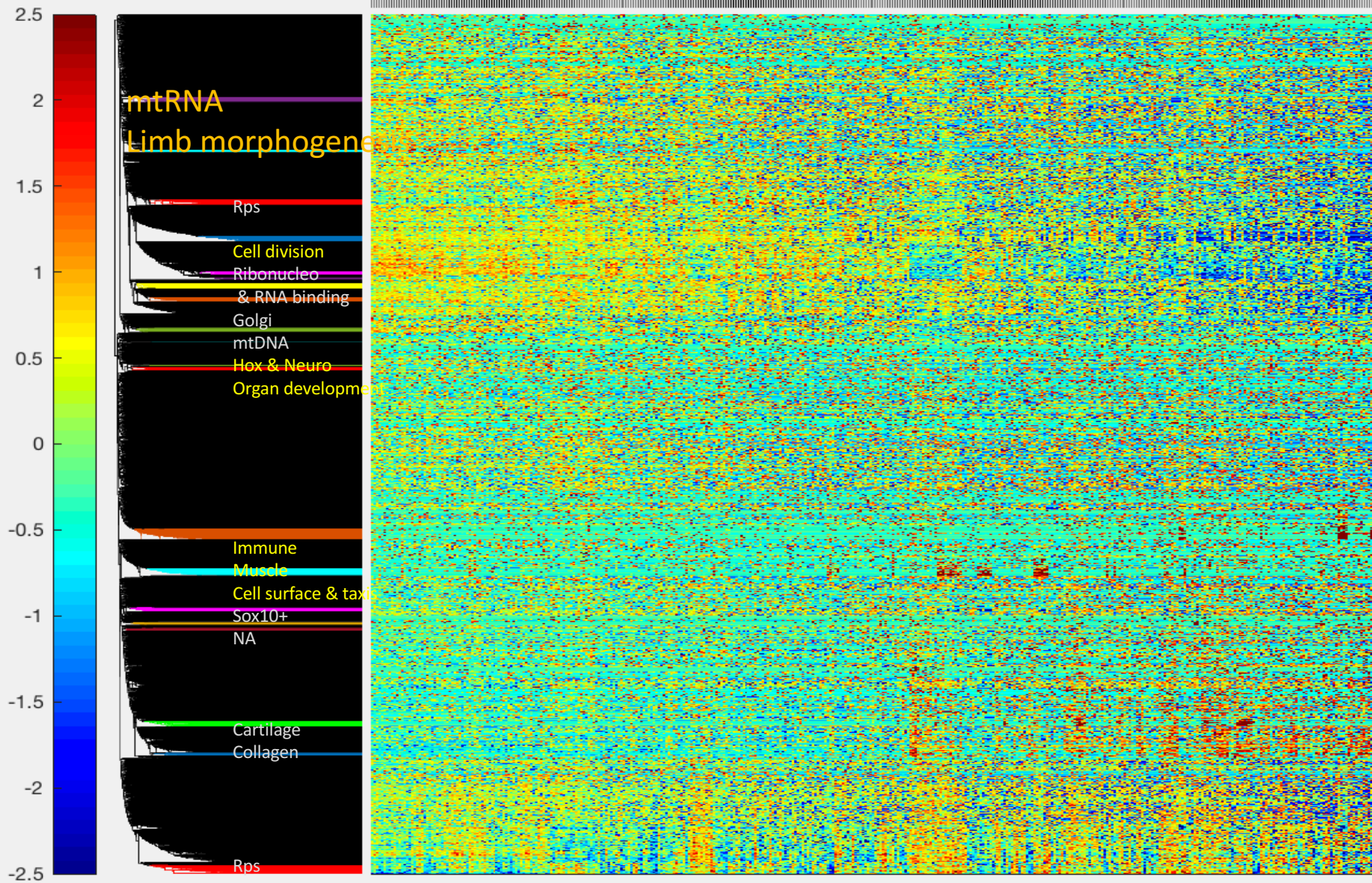
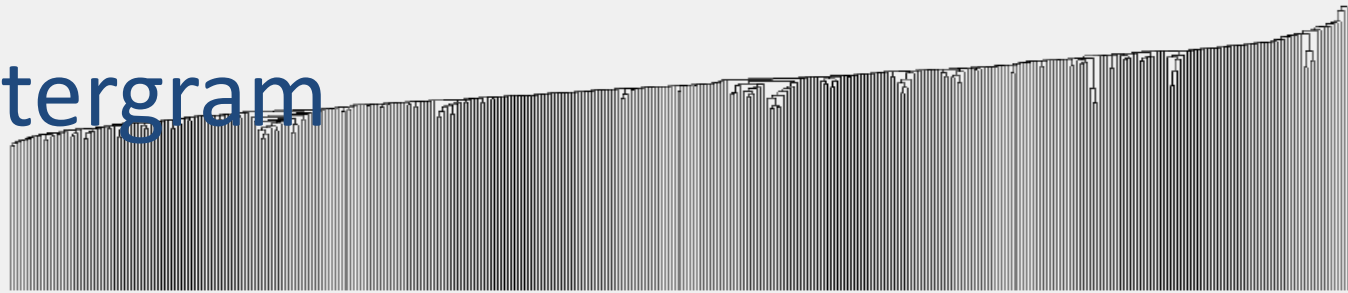
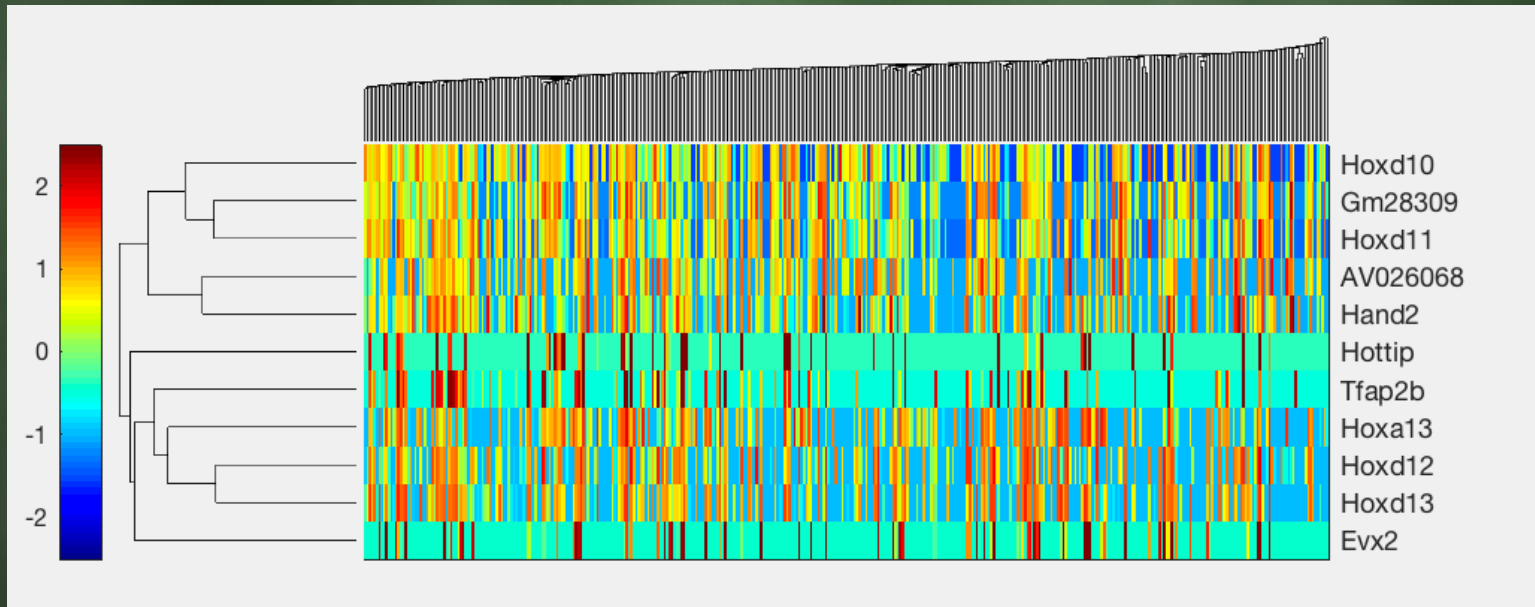


# Global Clustergram



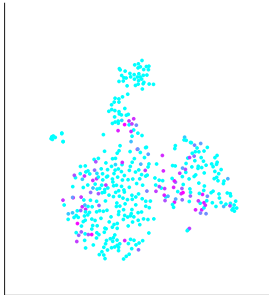
# 5' Hox



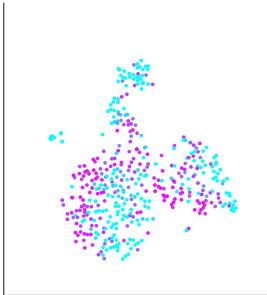
'Evx2' 'Hoxd13' 'Hoxd12' 'Hoxa13' 'Tfap2b' 'Hottip'  
'Hand2' 'AV026068' 'Hoxd11' 'Gm28309' 'Hoxd10'



