

## Test

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[1] "CD3E" "CD4" "CD44" "CD80" "CD86" "CD8A" "ICAM1" "IFNG" "ZAP70"
[1] "The data files listed below match the conditions in the 'dataload'function:"
[1] "FR_RNA_T1D_MS_20251103_P1_1363029033.csv"
[2] "FR_RNA_T1D_MS_20251103_P1_1363029192.csv"

[1] TRUE
[1] FALSE
[1] FALSE
[1] TRUE
[1] "User selected Panel 1 and CellID"
[1] "These are the plates that were assessed by Panels 1 and CellID. They will be loaded into R for ana
[1] "FR_RNA_T1D_MS_20251103_P1"
[1] "The panel's pulled for analysis are: "
[1] "Panel1" "CellID"
[1] "Number of rows prior to duplicate genes, per cell, being combined: 18432"
[1] "Rows that contain data for CD3E:"
[1] "Number of rows AFTER duplicate genes have been removed: 18336"
[1] "Rows that contain data for CD4:"
[1] "Number of rows AFTER duplicate genes have been removed: 18240"
[1] "Rows that contain data for CD44:"
[1] "Number of rows AFTER duplicate genes have been removed: 18144"
[1] "Rows that contain data for CD80:"
[1] "Number of rows AFTER duplicate genes have been removed: 18048"
[1] "Rows that contain data for CD86:"
[1] "Number of rows AFTER duplicate genes have been removed: 17952"
[1] "Rows that contain data for CD8A:"
[1] "Number of rows AFTER duplicate genes have been removed: 17856"
[1] "Rows that contain data for ICAM1:"
[1] "Number of rows AFTER duplicate genes have been removed: 17760"
[1] "Rows that contain data for IFNG:"
[1] "Number of rows AFTER duplicate genes have been removed: 17664"
[1] "Rows that contain data for ZAP70:"
[1] "Number of rows AFTER duplicate genes have been removed: 17568"
[1] "Predicted number of rows after removing duplicate genes, per cell: 17568"
[1] "The predicted number of rows DOES match the number of rows, post duplicate gene removal"
[1] "Are blood samples in this table? FALSE"
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No expression detected in 0/96 cells

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[1] "Column Names are: "
[1] "cellSource" "probe" "age" "patient" "SPA"
[6] "SPAM" "SPAMcell" "cellType" "ACTA2" "ACVR1"
[11] "ADGRE1" "AIM2" "ANGPT1" "ANPEP" "BCL2"
[16] "BCL6" "BMP5" "BMP7" "CCR1" "CCR2"
[21] "CCR3" "CCR4" "CCR5" "CCR6" "CCR7"
[26] "CD14" "CD24A" "CD28" "CD36" "CD3E"
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[31]	"CD4"	"CD40"	"CD44"	"CD74"	"CD80"
[36]	"CD83"	"CD86"	"CD8A"	"CEACAM1"	"CLEC7A"
[41]	"COL11A1"	"COL1A1"	"COL1A2"	"CSF1"	"CSF1R"
[46]	"CSF2RA"	"CSF2RB"	"CTLA4"	"CXCL10"	"CXCL13"
[51]	"CXCR3"	"CXCR4"	"DES"	"EGFR"	"FAP"
[56]	"FCGR1"	"FGFR1"	"FGFR3"	"FGR"	"FLT4"
[61]	"FOXP3"	"FYN"	"GAPDH"	"GATA4"	"GCG"
[66]	"GFAP"	"GHRL"	"GM13889"	"GSK3A"	"GSK3B"
[71]	"H2-AA"	"H2-DMA"	"HIF1A"	"HPRT"	"IAPP"
[76]	"ICAM1"	"ICAM2"	"ICOS"	"ICOSL"	"IFI44"
[81]	"IFI44L"	"IFIT1"	"IFIT3"	"IFNG"	"IFNGR1"
[86]	"IGF1"	"IGF2"	"IL-21"	"IL10"	"IL12B"
[91]	"IL12RB"	"IL17A"	"IL18R1"	"IL1A"	"IL1B"
[96]	"IL1R2"	"IL2"	"IL25"	"IL27"	"IL27R"
[101]	"IL2RA"	"IL3"	"IL34"	"IL4"	"IL4RA"
[106]	"IL5"	"IL5RA"	"IL6"	"IL7"	"IL7R"
[111]	"INS1"	"INS2"	"IRF1"	"IRF2"	"IRF4"
[116]	"IRF7"	"ISG15"	"ITGAX"	"ITGB1"	"JAK1"
[121]	"JAK2"	"KDR"	"KLF5"	"LCK"	"LEPR"
[126]	"LY6E"	"LY75"	"MAP2K6"	"MAPK8"	"MMP1A"
[131]	"MMP2"	"MMP3"	"MMP9"	"MX1"	"NFATC1"
[136]	"NFKB1"	"NLRP3"	"NUR77"	"OAS1B"	"OAS2"
[141]	"OASL1"	"PD1"	"PDGFA"	"PDGFB"	"PDGFRB"
[146]	"PDL-1"	"PDPN"	"PECAM1"	"PPARA"	"PPARG"
[151]	"PPARGC1A"	"PPY"	"PTEN"	"PTGS2"	"PTK2"
[156]	"RSAD2"	"RSP01"	"SELE"	"SFRP1"	"SOCS3"
[161]	"SPP1"	"SST"	"STAT1"	"STAT3"	"STAT4"
[166]	"STAT5"	"TBX21"	"TEK"	"TGFB1"	"TGFB2"
[171]	"TIMP1"	"TIMP2"	"TLR3"	"TLR4"	"TLR7"
[176]	"TLR9"	"TNC"	"TNF"	"TNFAIP3"	"TNFRSF1A"
[181]	"TNFRSF1B"	"TNFSF11"	"TRAF2"	"VAV1"	"VCAM1"
[186]	"VEGFA"	"VEGFB"	"WNT2B"	"WNT4"	"ZAP70"
[191]	"ZEB2"				

