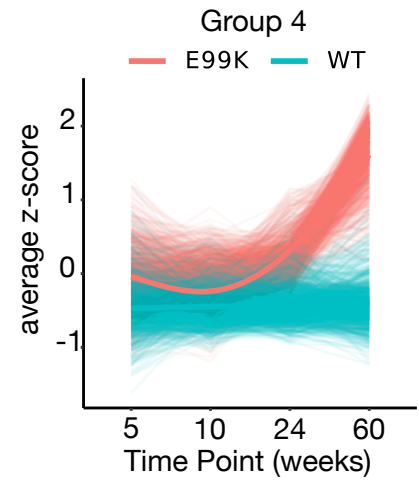
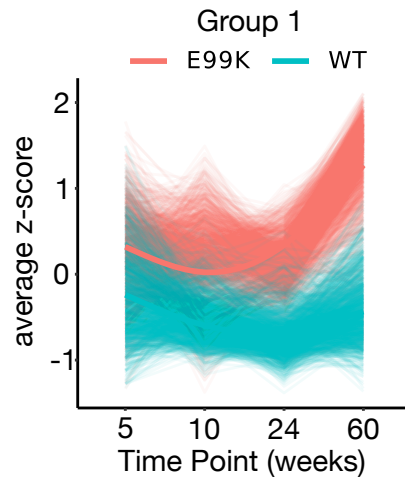
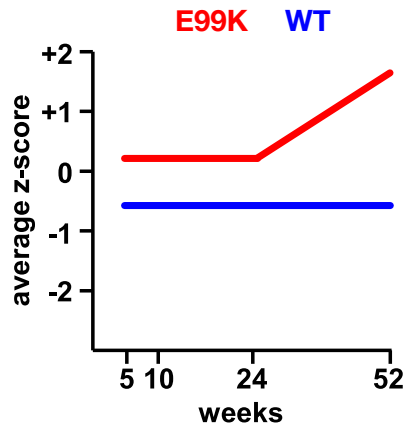


Group 1/4 Early up + Late surge



Group 1 main functional clusters

- Ribosome biogenesis
Nol12, Rrp15, Gnl1, Spout1, Trmt61a, Mett11, Zfp593, Ddx54, 3110082I17Rik, Nop16, Nolc1, Nop2, Ddx27, Pwp2, Zfp622, Rrp8, Ddx31, Grwd1, Bop1, Noc2L, Rrp1, Surf6, Ebna1bp2, Ppan, Trmt1, Wdr4, Car11, Nle1, Hgh1, Rexo4, Pmepa1, Jsrrp1
- Release of cytochrome c from mitochondria
Pkmyt1, Cdc25b, Trp53, Cdk4, Snai1, Hspb1, Bbc3, Ddit3, Bad, Bok, Bax, Bid, Il2rg, Ccn1, Brd3, Sfn, Sertad1, Gadd45b, Irf2, Gadd45g, Sp140, Banp
- Mixed, incl. RHO GTPases activate WASPs and WAVES, and formin, FH2 domain
Actb, Lmn2, Nes, Vim, Dpf1, Evl, Pfn1, Mrtfa, Lmna, Itgb5, Myo7a, Myh9, Vasp, Arpc1b, Actn1, Myl6b, Whamm, Tmsb10, Itga10, Parvg
- Histone deacetylase complex
Hdac1, Sin3b, Macroh2a1, Gatad2a, Wdr73, Sap30, Hdac10, H2aj, Rnf220, Taf1c, Ubt1, Fhl3, Foxp4, Tgif2, Zbtb7b
- COPI-dependent Golgi-to-ER retrograde traffic
Arf6, Scamp2, Arf5, Arf3, Psd, Arfip2, Arap1, Klac3, Kif26b, Cyth2, Kifc5b, Arfip1, Tbc1d10a
- Positive regulation of interferon- β production
Irf1, Uba7, Oas1a, Oas1g, Oas2, Dhx58, Isg15, Ifi35, Oas1c, Bst2, Ghdc, Fbxl19
- Ionotropic glutamate receptor complex
Begain, Dlg3, Dlg4, Grik5, Cpt1c, Olfm2, Grin2c, Nlgn2, Cnp, Lrnf3, Igsf9, Kirrel3
- Regulator of G protein signalling domain
Grk4, Gna15, Rgs16, Rgs10, Gnai2, Rgs11, Ptger4, Tbx2r, Gng8, Rgs3, Nuch2
- RET signalling
Ephb3, Src, Shc1, Pelp1, Robo3, Csk, Sirpa, Unc5a, Adam15, Dok1, Nrtn
- Tumour necrosis factor receptor binding
Traf5, Tnfrsf1a, Cd40, Ripk3, Tradd, Fadd, Tnfsf12, Ltbr, Tnfsf13, Il17rc, Madd