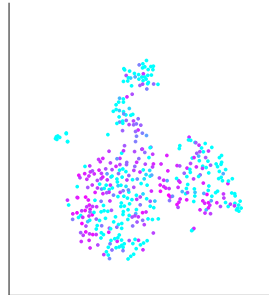
**Evx2**



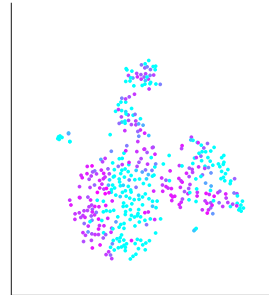
**Hoxd13**



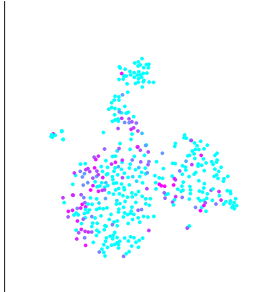
**Hoxd12**



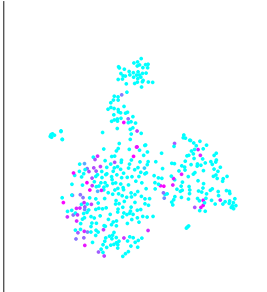
**Hoxa13**



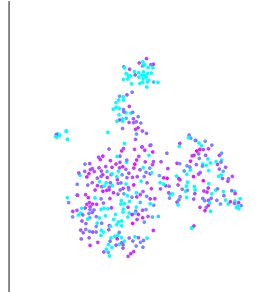
**Tfap2b**



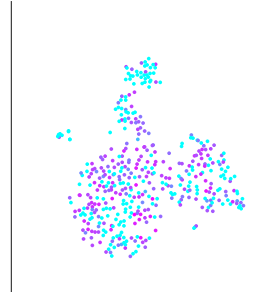
**Hottip**



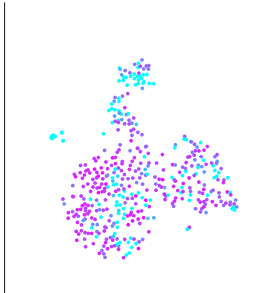
**Hand2**



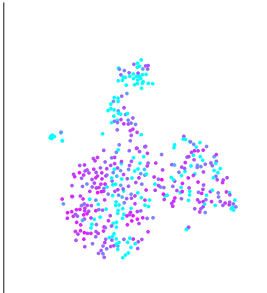
**AV026068**



**Hoxd11**



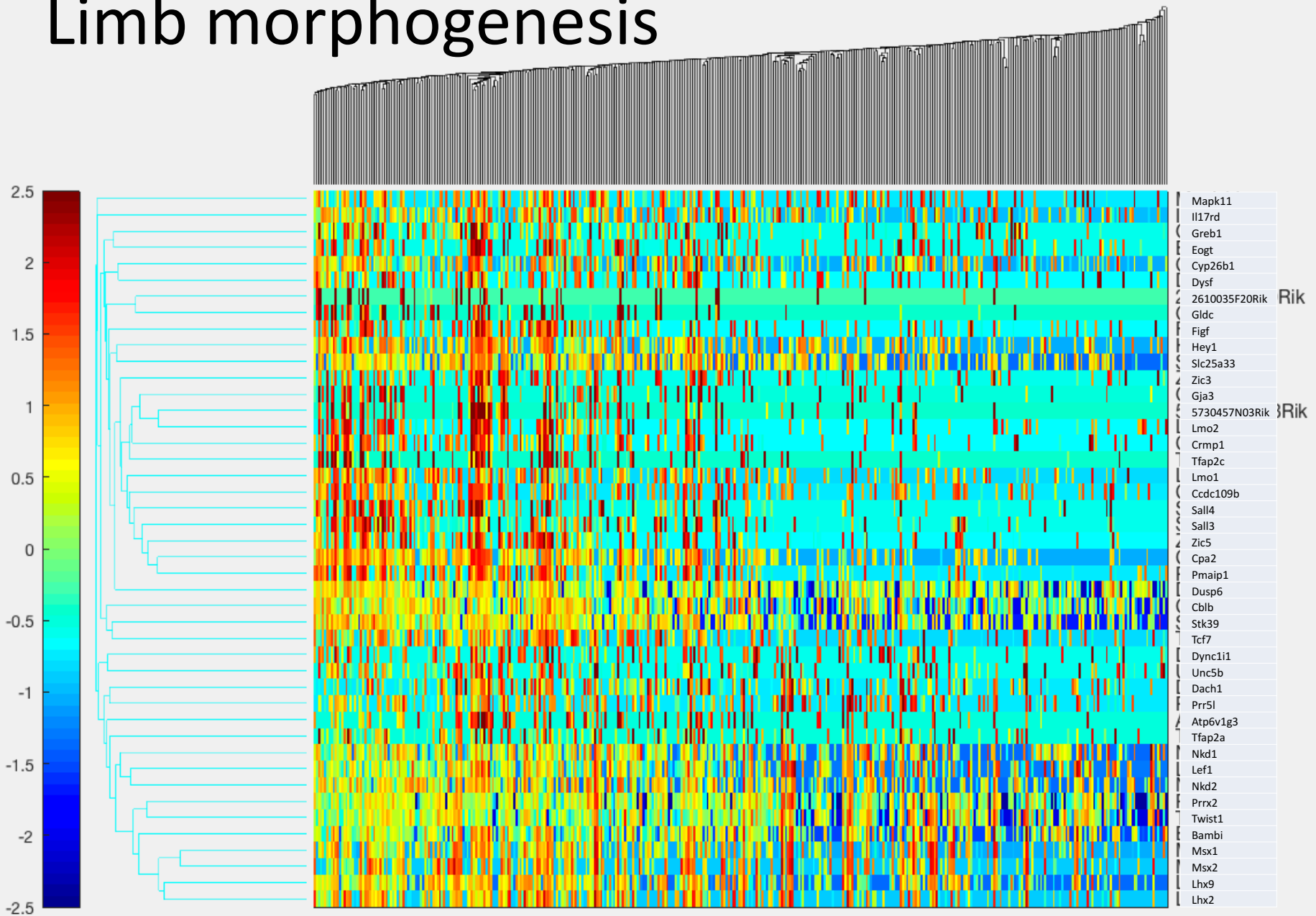
**Gm28309**



**Hoxd10**



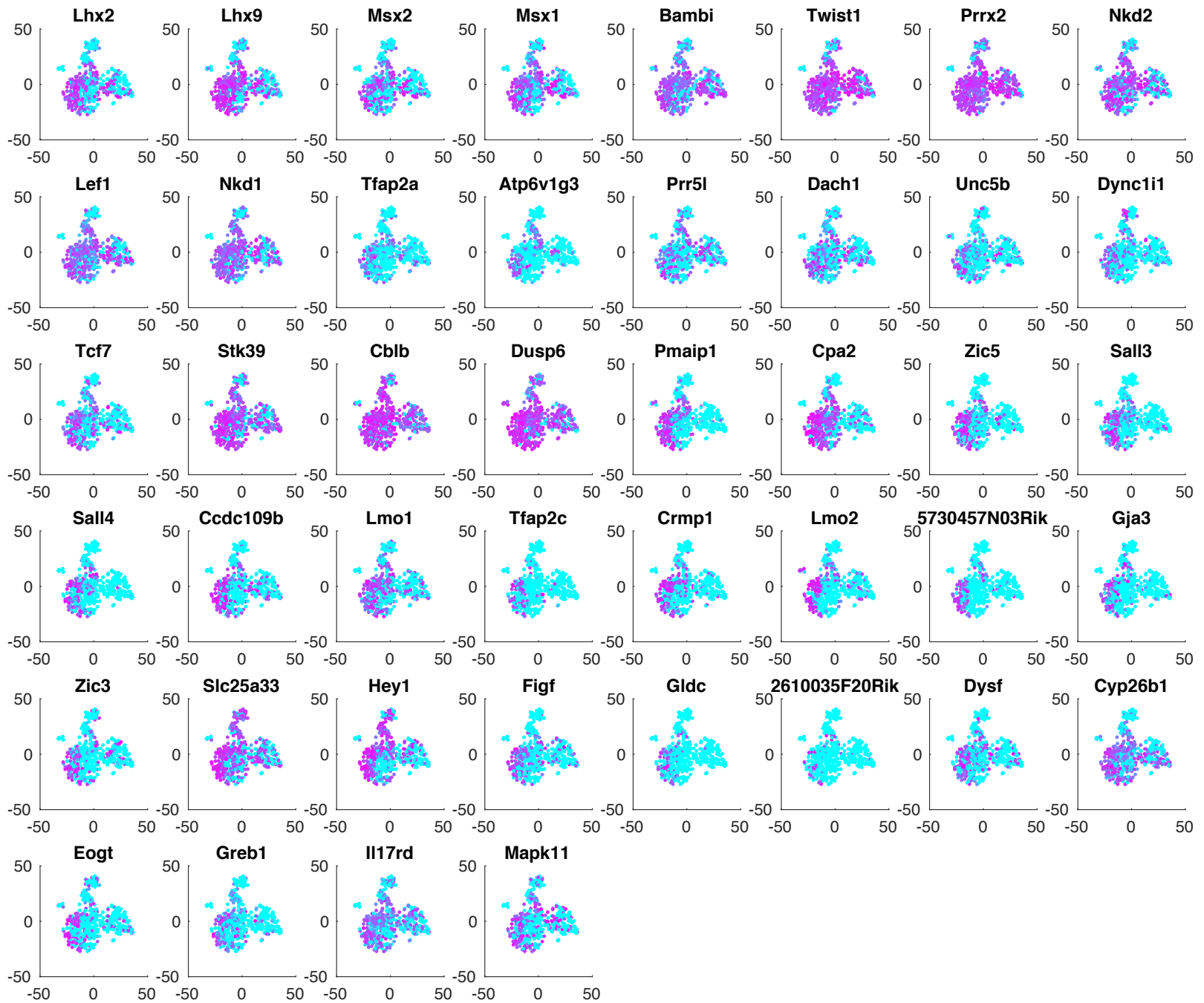
# Limb morphogenesis





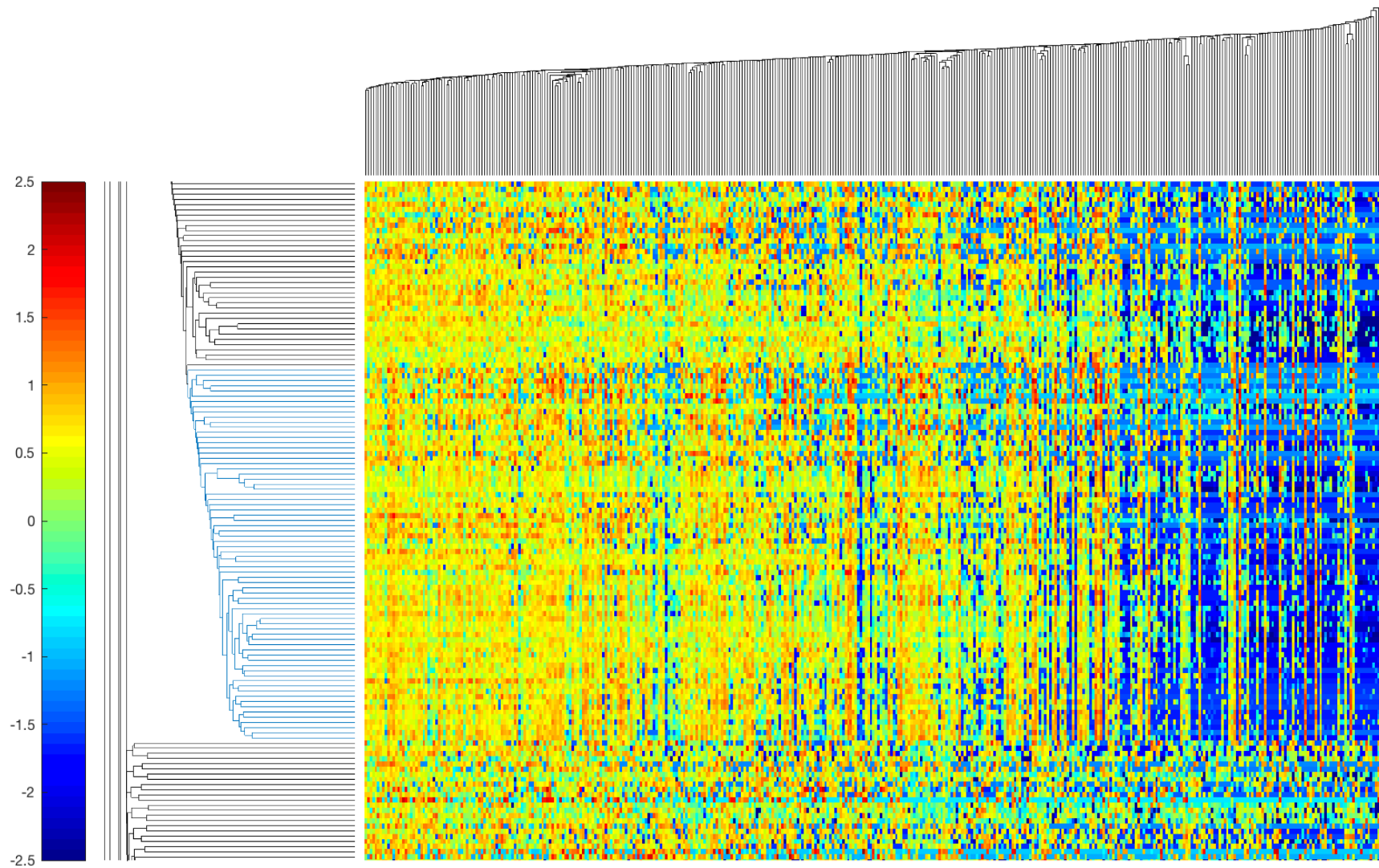
# Limb morphogenesis

- Lhx2 Lhx9 Msx2 Msx1 Bambi Twist1  
Prrx2 Nkd2 Lef1 Nkd1 Tfap2a  
Atp6v1g3 Prr5l Dach1 Unc5b Dync1i1  
Tcf7 Stk39 Cblb Dusp6 Pmaip1 Cpa2  
Zic5 Sall3 Sall4 Ccdc109b Lmo1  
Tfap2c Crmp1 Lmo2 5730457N03Rik  
Gja3 Zic3 Slc25a33 Hey1 Figf Glc  
2610035F20Rik Dysf Cyp26b1 Eogt  
Greb1 Il17rd Mapk11