[1] TRUE

[1] TRUE

[1] TRUE

[1] TRUE

[1] "The panel observed in the panel detection tests, in the 'clusterFilter.R' script, is 1 and 3"

[1] "Warning! The panel detected and the panel number input by the user are not the same!"

[1] "Test 1 is FALSE"

[1] "Test 2 is FALSE"

[1] "Test1and2 is TRUE"

[1] "Test3 is FALSE"

[1]	"cellSource"	"probe"	"age"	"patient"	"SPA"
[6]	"SPAM"	"SPAMcell"	"cellType"	"ACTA2"	"ACVR1"
[11]	"ADGRE1"	"AIM2"	"ANGPT1"	"ANPEP"	"BCL2"
[16]	"BCL6"	"BMP5"	"BMP7"	"CCR1"	"CCR2"
[21]	"CCR3"	"CCR4"	"CCR5"	"CCR6"	"CCR7"
[26]	"CD14"	"CD24A"	"CD28"	"CD36"	"CD3E"
[31]	"CD4"	"CD40"	"CD44"	"CD74"	"CD80"
[36]	"CD83"	"CD86"	"CD8A"	"CEACAM1"	"CLEC7A"
[41]	"COL11A1"	"COL1A1"	"COL1A2"	"CSF1"	"CSF1R"
[46]	"CSF2RA"	"CSF2RB"	"CTLA4"	"CXCL10"	"CXCL13"

[51]	"CXCR3"	"CXCR4"	"DES"	"EGFR"	"FAP"
[56]	"FCGR1"	"FGFR1"	"FGFR3"	"FGR"	"FLT4"
[61]	"FOXP3"	"FYN"	"GAPDH"	"GATA4"	"GCG"
[66]	"GFAP"	"GHRL"	"GM13889"	"GSK3A"	"GSK3B"
[71]	"H2-AA"	"H2-DMA"	"HIF1A"	"HPRT"	"IAPP"
[76]	"ICAM1"	"ICAM2"	"ICOS"	"ICOSL"	"IFI44"
[81]	"IFI44L"	"IFIT1"	"IFIT3"	"IFNG"	"IFNGR1"
[86]	"IGF1"	"IGF2"	"IL-21"	"IL10"	"IL12B"
[91]	"IL12RB"	"IL17A"	"IL18R1"	"IL1A"	"IL1B"
[96]	"IL1R2"	"IL2"	"IL25"	"IL27"	"IL27R"
[101]	"IL2RA"	"IL3"	"IL34"	"IL4"	"IL4RA"
[106]	"IL5"	"IL5RA"	"IL6"	"IL7"	"IL7R"
[111]	"INS1"	"INS2"	"IRF1"	"IRF2"	"IRF4"
[116]	"IRF7"	"ISG15"	"ITGAX"	"ITGB1"	"JAK1"
[121]	"JAK2"	"KDR"	"KLF5"	"LCK"	"LEPR"
[126]	"LY6E"	"LY75"	"MAP2K6"	"MAPK8"	"MMP1A"
[131]	"MMP2"	"MMP3"	"MMP9"	"MX1"	"NFATC1"
[136]	"NFKB1"	"NLRP3"	"NUR77"	"OAS1B"	"OAS2"
[141]	"OASL1"	"PD1"	"PDGFA"	"PDGFB"	"PDGFRB"
[146]	"PDL-1"	"PDPN"	"PECAM1"	"PPARA"	"PPARG"
[151]	"PPARGC1A"	"PPY"	"PTEN"	"PTGS2"	"PTK2"
[156]	"RSAD2"	"RSP01"	"SELE"	"SFRP1"	"SOCS3"
[161]	"SPP1"	"SST"	"STAT1"	"STAT3"	"STAT4"
[166]	"STAT5"	"TBX21"	"TEK"	"TGFB1"	"TGFB2"
[171]	"TIMP1"	"TIMP2"	"TLR3"	"TLR4"	"TLR7"
[176]	"TLR9"	"TNC"	"TNF"	"TNFAIP3"	"TNFRSF1A"
[181]	"TNFRSF1B"	"TNFSF11"	"TRAF2"	"VAV1"	"VCAM1"
[186]	"VEGFA"	"VEGFB"	"WNT2B"	"WNT4"	"ZAP70"
[191]	"ZEB2"				