Group 4 main functional clusters

- Cytokine-cytokine receptor interaction
Icam1, Tlr9, Il6, Csf1r, Flt3, Fgfr2, Ccl2, Ikbke, Vegfd, Irak4, Procr, Il10ra, Nfkbiz, Ctsb, Cyba, Lcp1, Itgal, Il17ra, Cd47, Csf3r, Cd209a, Ncf1, Irf5, Tnfsf13b, Osm, Casp4, Mefv, Tnfrsf1b, Lif, Angpt2, Serpinb9b, Il11, Ctss, Orl1, Fcgr1, Cxcl3, Il1r1, Cxcl14, Ptx3, Fcgr2b, Tnfaip6, Nlrp3, Cybb, Mmp12, Tlr1, Itgb2, Casp1, Selp, Il33, Il12b, Il4ra, Ly6c2, Cd14, Cxcl16, Il6ra, Itgax, Ccl19, Il7, Cxcl13, Socs3, Fcgr3, Itgam, Adgre1, Il1rn, Mmp9, Cd68, Ccl22, Ccl3, Mmp3, Xcr1, Cxcr6, Ccl9, Vcam1, Cxcl5, Ifng, Ccl8, Cxcl10, Ccr7, Ccl12, Ccl4, Ccl5, Ccl6, Cxcr3, Ccr1, Ccr5, Ccr2, Ccl7, Il18rap, Tlr13, Csf2rb, Batf3, Gm2a, Il12rb1, Ebi3, Card9, Il27, Zc3h12d, Il21r, Stat4, Il23r, Ltb, Csf2rb2, Nlrp4, Fpr1, Tnfsf8, Tnfsf15, Il9r, Chl1, Tnfsf14, Cd207, Ctsc, Aim2, Ptpn1, Unc93b1, Klhl35, Irak3, Bcl3, Ticam2, Litaf, Naip5, Tlr11, Tlr12, Cd163l1, 5830411N06Rik, Il18bp, Nlrp1b, Naip2, Klrg2, Neurl3
- Adaptive immune response
Ncam1, Il7r, Irf8, Tnfrsf9, Cd3e, Cd8a, Tbx21, Klrk1, Itgae, Cd74, Cd6, Havcr2, Pdcd1, Gzmb, Foxp3, Ptprc, Cd4, Cd244a, Cd5, Zap70, Cd2, Spn, Lck, Cd52, Cd27, Cd48, Slamf7, Nkg7, H2-Eb1, H2-Ab1, Cd3d, H2-Aa, Itk, Tnfrsf8, Ikzf1, Cd37, Cd22, Siglec, Maf, Eomes, Batf, Il2rb, Gzm, Tigit, Klrk1, Cst7, Cd3g, Cd8b1, Ikzf3, Slamf6, Icosl, Btla, Tnfrsf4, Tcf7, Runx3, Gimap3, H2-Eb2, H2-M11, H2-T22, Ctsw, H2-M2, H2-M3, Ptpn22, H2-K1, Ciita, Pax5, Sh2d2a, Spib, Vsr, Ly9, Lax1, Tnfrsf13c, H2-D1, Fam3c, Tnfrsf13b, March1, H2-DMA, H2-Ob, H2-Oa, H2-DMb2, H2-DMb1, Emb, Izumo1r, Basp1, Sit1, Pdcd7, Bmx, H60b, Gnaz
- Mixed, incl. antifungal innate immune response, and immunoglobulin
Tyrobp, Fcgr4, Fcgr1g, Clec4e, Lyz2, Trem1, Trem2, Aif1, Cd300a, Ly86, Mpeg1, Lair1, Ncf2, Ncf4, Laptm5, Cd53, Clec10a, Clec5a, Clec4a2, Clec12a, Hcst, Clec4d, Siglec, Igsf6, Lst1, Ms4a7, Ifi211, Clec4n, Clec4a3, Cd300c2, Ms4a6d, P2ry6, Sirpb1a, Clec4b1, Gm5150, Cd300ld, Cd200r4, A530064D06Rik, Cd300e, Sirpb1c, Cd300lb, Klra2, Fcrlb
- Complement and coagulation cascades
C5ar1, Cfb, C3, C3ar1, Vsiga4, C4b, Cfp, C6, A2m, C5ar2, Cfi, C2, C1ra, C1s1, Serpina3n, Serpina3i, C7, Cfhr2
- Fc ϵ R1-mediated Ca²⁺ mobilisation, and B cell receptor complex
Inpp5d, Fyb, Lcp2, Fermt3, Vav1, Lat, Skap1, Arhgap30, Dennd1c, Rasal3, Card11, Ccdc88b, Sla, Rasgrp1, Carmil2, Lat2, Skap2
- Mixed, incl. cellular response to interferon-beta, and antiviral mechanism by IFN-stimulated genes
Ifit3, Irf7, Ifit1, Oasl1, Usp18, Slfn2, Epsti1, Zbp1, Sp100, Oas3, Ifi205, Batf2, Sp110, Ifi209, Ifit3b
- Plasma lipoprotein particle
Abcg1, Msr1, Saa3, Apoe, Lsr, Apol11a, Apobr, Apol9a, Pltp, Itih3
- WNT signalling pathway
Myoc, Wnt10a, Wnt7a, Wnt4, Dkk2, Fzd7, Rspo1, Rspo3, Foxl2, Rspo2
- Phosphatidylcholine metabolism
Lpcat1, Cyp4f18, Pla2g2d, Pafah1b3, Lpcat4, Lpcat2, Pla2g15, Pemt, Plppr3
- Mostly uncharacterised, incl. GTPase GIMA/IAN/Toc, and GTPase-activator protein for Rho-like GTPases
Arhgap9, Lpxn, Myo1f, Rac2, Myo1g, Arhgap45, Nckap1, Wdfy4, Ralbp1