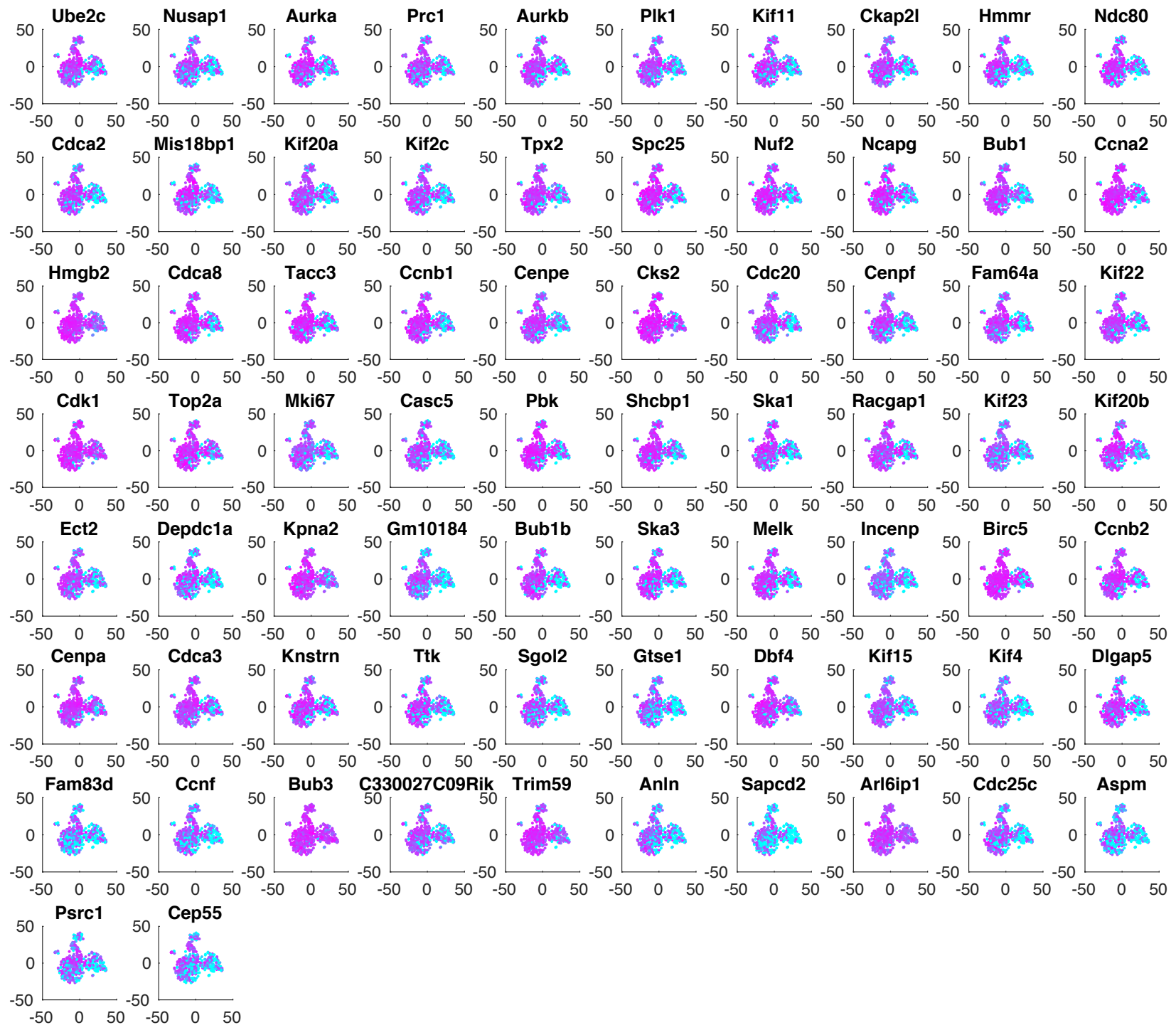
# Cell cycle cluster



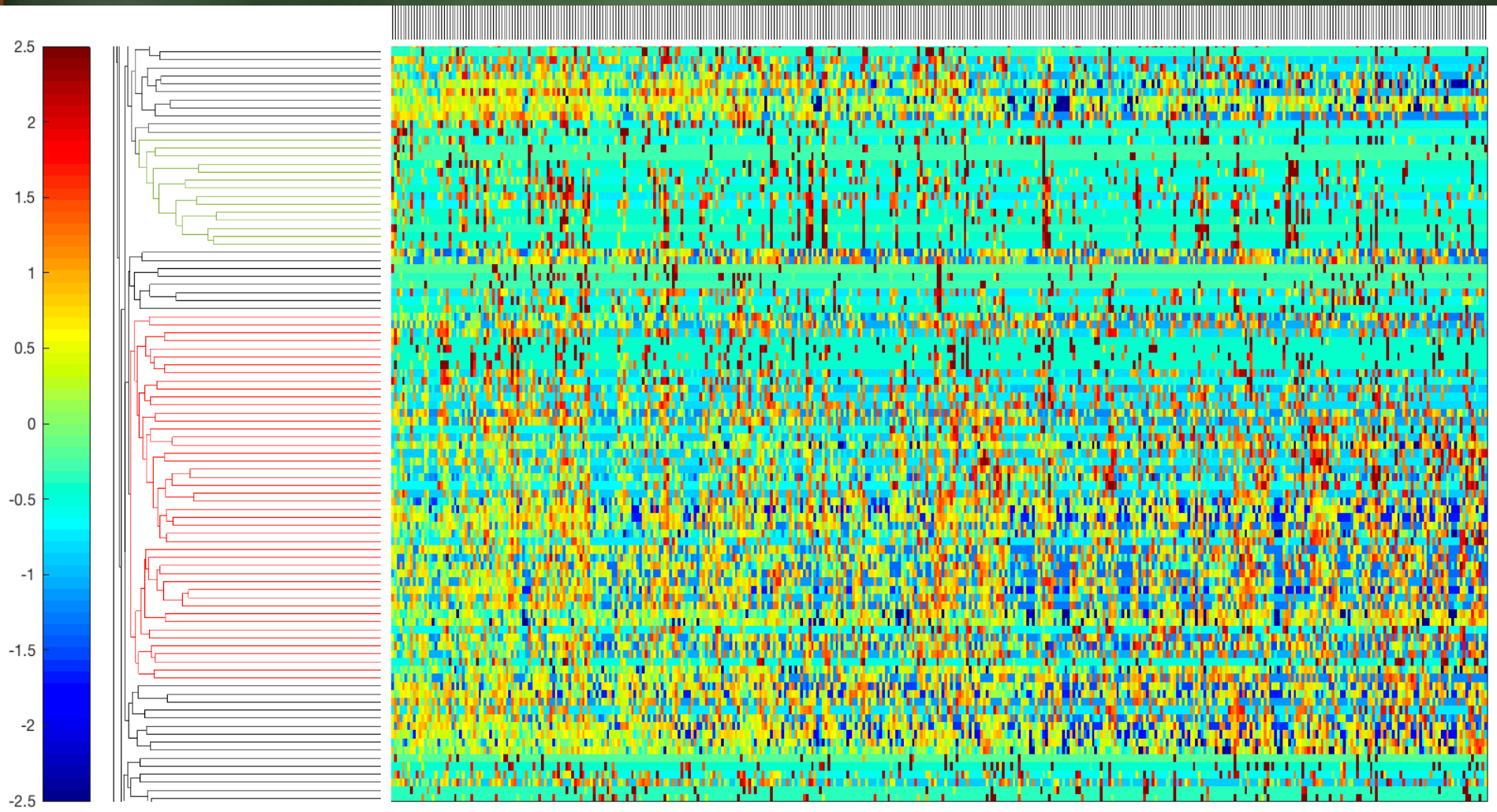
# Cell cycle genes

- 'Ube2c' 'Nusap1' 'Aurka' 'Prc1' 'Aurkb' 'Plk1'  
'Kif11' 'Ckap2l' 'Hmmer' 'Ndc80' 'Cdca2' 'Mis18bp1'  
'Kif20a' 'Kif2c' 'Tpx2' 'Spc25' 'Nuf2' 'Ncapg' 'Bub1'  
'Ccna2' 'Hmgb2' 'Cdca8' 'Tacc3' 'Ccnb1' 'Cenpe'  
'Cks2' 'Cdc20' 'Cenpf' 'Fam64a' 'Kif22' 'Cdk1'  
'Top2a' 'Mki67' 'Casc5' 'Pbk' 'Shcbp1' 'Ska1'  
'Racgap1' 'Kif23' 'Kif20b' 'Ect2' 'Depdc1a' 'Kpna2'  
'Gm10184' 'Bub1b' 'Ska3' 'Melk' 'Incenp' 'Birc5'  
'Ccnb2' 'Cenpa' 'Cdca3' 'Knstrn' 'Ttk' 'Sgol2'  
'Gtse1' 'Dbf4' 'Kif15' 'Kif4' 'Dlgap5' 'Fam83d'  
'Ccnf' 'Bub3' 'C330027C09Rik' 'Trim59' 'Anln'  
'Sapcd2' 'Arl6ip1' 'Cdc25c' 'Aspm' 'Psrc1' 'Cep55'