[1] "The first column you'll pull is: 9"

[1] "The last column you'll pull is: 191"

[1]	"ACTA2"	"ACVR1"	"ADGRE1"	"AIM2"	"ANGPT1"	"ANPEP"
[7]	"BCL2"	"BCL6"	"BMP5"	"BMP7"	"CCR1"	"CCR2"
[13]	"CCR3"	"CCR4"	"CCR5"	"CCR6"	"CCR7"	"CD14"
[19]	"CD24A"	"CD28"	"CD36"	"CD3E"	"CD4"	"CD40"
[25]	"CD44"	"CD74"	"CD80"	"CD83"	"CD86"	"CD8A"
[31]	"CEACAM1"	"CLEC7A"	"COL11A1"	"COL1A1"	"COL1A2"	"CSF1"
[37]	"CSF1R"	"CSF2RA"	"CSF2RB"	"CTLA4"	"CXCL10"	"CXCL13"
[43]	"CXCR3"	"CXCR4"	"DES"	"EGFR"	"FAP"	"FCGR1"
[49]	"FGFR1"	"FGFR3"	"FGR"	"FLT4"	"FOXP3"	"FYN"
[55]	"GAPDH"	"GATA4"	"GCG"	"GFAP"	"GHRL"	"GM13889"
[61]	"GSK3A"	"GSK3B"	"H2-AA"	"H2-DMA"	"HIF1A"	"HPRT"
[67]	"IAPP"	"ICAM1"	"ICAM2"	"ICOS"	"ICOSL"	"IFI44"
[73]	"IFI44L"	"IFIT1"	"IFIT3"	"IFNG"	"IFNGR1"	"IGF1"
[79]	"IGF2"	"IL-21"	"IL10"	"IL12B"	"IL12RB"	"IL17A"
[85]	"IL18R1"	"IL1A"	"IL1B"	"IL1R2"	"IL2"	"IL25"
[91]	"IL27"	"IL27R"	"IL2RA"	"IL3"	"IL34"	"IL4"
[97]	"IL4RA"	"IL5"	"IL5RA"	"IL6"	"IL7"	"IL7R"
[103]	"INS1"	"INS2"	"IRF1"	"IRF2"	"IRF4"	"IRF7"
[109]	"ISG15"	"ITGAX"	"ITGB1"	"JAK1"	"JAK2"	"KDR"
[115]	"KLF5"	"LCK"	"LEPR"	"LY6E"	"LY75"	"MAP2K6"
[121]	"MAPK8"	"MMP1A"	"MMP2"	"MMP3"	"MMP9"	"MX1"
[127]	"NFATC1"	"NFKB1"	"NLRP3"	"NUR77"	"OAS1B"	"OAS2"
[133]	"OASL1"	"PD1"	"PDGFA"	"PDGFB"	"PDGFRB"	"PDL-1"

[139]	"PDPN"	"PECAM1"	"PPARA"	"PPARG"	"PPARGC1A"	"PPY"
[145]	"PTEN"	"PTGS2"	"PTK2"	"RSAD2"	"RSP01"	"SELE"
[151]	"SFRP1"	"SOCS3"	"SPP1"	"SST"	"STAT1"	"STAT3"
[157]	"STAT4"	"STAT5"	"TBX21"	"TEK"	"TGFB1"	"TGFB2"
[163]	"TIMP1"	"TIMP2"	"TLR3"	"TLR4"	"TLR7"	"TLR9"
[169]	"TNC"	"TNF"	"TNFAIP3"	"TNFRSF1A"	"TNFRSF1B"	"TNFSF11"
[175]	"TRAF2"	"VAV1"	"VCAM1"	"VEGFA"	"VEGFB"	"WNT2B"
[181]	"WNT4"	"ZAP70"	"ZEB2"			

