2, collagen type VI alpha 2 chain; Kcns3, potassium voltage-gated channel modifier subfamily S member 3; Kcna2, potassium voltage-gated channel subfamily A member 2; Kcnab1, potassium voltage-gated channel subfamily A member regulatory beta subunit 1; Kcnab2, potassium voltage-gated channel subfamily A regulatory beta subunit 2; Kcnc1, potassium voltage-gated channel subfamily C member 1; Kcng4, potassium voltage-gated channel modifier subfamily G member 4; Kcnh2, potassium voltage-gated channel subfamily H member 2; Kcnh5, potassium voltage-gated channel subfamily H member 5; Syk, spleen associated tyrosine kinase; C1qa, complement C1q A chain; C1qc, complement C1q C chain; Csf1r, colony stimulating factor 1 receptor; C1qb, complement C1q B chain; Thbs1, thrombospondin 1; Thbs2, thrombospondin 2; Spp1, secreted phosphoprotein 1; Mmp13, matrix metalloproteinase 13; Mmp8, matrix metalloproteinase 8; Mmp3, matrix metalloproteinase 3; Ctsl, cathepsin L; Ctsd, cathepsin D; Lgmn, legumain; Ctss, cathepsin S; Vav1, vav guanine nucleotide exchange factor 1; Blnk, B cell linker; Lyn, LYN proto-oncogene, Src family tyrosine kinase; Tec, tec protein tyrosine kinase; Btk, Bruton tyrosine kinase; Pik3ap1, phosphoinositide-3-kinase adaptor protein 1; Pik3cg, phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma; Inpp5d, inositol polyphosphate-5-phosphatase D; Pik3r5, phosphoinositide-3-kinase regulatory subunit 5; Fcgr1g, Fc fragment of IgE receptor Ig; Plcg2, phospholipase C gamma 2; Cd14, CD14 molecule; Cd180, CD180 molecule; Ly86, lymphocyte antigen 86; Ly96, lymphocyte antigen 96; Tlr4, toll-like receptor 4; Cyba, cytochrome b-245 alpha chain; Ncf1, neutrophil cytosolic factor 1; Ncf4, neutrophil cytosolic factor 4; Cybb, cytochrome b-245 beta chain; Itgam, integrin subunit alpha M; Itgb2, integrin subunit beta 2; Hck, HCK proto-oncogene, Src family tyrosine kinase; Fcgr3, Fc receptor, IgG, low affinity III; Lila6, leukocyte immunoglobulin like receptor A6; Fcgr2b, Fc receptor, IgG, low affinity IIb; Pirb, paired Ig-like receptor B. Red, up-regulated genes; green, down-regulated genes.

Abbreviations of Figure 4

A, module 1; B, module 2. PPI, protein-protein interaction; Cdca5, cell division cycle associated 5; Anln, anillin actin binding protein; Aurkb, aurora kinase B; Bub1, BUB1 mitotic checkpoint serine/threonine kinase; Cdc20, cell division cycle 20; Cenpe, centromere protein E; Cenpf, centromere protein F; Hmnr, hyaluronan mediated motility receptor; Cep55, centrosomal protein 55; Kif20b, kinesin family member

20B; Kif11, kinesin family member 11; Kif20a, kinesin family member 20A; Kif23, kinesin family member 23; Mad2l1, mitotic arrest deficient 2 like; Mcm5, minichromosome maintenance complex component 5; Ncapg, non-SMC condensin I complex subunit G; Ncaph, non-SMC condensin I complex subunit H; Ndc80, NDC80, kinetochore complex component; Nuf2, NUF2, NUF2, NDC80 kinetochore complex component; Nusap1, nucleolar and spindle associated protein 1; Plk1, polo like kinase 1; Top2a, DNA topoisomerase II alpha; Zwilch, zwilch kinetochore protein; Prc1, protein regulator of cytokinesis 1; Cdkn3, cyclin dependent kinase inhibitor 3; Cdc6, cell division cycle 6; Smc4, structural maintenance of chromosomes 4; Mcm3, minichromosome maintenance complex component 3; Rad51ap1, RAD51 associated protein 1; Asf1b, anti-silencing function 1B histone chaperone; Cenpa, centromere protein A; Cenph, centromere protein H; Cdca8, cell division cycle associated 8; Shcbp1, SHC binding and spindle associated 1; Ckap2, cytoskeleton associated protein 2; Cenpi, centromere protein I; Esco2, establishment of sister chromatid cohesion N-acetyltransferase 2; Esp1, extra spindle pole bodies like 1, separase; Spc25, kinetochore-associated Ndc80 complex subunit SPC25; Spdl1, spindle apparatus coiled-coil protein 1; Sgol1, shugoshin 1; Ckap2l, cytoskeleton associated protein 2 like; Uhrf1, ubiquitin like with PHD and ring finger domains 1; Trip13, thyroid hormone receptor interactor 13; S1pr2, sphingosine-1-phosphate receptor 2; Adcy1, adenylate cyclase 1; Adcy8, adenylate cyclase 8; Anxa1, annexin A1; Ccr1, C-C motif chemokine receptor 1; Ccr5, C-C motif chemokine receptor 5; Cxcr6, C-X-C motif chemokine receptor 6; Gnai1, G protein subunit alpha i1; Npy2r, neuropeptide Y receptor Y2; P2ry14, purinergic receptor; Pnoc, prepronociceptin; Rgs4, regulator of G protein signaling 4. Red, up-regulated genes; green, down-regulated genes.