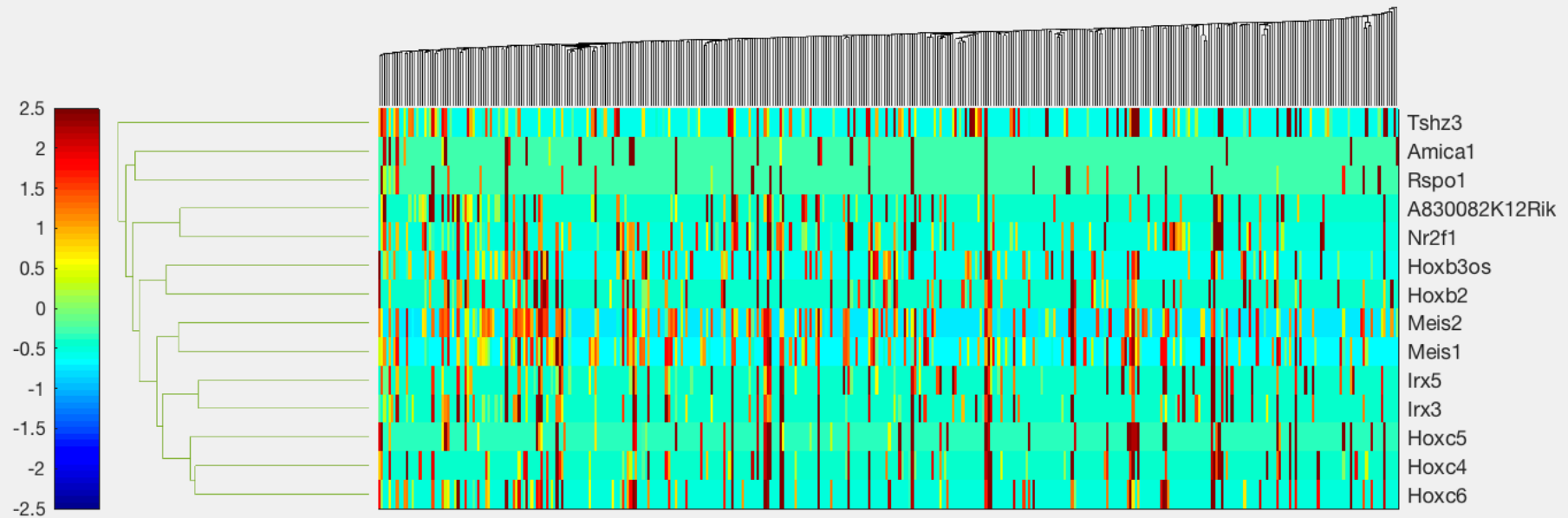


# Hox and Organ development cluster

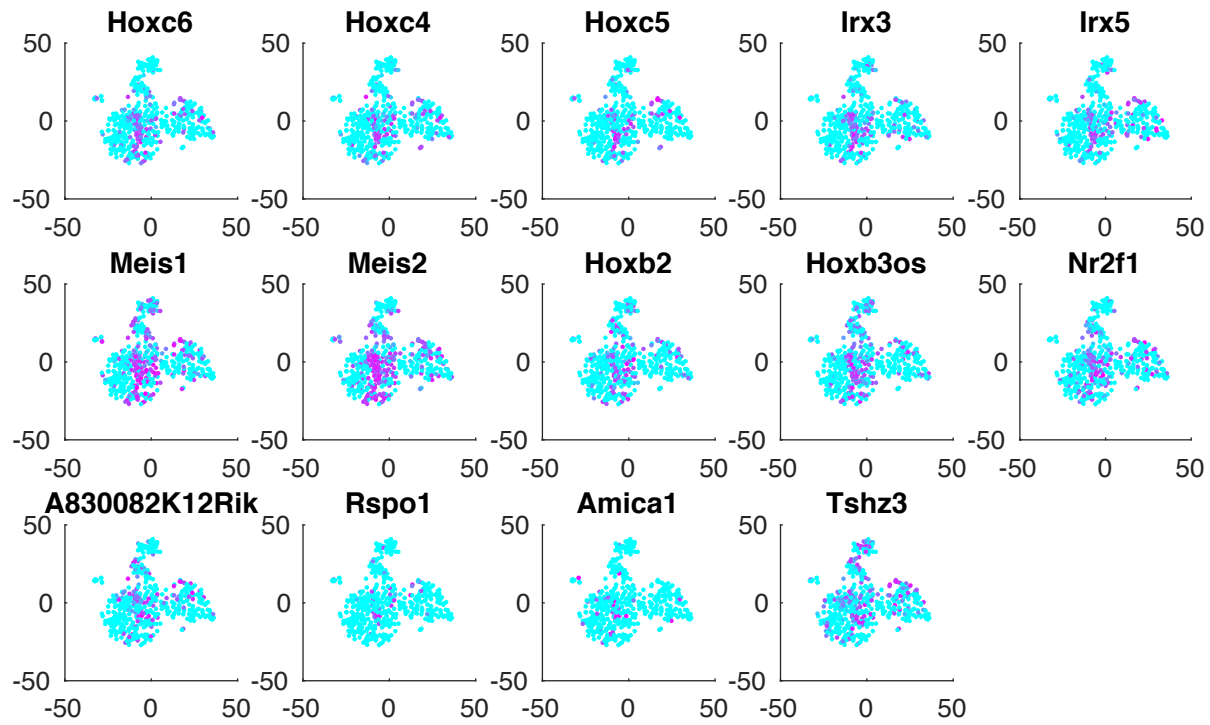




# Meis (Hox)



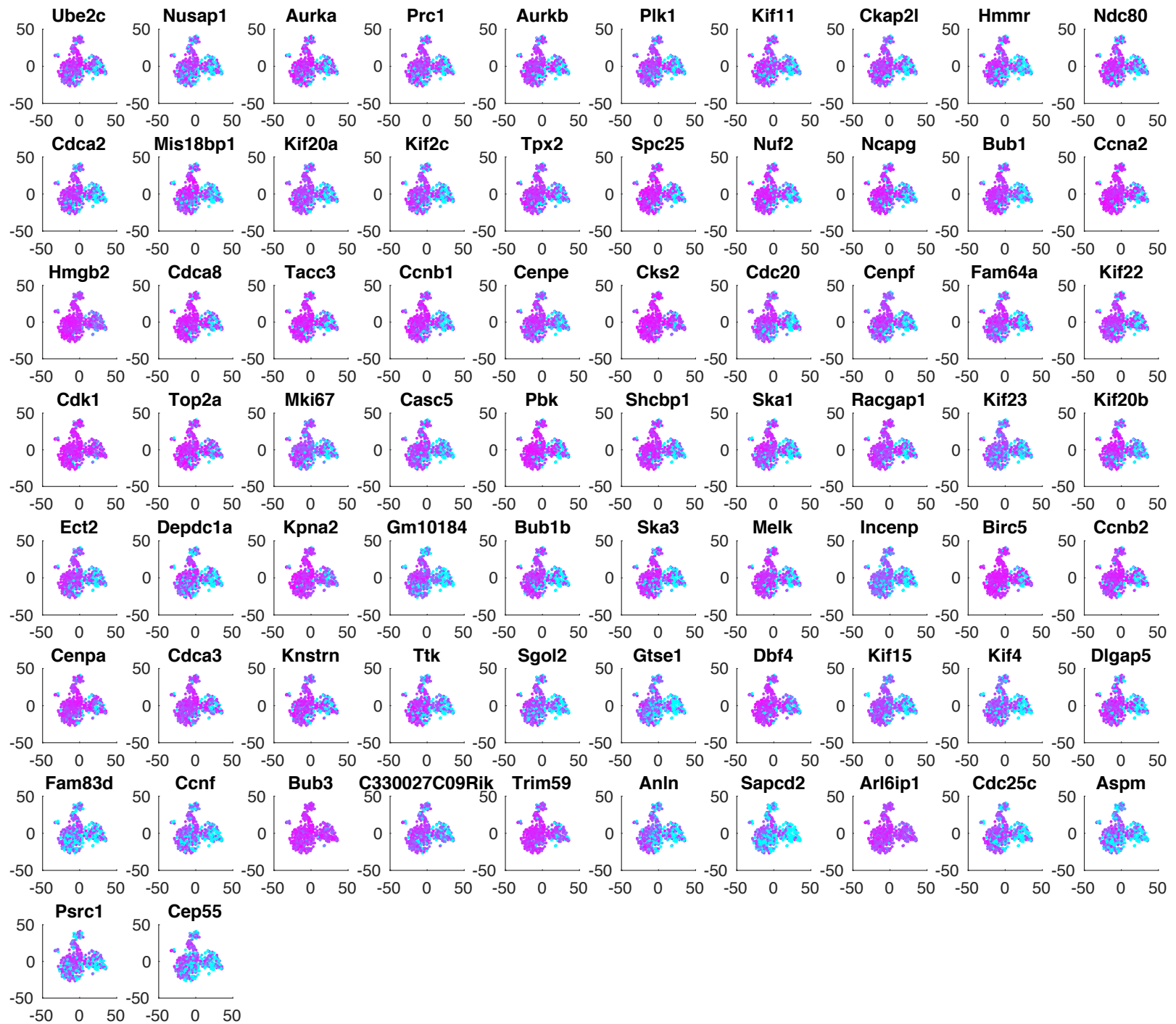
'Hoxc6' 'Hoxc4' 'Hoxc5' 'Irx3' 'Irx5' 'Meis1' 'Meis2'  
'Hoxb2' 'Hoxb3os' 'Nr2f1' 'A830082K12Rik' 'Rspo1'  
'Amica1' 'Tshz3'



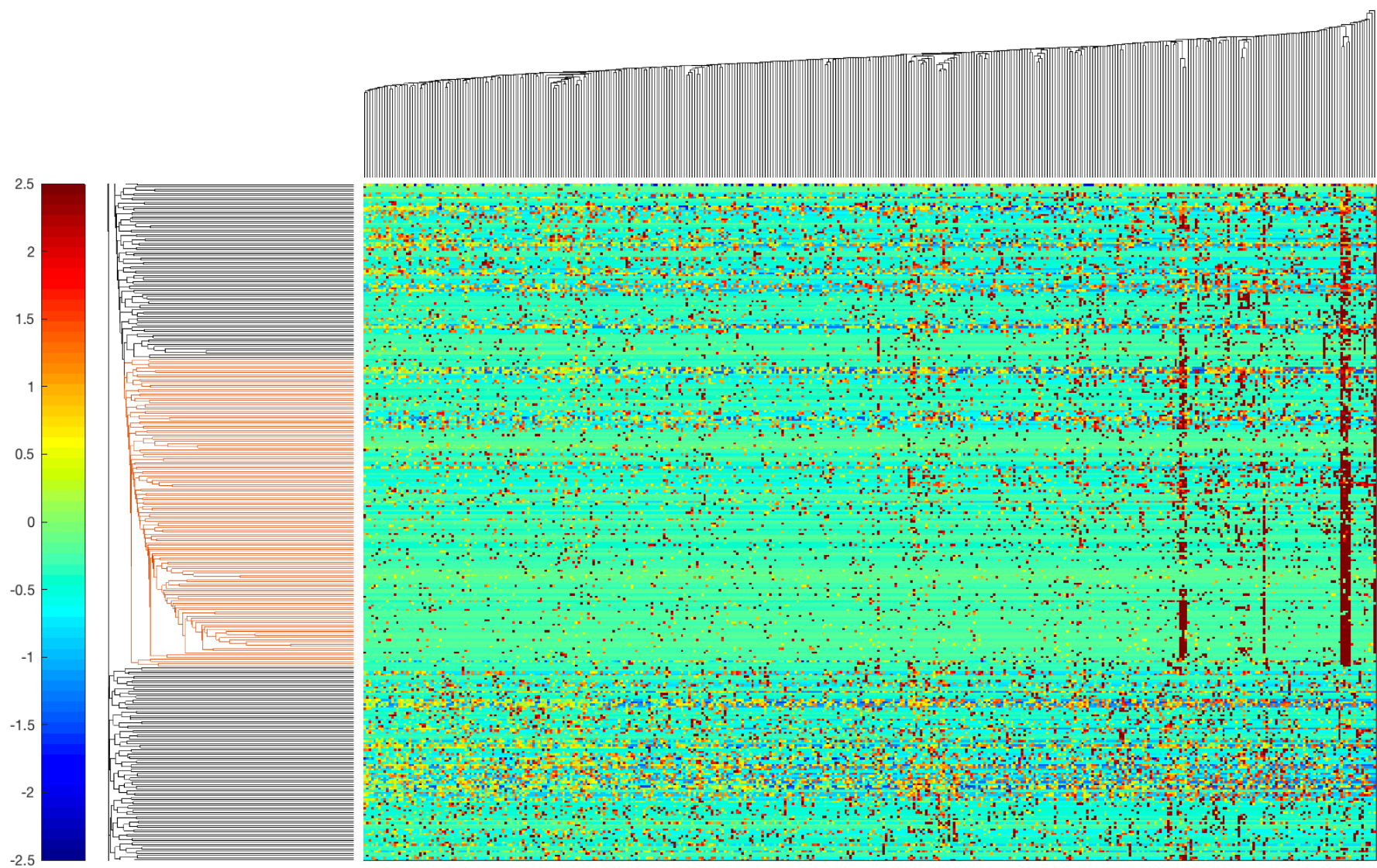
# Organ development genes

- 'Gstm7' 'Rbm4b' 'Gsc' 'Ldb2' 'Pbx1'  
'Fli1' 'Gpr4' 'Kif3a' '6330403K07Rik'  
'Shox2' 'Mab21l1' 'Mab21l2' 'Tbx18'  
'Tbx15' 'Amot' 'Dnm3os' 'Pik3r3'  
'Wnt11' 'Ptn' 'Ednra' 'Tnfaip6' 'Cdo1'  
'Zfhx4' '2700069I18Rik' 'Dkk2' 'Zfhx3'  
'Nbl1' 'Igf1' 'Kctd12' 'Rnd3' 'Osr1'  
'Sostdc1' 'Enho' 'Mir99ahg' 'Stra6'  
'Fam174b' 'Dnm3' 'Slitrk6' 'Osr2'  
'6030408B16Rik' 'Artn' 'Tmem163' 'Hgf'  
'Meox2' 'Ntf3' 'Mex3b'