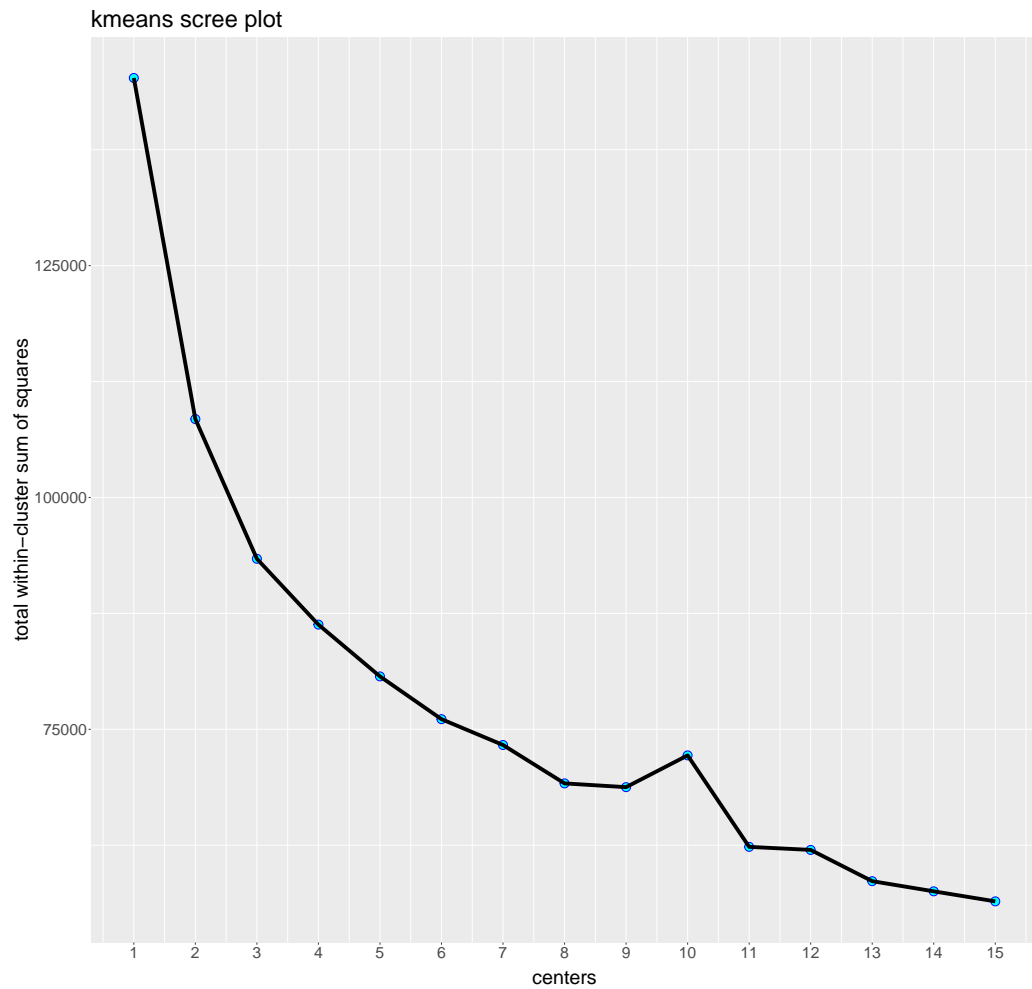
[1] "PanelNumber equals: 1 and 3 . Columns to be sent for kmeans testing: "

[1]	"ACTA2"	"ACVR1"	"ADGRE1"	"AIM2"	"ANGPT1"	"ANPEP"
[7]	"BCL2"	"BCL6"	"BMP5"	"BMP7"	"CCR1"	"CCR2"
[13]	"CCR3"	"CCR4"	"CCR5"	"CCR6"	"CCR7"	"CD14"
[19]	"CD24A"	"CD28"	"CD36"	"CD3E"	"CD4"	"CD40"
[25]	"CD44"	"CD74"	"CD80"	"CD83"	"CD86"	"CD8A"
[31]	"CEACAM1"	"CLEC7A"	"COL11A1"	"COL1A1"	"COL1A2"	"CSF1"
[37]	"CSF1R"	"CSF2RA"	"CSF2RB"	"CTLA4"	"CXCL10"	"CXCL13"
[43]	"CXCR3"	"CXCR4"	"DES"	"EGFR"	"FAP"	"FCGR1"
[49]	"FGFR1"	"FGFR3"	"FGR"	"FLT4"	"FOXP3"	"FYN"
[55]	"GAPDH"	"GATA4"	"GCG"	"GFAP"	"GHRL"	"GM13889"
[61]	"GSK3A"	"GSK3B"	"H2-AA"	"H2-DMA"	"HIF1A"	"HPRT"
[67]	"IAPP"	"ICAM1"	"ICAM2"	"ICOS"	"ICOSL"	"IFI44"
[73]	"IFI44L"	"IFIT1"	"IFIT3"	"IFNG"	"IFNGR1"	"IGF1"
[79]	"IGF2"	"IL-21"	"IL10"	"IL12B"	"IL12RB"	"IL17A"
[85]	"IL18R1"	"IL1A"	"IL1B"	"IL1R2"	"IL2"	"IL25"
[91]	"IL27"	"IL27R"	"IL2RA"	"IL3"	"IL34"	"IL4"
[97]	"IL4RA"	"IL5"	"IL5RA"	"IL6"	"IL7"	"IL7R"
[103]	"INS1"	"INS2"	"IRF1"	"IRF2"	"IRF4"	"IRF7"
[109]	"ISG15"	"ITGAX"	"ITGB1"	"JAK1"	"JAK2"	"KDR"
[115]	"KLF5"	"LCK"	"LEPR"	"LY6E"	"LY75"	"MAP2K6"
[121]	"MAPK8"	"MMP1A"	"MMP2"	"MMP3"	"MMP9"	"MX1"
[127]	"NFATC1"	"NFKB1"	"NLRP3"	"NUR77"	"OAS1B"	"OAS2"
[133]	"OASL1"	"PD1"	"PDGFA"	"PDGFB"	"PDGFRB"	"PDL-1"
[139]	"PDPN"	"PECAM1"	"PPARA"	"PPARG"	"PPARGC1A"	"PPY"
[145]	"PTEN"	"PTGS2"	"PTK2"	"RSAD2"	"RSP01"	"SELE"
[151]	"SFRP1"	"SOCS3"	"SPP1"	"SST"	"STAT1"	"STAT3"
[157]	"STAT4"	"STAT5"	"TBX21"	"TEK"	"TGFB1"	"TGFB2"
[163]	"TIMP1"	"TIMP2"	"TLR3"	"TLR4"	"TLR7"	"TLR9"
[169]	"TNC"	"TNF"	"TNFAIP3"	"TNFRSF1A"	"TNFRSF1B"	"TNFSF11"
[175]	"TRAF2"	"VAV1"	"VCAM1"	"VEGFA"	"VEGFB"	"WNT2B"
[181]	"WNT4"	"ZAP70"	"ZEB2"			

[1] "Column names after searching for the column pattern and after selecting the right columns. The fol

[1]	"ACTA2"	"ACVR1"	"ADGRE1"	"AIM2"	"ANGPT1"	"ANPEP"
[7]	"BCL2"	"BCL6"	"BMP5"	"BMP7"	"CCR1"	"CCR2"
[13]	"CCR3"	"CCR4"	"CCR5"	"CCR6"	"CCR7"	"CD14"
[19]	"CD24A"	"CD28"	"CD36"	"CD3E"	"CD4"	"CD40"
[25]	"CD44"	"CD74"	"CD80"	"CD83"	"CD86"	"CD8A"
[31]	"CEACAM1"	"CLEC7A"	"COL11A1"	"COL1A1"	"COL1A2"	"CSF1"
[37]	"CSF1R"	"CSF2RA"	"CSF2RB"	"CTLA4"	"CXCL10"	"CXCL13"
[43]	"CXCR3"	"CXCR4"	"DES"	"EGFR"	"FAP"	"FCGR1"
[49]	"FGFR1"	"FGFR3"	"FGR"	"FLT4"	"FOXP3"	"FYN"
[55]	"GAPDH"	"GATA4"	"GCG"	"GFAP"	"GHRL"	"GM13889"
[61]	"GSK3A"	"GSK3B"	"H2-AA"	"H2-DMA"	"HIF1A"	"HPRT"
[67]	"IAPP"	"ICAM1"	"ICAM2"	"ICOS"	"ICOSL"	"IFI44"
[73]	"IFI44L"	"IFIT1"	"IFIT3"	"IFNG"	"IFNGR1"	"IGF1"