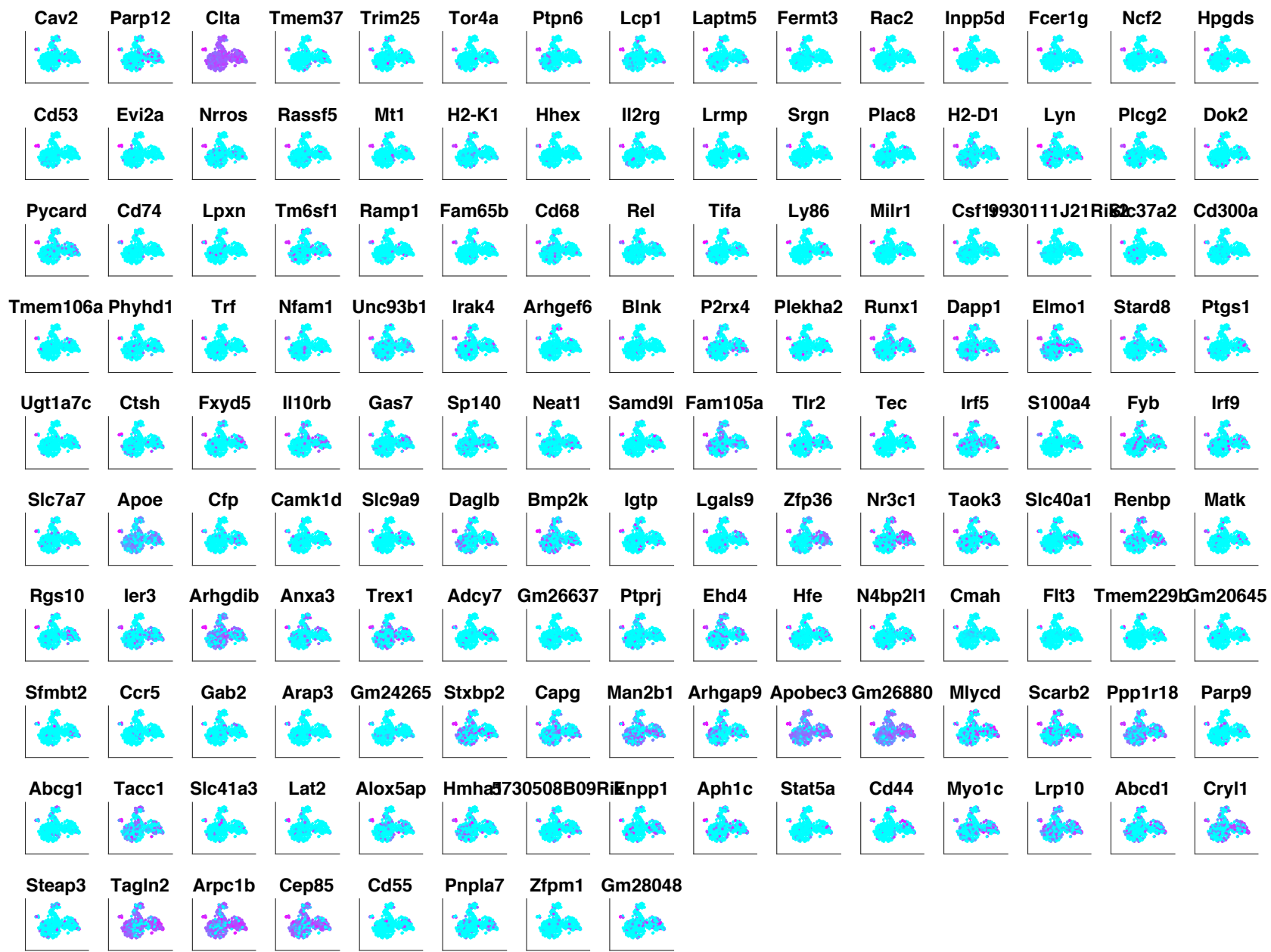
# immune



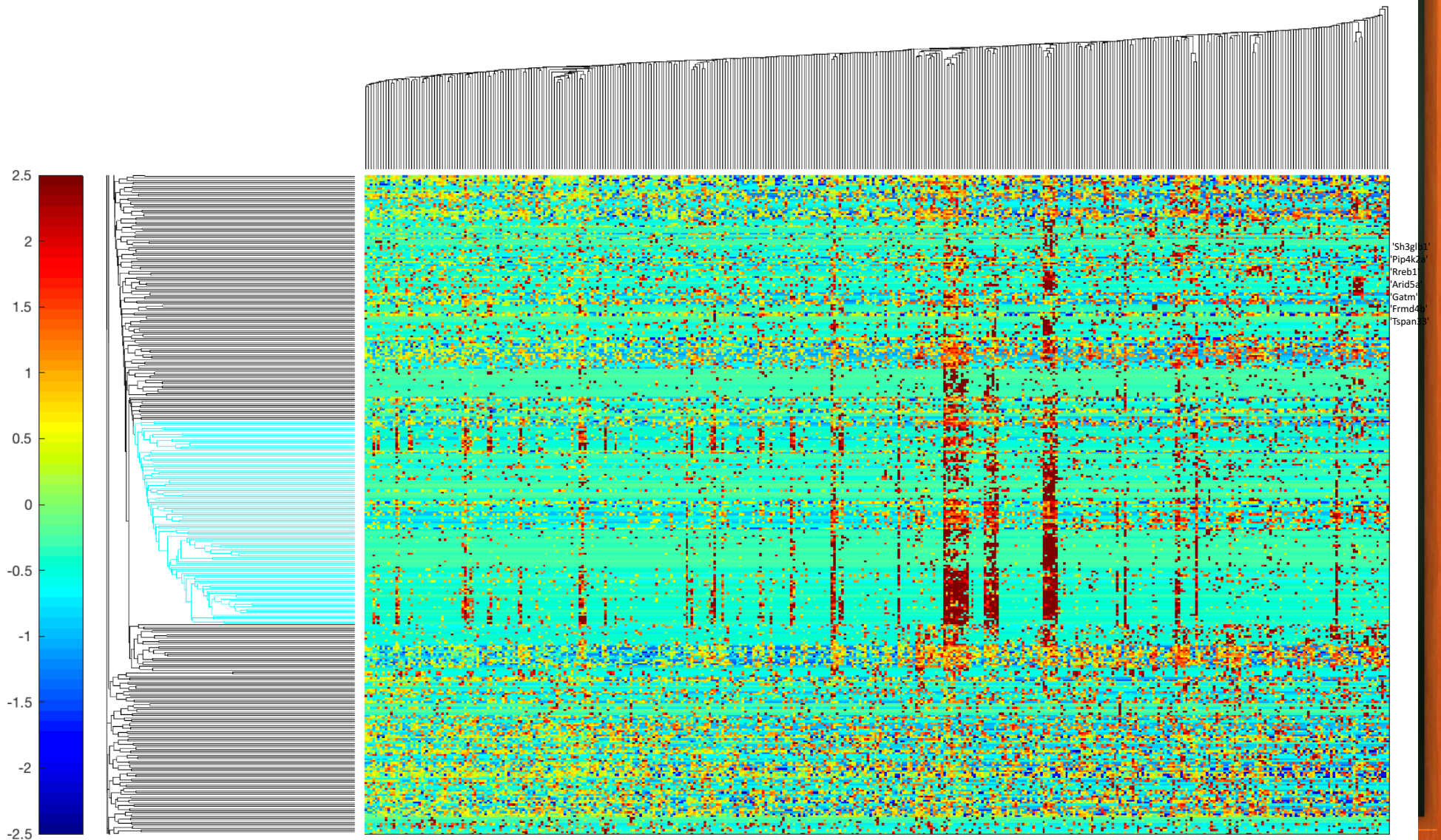
# Immune genes

- 'Cav2' 'Parp12' 'Clta' 'Tmem37' 'Trim25' 'Tor4a' 'Ptpn6' 'Lcp1'  
'Laptm5' 'Fermt3' 'Rac2' 'Inpp5d' 'Fcer1g' 'Ncf2' 'Hpgds' 'Cd53'  
'Evi2a' 'Nrros' 'Rassf5' 'Mt1' 'H2-K1' 'Hhex' 'Il2rg' 'Lrmp' 'Srgn'  
'Plac8' 'H2-D1' 'Lyn' 'Plcg2' 'Dok2' 'Pycard' 'Cd74' 'Lpxn'  
'Tm6sf1' 'Ramp1' 'Fam65b' 'Cd68' 'Rel' 'Tifa' 'Ly86' 'Milr1'  
'Csf1r' '9930111J21Rik2' 'Slc37a2' 'Cd300a' 'Tmem106a' 'Phyhd1'  
'Trf' 'Nfam1' 'Unc93b1' 'Irak4' 'Arhgef6' 'Blnk' 'P2rx4' 'Plekha2'  
'Runx1' 'Dapp1' 'Elmo1' 'Stard8' 'Ptgs1' 'Ugt1a7c' 'Ctsh' 'Fxyd5'  
'Il10rb' 'Gas7' 'Sp140' 'Neat1' 'Samd9l' 'Fam105a' 'Tlr2' 'Tec'  
'Irf5' 'S100a4' 'Fyb' 'Irf9' 'Slc7a7' 'ApoE' 'Cfp' 'Camk1d' 'Slc9a9'  
'Daglb' 'Bmp2k' 'Igtf' 'Lgals9' 'Zfp36' 'Nr3c1' 'Taok3' 'Slc40a1'  
'Renbp' 'Matk' 'Rgs10' 'Ier3' 'Arhgdib' 'Anxa3' 'Trex1' 'Adcy7'  
'Gm26637' 'Ptprij' 'Ehd4' 'Hfe' 'N4bp2l1' 'Cmah' 'Flt3'  
'Tmem229b' 'Gm20645' 'Sfmbt2' 'Ccr5' 'Gab2' 'Arap3' 'Gm24265'  
'Stxbp2' 'Capg' 'Man2b1' 'Arhgap9' 'Apobec3' 'Gm26880' 'Mlycd'  
'Scarb2' 'Ppp1r18' 'Parp9' 'Abcg1' 'Tacc1' 'Slc41a3' 'Lat2'  
'Alox5ap' 'Hmha1' '5730508B09Rik' 'Enpp1' 'Aph1c' 'Stat5a'  
'Cd44' 'Myo1c' 'Lrp10' 'Abcd1' 'Cryl1' 'Steap3' 'Tagln2' 'Arpc1b'  
'Cep85' 'Cd55' 'Pnpla7' 'Zfpm1' 'Gm28048'