[79]	"IGF2"	"IL-21"	"IL10"	"IL12B"	"IL12RB"	"IL17A"
[85]	"IL18R1"	"IL1A"	"IL1B"	"IL1R2"	"IL2"	"IL25"
[91]	"IL27"	"IL27R"	"IL2RA"	"IL3"	"IL34"	"IL4"
[97]	"IL4RA"	"IL5"	"IL5RA"	"IL6"	"IL7"	"IL7R"
[103]	"INS1"	"INS2"	"IRF1"	"IRF2"	"IRF4"	"IRF7"
[109]	"ISG15"	"ITGAX"	"ITGB1"	"JAK1"	"JAK2"	"KDR"
[115]	"KLF5"	"LCK"	"LEPR"	"LY6E"	"LY75"	"MAP2K6"
[121]	"MAPK8"	"MMP1A"	"MMP2"	"MMP3"	"MMP9"	"MX1"
[127]	"NFATC1"	"NFKB1"	"NLRP3"	"NUR77"	"OAS1B"	"OAS2"
[133]	"OASL1"	"PD1"	"PDGFA"	"PDGFB"	"PDGFRB"	"PDL-1"
[139]	"PDPN"	"PECAM1"	"PPARA"	"PPARG"	"PPARGC1A"	"PPY"
[145]	"PTEN"	"PTGS2"	"PTK2"	"RSAD2"	"RSP01"	"SELE"
[151]	"SFRP1"	"SOCS3"	"SPP1"	"SST"	"STAT1"	"STAT3"
[157]	"STAT4"	"STAT5"	"TBX21"	"TEK"	"TGFB1"	"TGFB2"
[163]	"TIMP1"	"TIMP2"	"TLR3"	"TLR4"	"TLR7"	"TLR9"
[169]	"TNC"	"TNF"	"TNFAIP3"	"TNFRSF1A"	"TNFRSF1B"	"TNFSF11"
[175]	"TRAF2"	"VAV1"	"VCAM1"	"VEGFA"	"VEGFB"	"WNT2B"
[181]	"WNT4"	"ZAP70"	"ZEB2"			



[1] "Column Names for ctClust are: "

[1] "cellSource"	"probe"	"age"	"patient"
[5] "SPA"	"SPAM"	"SPAMcell"	"cellType"
[9] "ACTA2"	"ACVR1"	"ADGRE1"	"AIM2"
[13] "ANGPT1"	"ANPEP"	"BCL2"	"BCL6"
[17] "BMP5"	"BMP7"	"CCR1"	"CCR2"
[21] "CCR3"	"CCR4"	"CCR5"	"CCR6"
[25] "CCR7"	"CD14"	"CD24A"	"CD28"

[29]	"CD36"	"CD3E"	"CD4"	"CD40"
[33]	"CD44"	"CD74"	"CD80"	"CD83"
[37]	"CD86"	"CD8A"	"CEACAM1"	"CLEC7A"
[41]	"COL11A1"	"COL1A1"	"COL1A2"	"CSF1"
[45]	"CSF1R"	"CSF2RA"	"CSF2RB"	"CTLA4"
[49]	"CXCL10"	"CXCL13"	"CXCR3"	"CXCR4"
[53]	"DES"	"EGFR"	"FAP"	"FCGR1"
[57]	"FGFR1"	"FGFR3"	"FGR"	"FLT4"
[61]	"FOXP3"	"FYN"	"GAPDH"	"GATA4"
[65]	"GCG"	"GFAP"	"GHRL"	"GM13889"
[69]	"GSK3A"	"GSK3B"	"H2.AA"	"H2.DMA"
[73]	"HIF1A"	"HPRT"	"IAPP"	"ICAM1"
[77]	"ICAM2"	"ICOS"	"ICOSL"	"IFI44"
[81]	"IFI44L"	"IFIT1"	"IFIT3"	"IFNG"
[85]	"IFNGR1"	"IGF1"	"IGF2"	"IL.21"
[89]	"IL10"	"IL12B"	"IL12RB"	"IL17A"
[93]	"IL18R1"	"IL1A"	"IL1B"	"IL1R2"
[97]	"IL2"	"IL25"	"IL27"	"IL27R"
[101]	"IL2RA"	"IL3"	"IL34"	"IL4"
[105]	"IL4RA"	"IL5"	"IL5RA"	"IL6"
[109]	"IL7"	"IL7R"	"INS1"	"INS2"
[113]	"IRF1"	"IRF2"	"IRF4"	"IRF7"
[117]	"ISG15"	"ITGAX"	"ITGB1"	"JAK1"
[121]	"JAK2"	"KDR"	"KLF5"	"LCK"
[125]	"LEPR"	"LY6E"	"LY75"	"MAP2K6"
[129]	"MAPK8"	"MMP1A"	"MMP2"	"MMP3"
[133]	"MMP9"	"MX1"	"NFATC1"	"NFKB1"
[137]	"NLRP3"	"NUR77"	"OAS1B"	"OAS2"
[141]	"OASL1"	"PD1"	"PDGFA"	"PDGFB"
[145]	"PDGFRB"	"PDL.1"	"PDPN"	"PECAM1"
[149]	"PPARA"	"PPARG"	"PPARGC1A"	"PPY"
[153]	"PTEN"	"PTGS2"	"PTK2"	"RSAD2"
[157]	"RSP01"	"SELE"	"SFRP1"	"SOCS3"
[161]	"SPP1"	"SST"	"STAT1"	"STAT3"
[165]	"STAT4"	"STAT5"	"TBX21"	"TEK"
[169]	"TGFB1"	"TGFB2"	"TIMP1"	"TIMP2"
[173]	"TLR3"	"TLR4"	"TLR7"	"TLR9"
[177]	"TNC"	"TNF"	"TNFAIP3"	"TNFRSF1A"
[181]	"TNFRSF1B"	"TNFSF11"	"TRAF2"	"VAV1"
[185]	"VCAM1"	"VEGFA"	"VEGFB"	"WNT2B"
[189]	"WNT4"	"ZAP70"	"ZEB2"	"normFit.cluster"
[1]	"Column Numbers for ctClust after moving around the columns:"			
[1]	"cellSource"	"probe"	"age"	"patient"
[5]	"SPA"	"SPAM"	"SPAMcell"	"cellType"
[9]	"kmeans.cluster"	"ACTA2"	"ACVR1"	"ADGRE1"
[13]	"AIM2"	"ANGPT1"	"ANPEP"	"BCL2"
[17]	"BCL6"	"BMP5"	"BMP7"	"CCR1"
[21]	"CCR2"	"CCR3"	"CCR4"	"CCR5"
[25]	"CCR6"	"CCR7"	"CD14"	"CD24A"
[29]	"CD28"	"CD36"	"CD3E"	"CD4"
[33]	"CD40"	"CD44"	"CD74"	"CD80"
[37]	"CD83"	"CD86"	"CD8A"	"CEACAM1"
[41]	"CLEC7A"	"COL11A1"	"COL1A1"	"COL1A2"
[45]	"CSF1"	"CSF1R"	"CSF2RA"	"CSF2RB"

[49]	"CTLA4"	"CXCL10"	"CXCL13"	"CXCR3"
[53]	"CXCR4"	"DES"	"EGFR"	"FAP"
[57]	"FCGR1"	"FGFR1"	"FGFR3"	"FGR"
[61]	"FLT4"	"FOXP3"	"FYN"	"GAPDH"
[65]	"GATA4"	"GCG"	"GFAP"	"GHRL"
[69]	"GM13889"	"GSK3A"	"GSK3B"	"H2.AA"
[73]	"H2.DMA"	"HIF1A"	"HPRT"	"IAPP"
[77]	"ICAM1"	"ICAM2"	"ICOS"	"ICOSL"
[81]	"IFI44"	"IFI44L"	"IFIT1"	"IFIT3"
[85]	"IFNG"	"IFNGR1"	"IGF1"	"IGF2"
[89]	"IL.21"	"IL10"	"IL12B"	"IL12RB"
[93]	"IL17A"	"IL18R1"	"IL1A"	"IL1B"
[97]	"IL1R2"	"IL2"	"IL25"	"IL27"
[101]	"IL27R"	"IL2RA"	"IL3"	"IL34"
[105]	"IL4"	"IL4RA"	"IL5"	"IL5RA"
[109]	"IL6"	"IL7"	"IL7R"	"INS1"
[113]	"INS2"	"IRF1"	"IRF2"	"IRF4"
[117]	"IRF7"	"ISG15"	"ITGAX"	"ITGB1"
[121]	"JAK1"	"JAK2"	"KDR"	"KLF5"
[125]	"LCK"	"LEPR"	"LY6E"	"LY75"
[129]	"MAP2K6"	"MAPK8"	"MMP1A"	"MMP2"
[133]	"MMP3"	"MMP9"	"MX1"	"NFATC1"
[137]	"NFKB1"	"NLRP3"	"NUR77"	"OAS1B"
[141]	"OAS2"	"OASL1"	"PD1"	"PDGFA"
[145]	"PDGFB"	"PDGFRB"	"PDL.1"	"PDPN"
[149]	"PECAM1"	"PPARA"	"PPARG"	"PPARGC1A"
[153]	"PPY"	"PTEN"	"PTGS2"	"PTK2"
[157]	"RSAD2"	"RSP01"	"SELE"	"SFRP1"
[161]	"SOCS3"	"SPP1"	"SST"	"STAT1"
[165]	"STAT3"	"STAT4"	"STAT5"	"TBX21"
[169]	"TEK"	"TGFB1"	"TGFB2"	"TIMP1"
[173]	"TIMP2"	"TLR3"	"TLR4"	"TLR7"
[177]	"TLR9"	"TNC"	"TNF"	"TNFAIP3"
[181]	"TNFRSF1A"	"TNFRSF1B"	"TNFSF11"	"TRAF2"
[185]	"VAV1"	"VCAM1"	"VEGFA"	"VEGFB"
[189]	"WNT2B"	"WNT4"	"ZAP70"	"ZEB2"