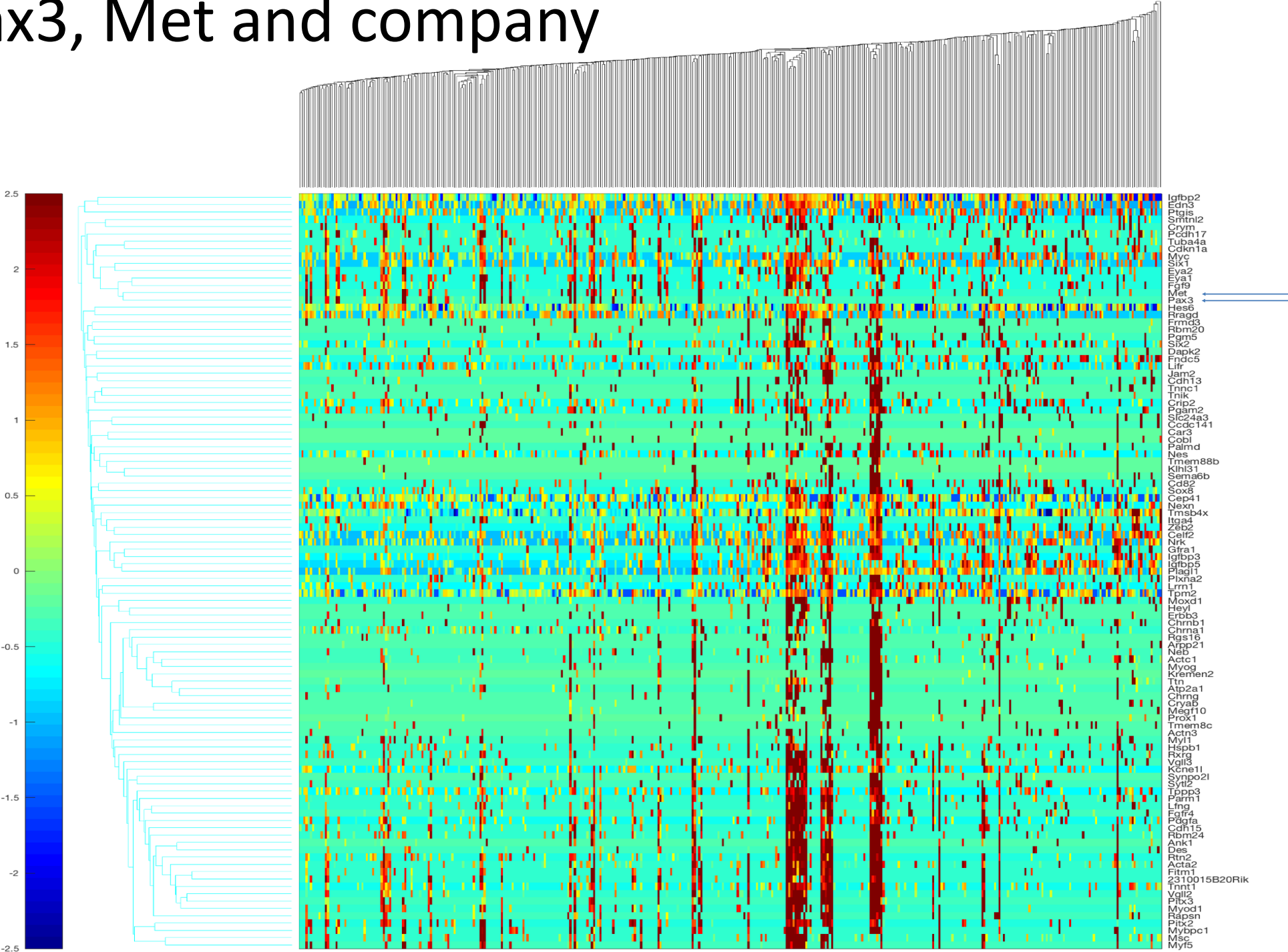




# muscle



# Pax3, Met and company



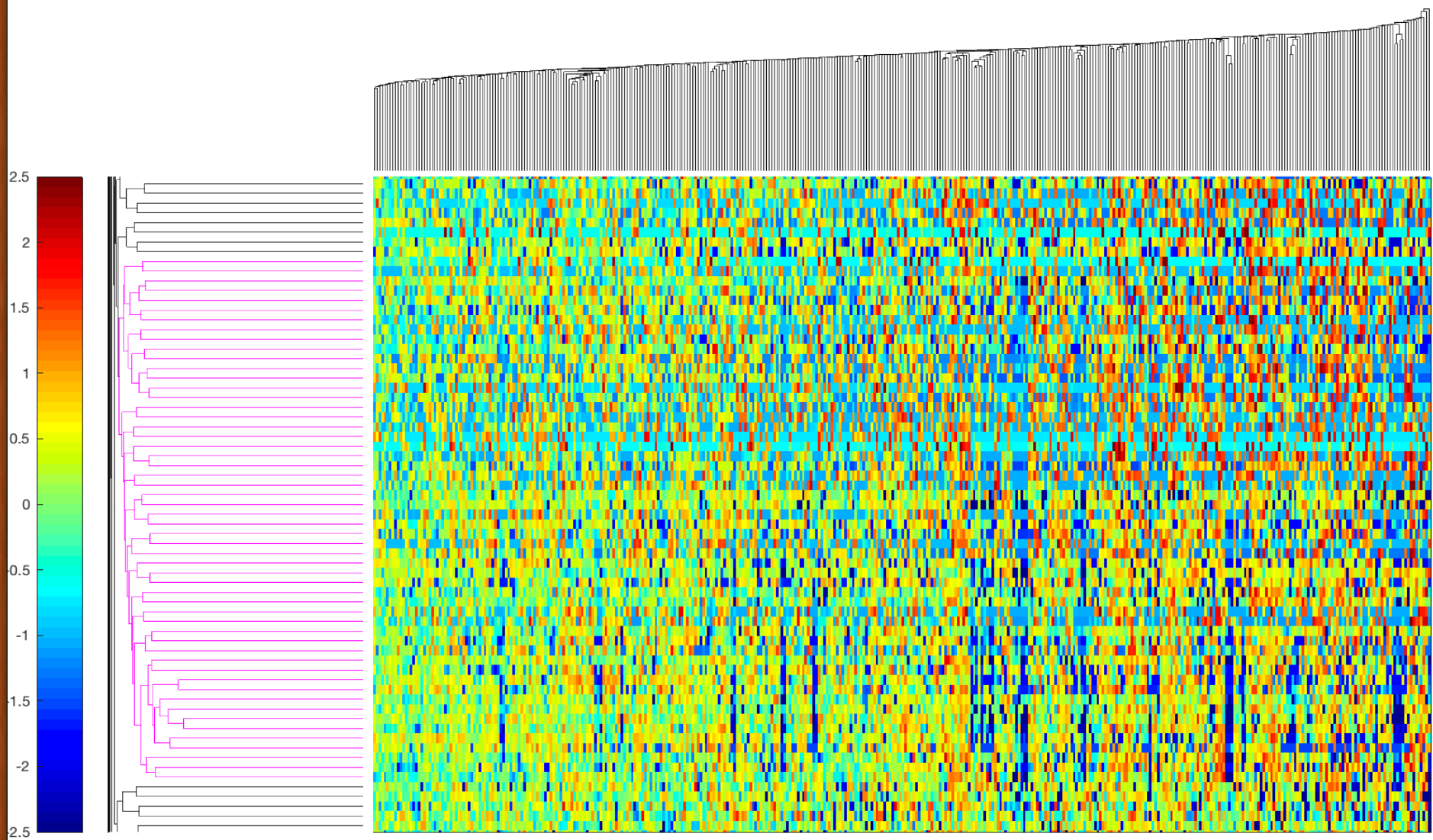


# Muscle genes

- 'Myf5' 'Msc' 'Mybpc1' 'Pitx2' 'Rapsn' 'Myod1' 'Pitx3'  
'Vgll2' 'Tnnt1' '2310015B20Rik' 'Fitm1' 'Acta2' 'Rtn2'  
'Des' 'Ank1' 'Rbm24' 'Cdh15' 'Pdgfa' 'Fgfr4' 'Lfng'  
'Parm1' 'Tppp3' 'Sytl2' 'Synpo2l' 'Kcne1' 'Vgll3' 'Rxrg'  
'Hspb1' 'Myl1' 'Actn3' 'Tmem8c' 'Prox1' 'Megf10' 'Cryab'  
'Chrng' 'Atp2a1' 'Ttn' 'Kremen2' 'Myog' 'Actc1' 'Neb'  
'Arpp21' 'Rgs16' 'Chrna1' 'Chrn1' 'Erb3' 'Heyl' 'Moxd1'  
'Tpm2' 'Lrrn1' 'Plxna2' 'Plagl1' 'Igfbp5' 'Igfbp3' 'Gfra1'  
'Nrk' 'Celf2' 'Zeb2' 'Itga4' 'Tmsb4x' 'Nexn' 'Cep41'  
'Sox8' 'Cd82' 'Sema6b' 'Klhl31' 'Tmem88b' 'Nes' 'Palmd'  
'Cobl' 'Car3' 'Ccdc141' 'Slc24a3' 'Pgam2' 'Crip2' 'Tnik'  
'Tnnc1' 'Cdh13' 'Jam2' 'Lifr' 'Fndc5' 'Dapk2' 'Six2'  
'Pgm5' 'Rbm20' 'Frmd3' 'Rragd' 'Hes6' 'Pax3' 'Met'  
'Fgf9' 'Eya1' 'Eya2' 'Six1' 'Myc' 'Cdkn1a' 'Tuba4a'  
'Pcdh17' 'Crym' 'Smtnl2' 'Ptgis' 'Edn3' 'Igfbp2'



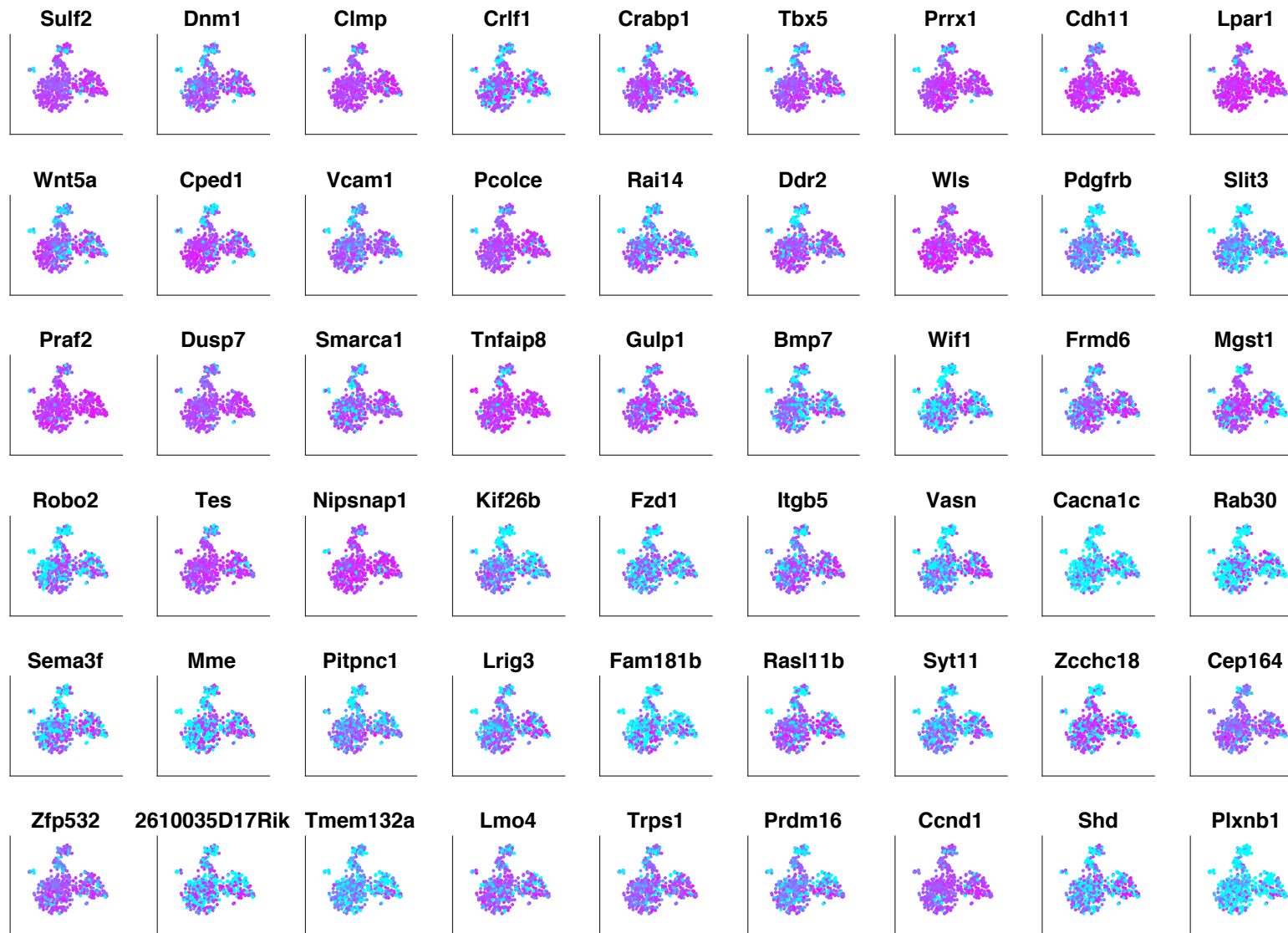
# Cell surface & taxis



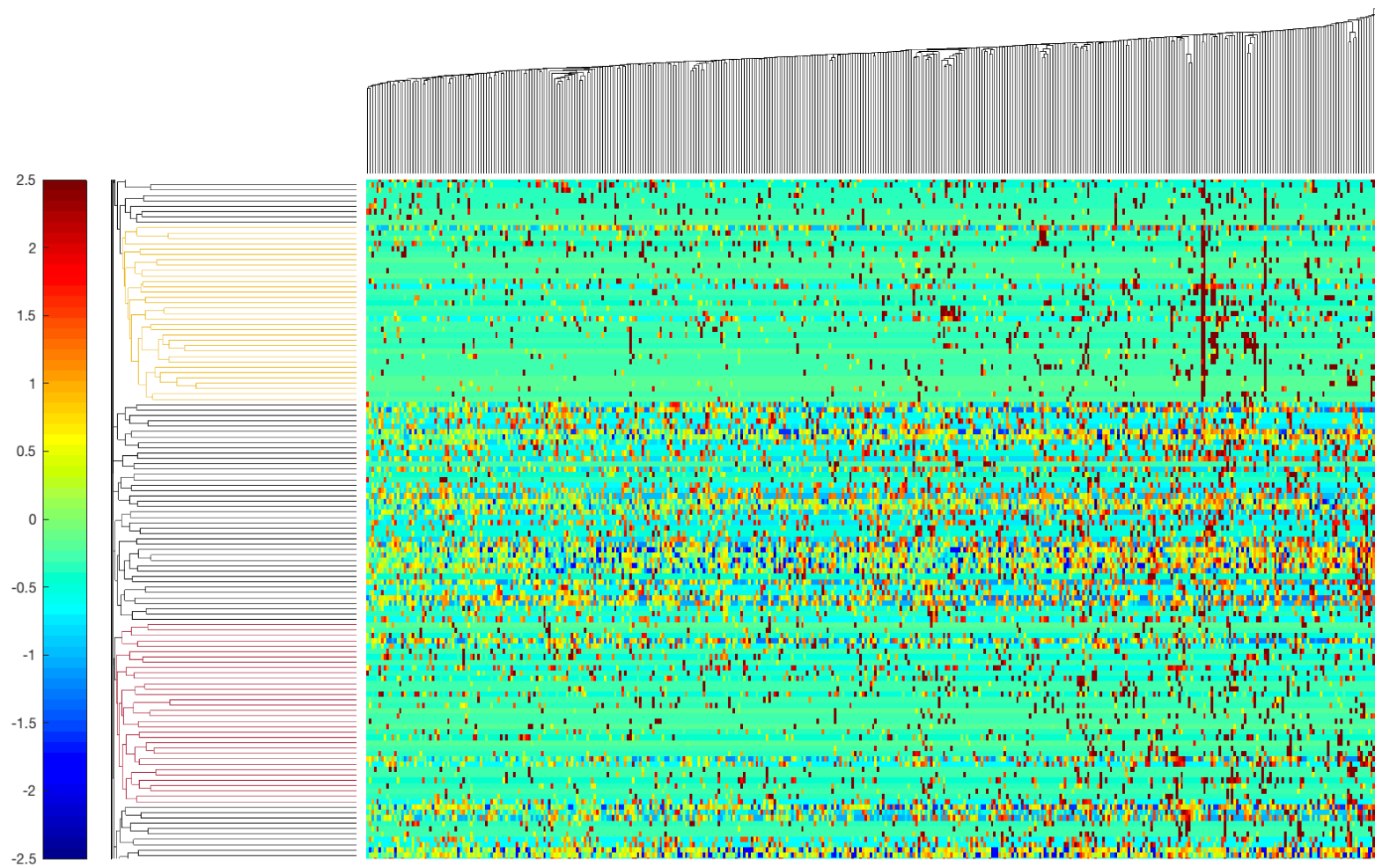
## Cell surface & taxis genes

- Sulf2 Dnm1 Clmp Crlf1 Crabp1 Tbx5  
Prrx1 Cdh11 Lpar1 Wnt5a Cped1  
Vcam1 Pcolce Rai14 Ddr2 Wls  
Pdgfrb Slit3 Praf2 Dusp7 Smarca1  
Tnfaip8 Gulp1 Bmp7 Wif1 Frmd6  
Mgst1 Robo2 Tes Nipsnap1 Kif26b  
Fzd1 Itgb5 Vasn Cacna1c Rab30  
Sema3f Mme Pitpnc1 Lrig3 Fam181b  
Rasl11b Syt11 Zcchc18 Cep164 Zfp532  
2610035D17Rik Tmem132a Lmo4 Trps1  
Prdm16 Ccnd1 Shd Plxnb1





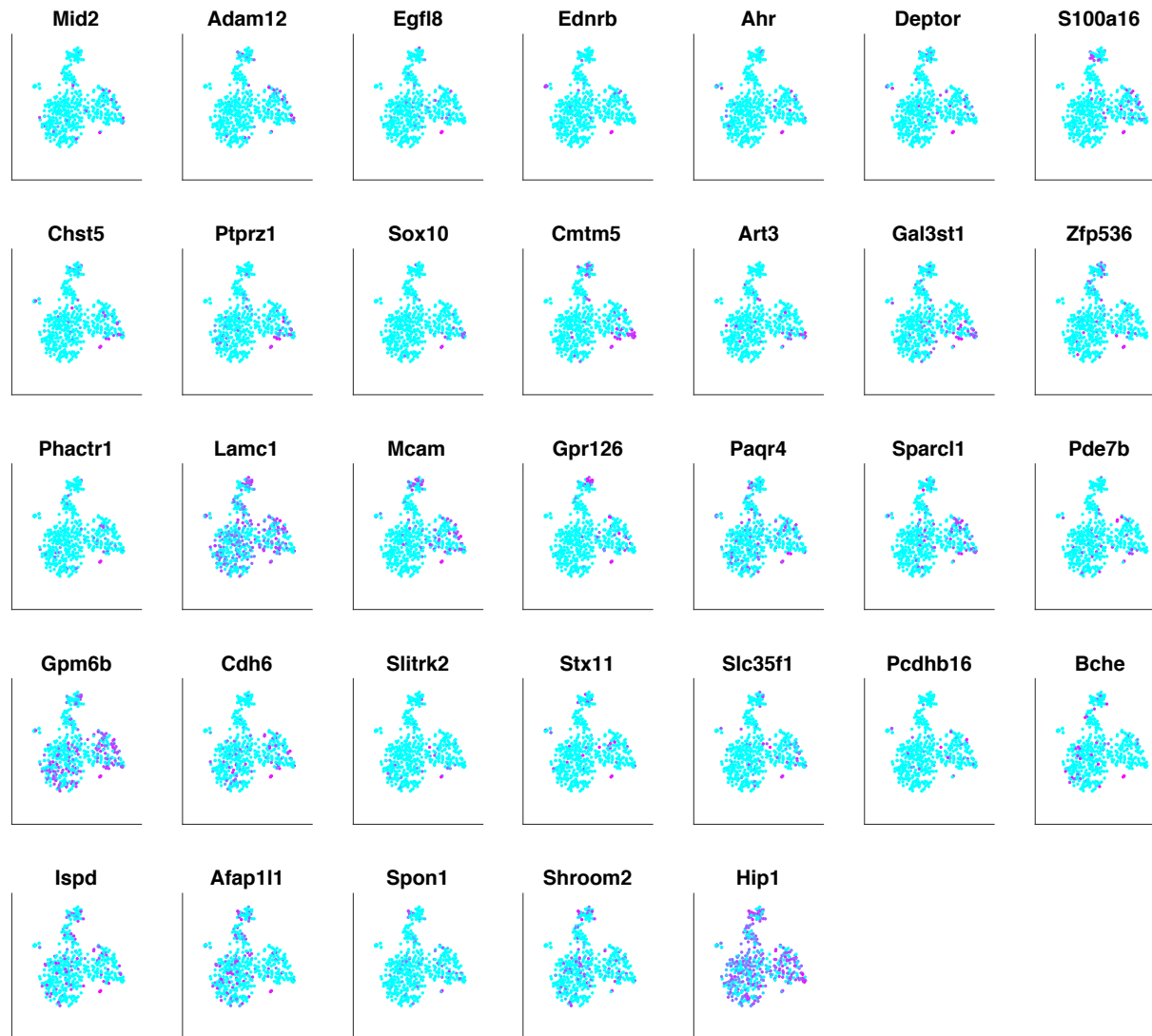
# NA



# The two groups of genes

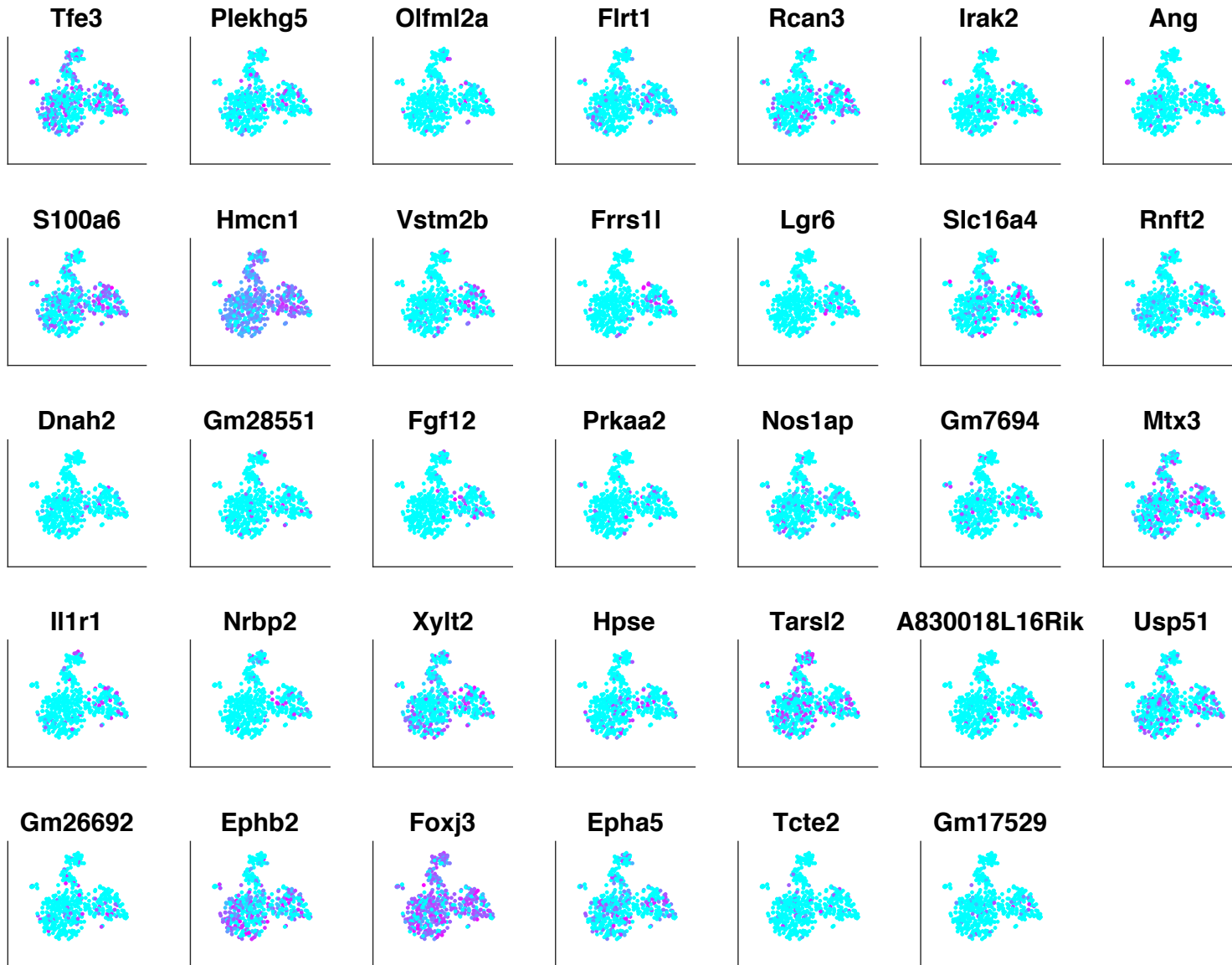
- 'Mid2' 'Adam12' 'Egfl8' 'Ednrb' 'Ahr' 'Deptor'  
'S100a16' 'Chst5' 'Ptprz1' 'Sox10' 'Cmtm5' 'Art3'  
'Gal3st1' 'Zfp536' 'Phactr1' 'Lamc1' 'Mcam'  
'Gpr126' 'Paqr4' 'Sparcl1' 'Pde7b' 'Gpm6b' 'Cdh6'  
'Slitrk2' 'Stx11' 'Slc35f1' 'Pcdhb16' 'Bche' 'Ispd'  
'Afap111' 'Spon1' 'Shroom2' 'Hip1'
- 'Tfe3' 'Plekhg5' 'Olfml2a' 'Flrt1' 'Rcan3' 'Irak2'  
'Ang' 'S100a6' 'Hmcn1' 'Vstm2b' 'Frrs1' 'Lgr6'  
'Slc16a4' 'Rnft2' 'Dnah2' 'Gm28551' 'Fgf12'  
'Prkaa2' 'Nos1ap' 'Gm7694' 'Mtx3' 'Il1r1' 'Nrbp2'  
'Xylt2' 'Hpse' 'Tarsl2' 'A830018L16Rik' 'Usp51'  
'Gm26692' 'Ephb2' 'Foxj3' 'Epha5' 'Tcte2'  
'Gm17529'

# Group 1

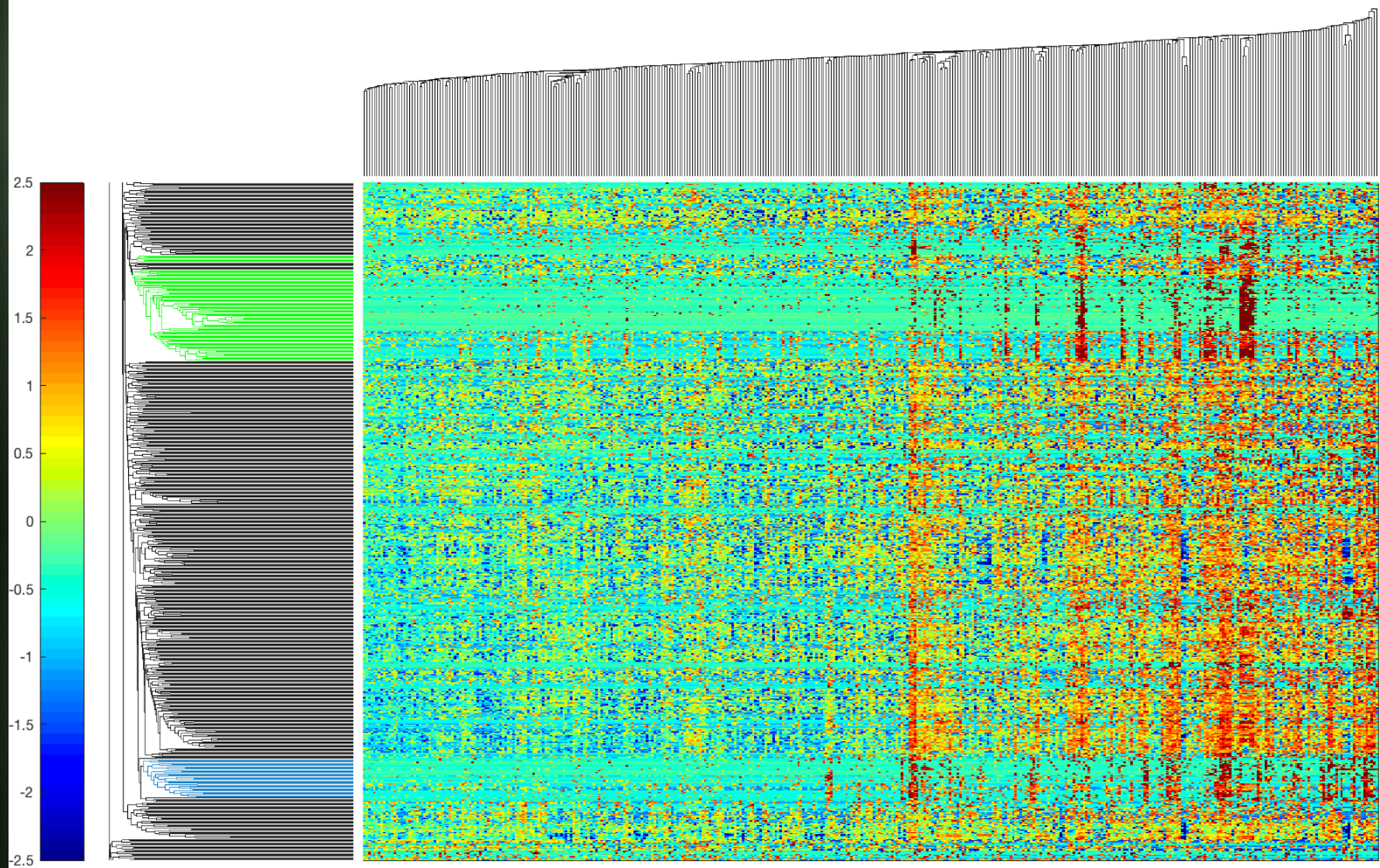




# Group 2



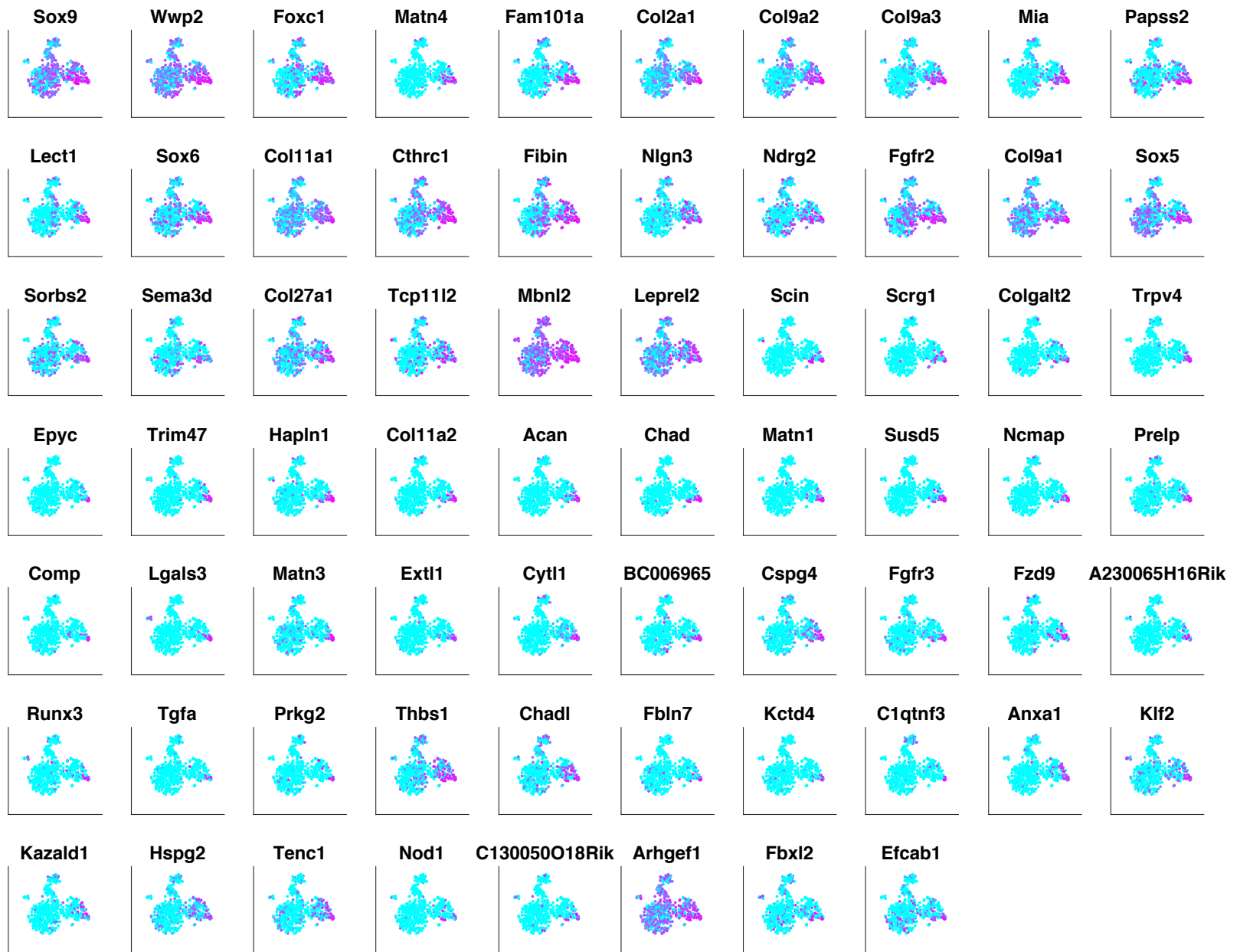
# Cartilage and collagen



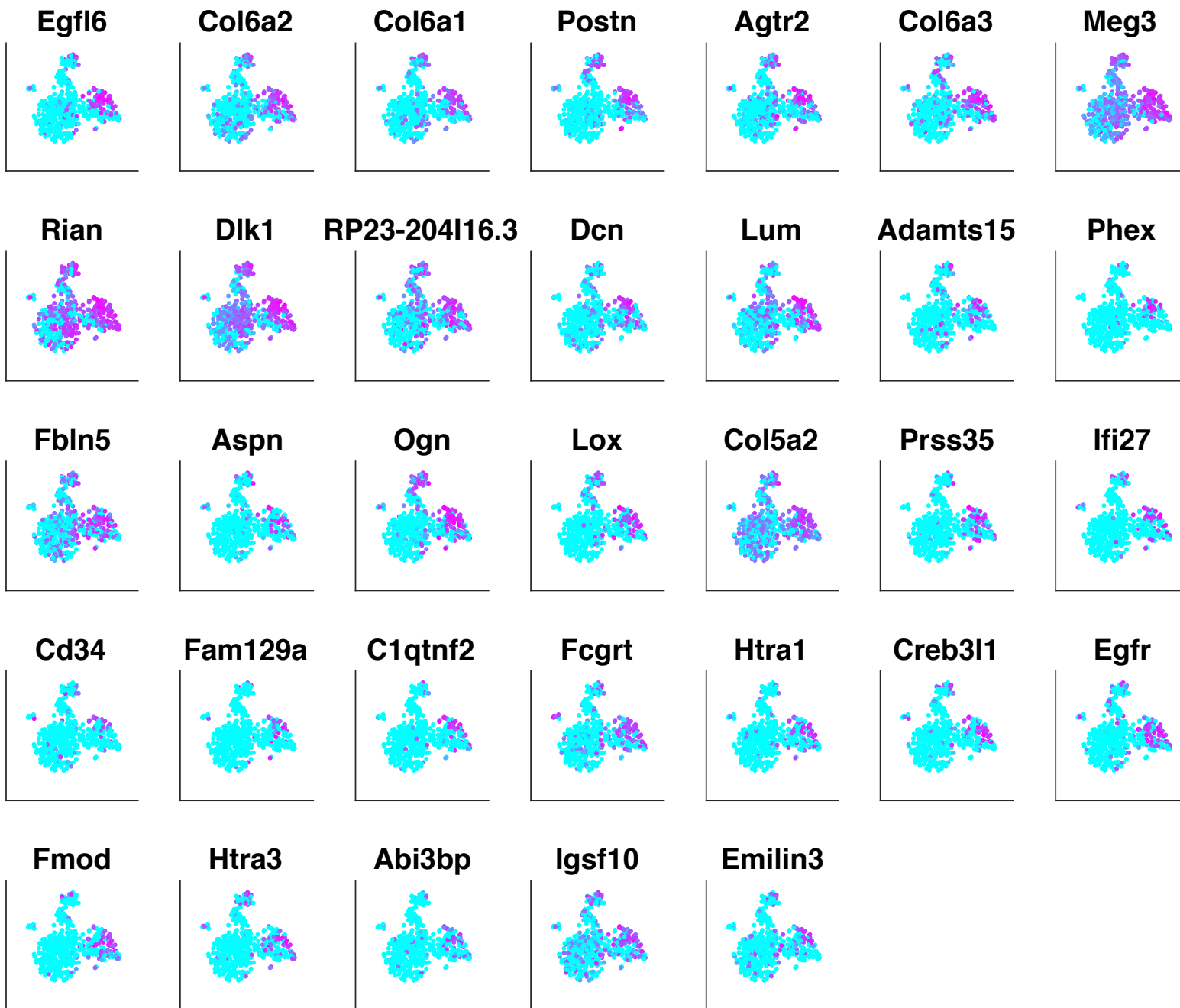
# Cartilage and collagen

- 'Sox9' 'Wwp2' 'Foxc1' 'Matn4' 'Fam101a' 'Col2a1'  
'Col9a2' 'Col9a3' 'Mia' 'Papss2' 'Lect1' 'Sox6' 'Col11a1'  
'Cthrc1' 'Fibin' 'Nlgn3' 'Ndr2' 'Fgfr2' 'Col9a1' 'Sox5'  
'Sorbs2' 'Sema3d' 'Col27a1' 'Tcpl1l2' 'Mbnl2' 'Leprel2'  
'Scin' 'Scrg1' 'Colgalt2' 'Trpv4' 'Epyc' 'Trim47' 'Hapln1'  
'Col11a2' 'Acan' 'Chad' 'Matn1' 'SUSD5' 'Ncmap' 'Prelp'  
'Comp' 'Lgals3' 'Matn3' 'Extl1' 'Cyt11' 'BC006965' 'Cspg4'  
'Fgfr3' 'Fzd9' 'A230065H16Rik' 'Runx3' 'Tgfa' 'Prkg2'  
'Thbs1' 'Chadl' 'Fbln7' 'Kctd4' 'C1qtnf3' 'Anxa1' 'Klf2'  
'Kazald1' 'Hspg2' 'Tenc1' 'Nod1' 'C130050O18Rik'  
'Arhgef1' 'Fbxl2' 'Efcab1'
- 'Egfl6' 'Col6a2' 'Col6a1' 'Postn' 'Agtr2' 'Col6a3' 'Meg3'  
'Rian' 'Dlk1' 'RP23-204I16.3' 'Dcn' 'Lum' 'Adamts15'  
'Phex' 'Fbln5' 'Aspn' 'Ogn' 'Lox' 'Col5a2' 'Prss35' 'Ifi27'  
'Cd34' 'Fam129a' 'C1qtnf2' 'Fcgrt' 'Htra1' 'Creb3l1' 'Egfr'  
'Fmod' 'Htra3' 'Abi3bp' 'Igsf10' 'Emilin3'

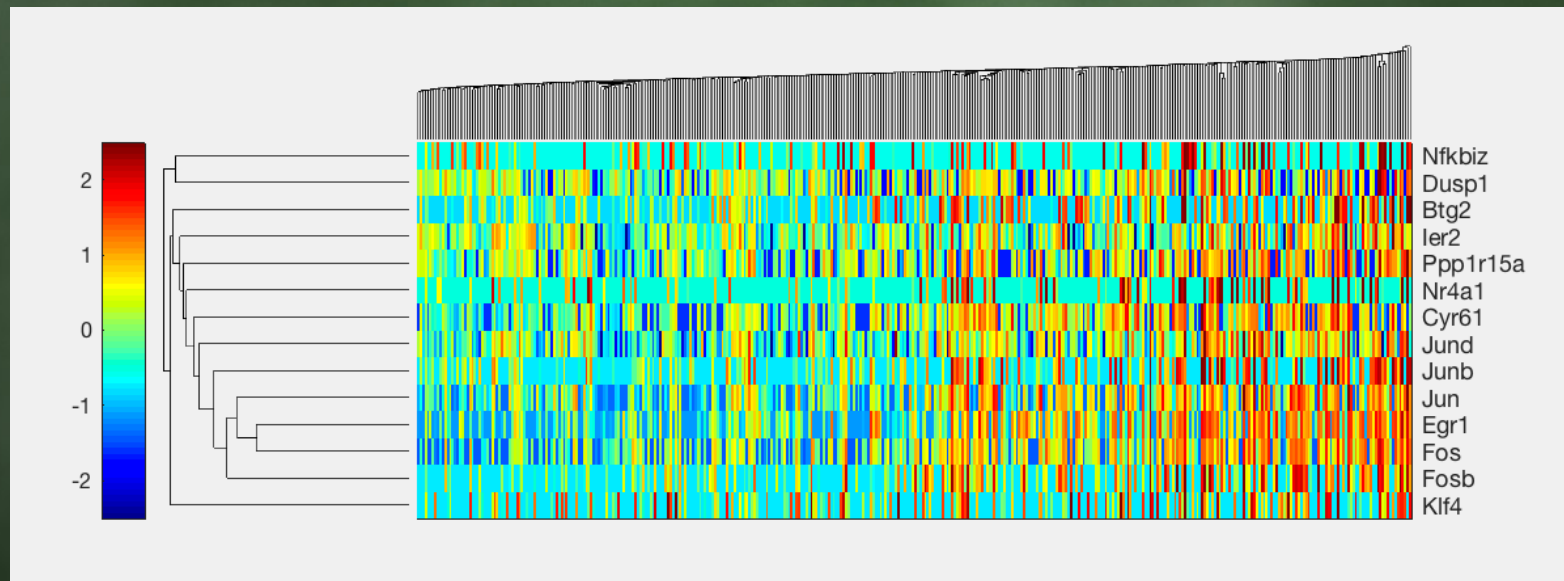






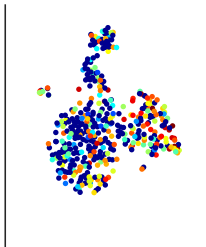


# Egr1 cluster sits in a big cluster between cartilage and collagen region

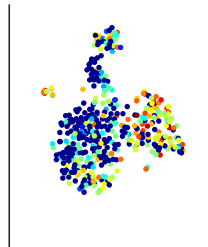


'Klf4' 'Fosb' 'Fos' 'Egr1' 'Jun' 'Junb' 'Jund' 'Cyr61'  
'Nr4a1' 'Ppp1r15a' 'Ier2' 'Btg2' 'Dusp1' 'Nfkbiz'

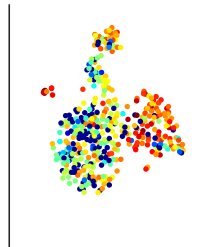
**Klf4**



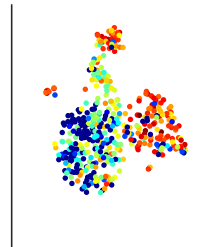
**Fosb**



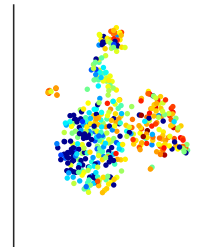
**Fos**



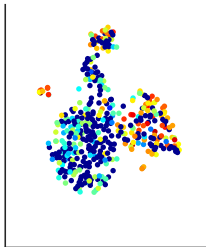
**Egr1**



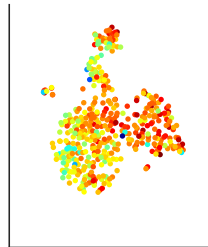
**Jun**



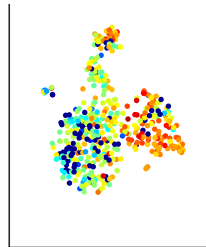
**Junb**



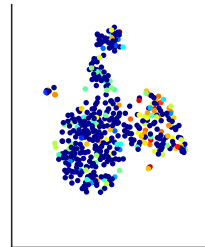
**Jund**



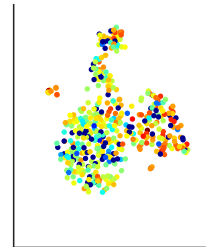
**Cyr61**



**Nr4a1**



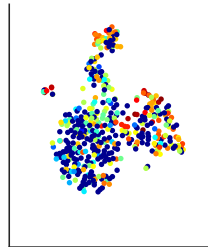
**Ppp1r15a**



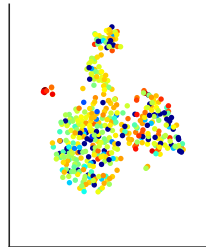
**Ier2**



**Btg2**



**Dusp1**



**Nfkbiz**