[1] "The values in lengthofkmeans is: 9"

[1] "The length of lengthofkmeans object is 1"

[1] "When heatmapfactor is set to 'kmeans.cluster', the first column being pulled is kmeans.cluster"

[1] "Value loaded into idCols: 9 which corresponds to column kmeans.cluster. The second to last column is "

[1]	"cellSource"	"probe"	"age"	"patient"
[5]	"SPA"	"SPAM"	"SPAMcell"	"cellType"
[9]	"kmeans.cluster"	"ACTA2"	"ACVR1"	"ADGRE1"
[13]	"AIM2"	"ANGPT1"	"ANPEP"	"BCL2"
[17]	"BCL6"	"BMP5"	"BMP7"	"CCR1"
[21]	"CCR2"	"CCR3"	"CCR4"	"CCR5"
[25]	"CCR6"	"CCR7"	"CD14"	"CD24A"
[29]	"CD28"	"CD36"	"CD3E"	"CD4"
[33]	"CD40"	"CD44"	"CD74"	"CD80"
[37]	"CD83"	"CD86"	"CD8A"	"CEACAM1"
[41]	"CLEC7A"	"COL11A1"	"COL1A1"	"COL1A2"
[45]	"CSF1"	"CSF1R"	"CSF2RA"	"CSF2RB"
[49]	"CTLA4"	"CXCL10"	"CXCL13"	"CXCR3"
[53]	"CXCR4"	"DES"	"EGFR"	"FAP"



[57]	"FCGR1"	"FGFR1"	"FGFR3"	"FGR"
[61]	"FLT4"	"FOXP3"	"FYN"	"GAPDH"
[65]	"GATA4"	"GCG"	"GFAP"	"GHRL"
[69]	"GM13889"	"GSK3A"	"GSK3B"	"H2.AA"
[73]	"H2.DMA"	"HIF1A"	"HPRT"	"IAPP"
[77]	"ICAM1"	"ICAM2"	"ICOS"	"ICOSL"
[81]	"IFI44"	"IFI44L"	"IFIT1"	"IFIT3"
[85]	"IFNG"	"IFNGR1"	"IGF1"	"IGF2"
[89]	"IL.21"	"IL10"	"IL12B"	"IL12RB"
[93]	"IL17A"	"IL18R1"	"IL1A"	"IL1B"
[97]	"IL1R2"	"IL2"	"IL25"	"IL27"
[101]	"IL27R"	"IL2RA"	"IL3"	"IL34"
[105]	"IL4"	"IL4RA"	"IL5"	"IL5RA"
[109]	"IL6"	"IL7"	"IL7R"	"INS1"
[113]	"INS2"	"IRF1"	"IRF2"	"IRF4"
[117]	"IRF7"	"ISG15"	"ITGAX"	"ITGB1"
[121]	"JAK1"	"JAK2"	"KDR"	"KLF5"
[125]	"LCK"	"LEPR"	"LY6E"	"LY75"
[129]	"MAP2K6"	"MAPK8"	"MMP1A"	"MMP2"
[133]	"MMP3"	"MMP9"	"MX1"	"NFATC1"
[137]	"NFKB1"	"NLRP3"	"NUR77"	"OAS1B"
[141]	"OAS2"	"OASL1"	"PD1"	"PDGFA"
[145]	"PDGFB"	"PDGFRB"	"PDL.1"	"PDPN"
[149]	"PECAM1"	"PPARA"	"PPARG"	"PPARGC1A"
[153]	"PPY"	"PTEN"	"PTGS2"	"PTK2"
[157]	"RSAD2"	"RSP01"	"SELE"	"SFRP1"
[161]	"SOCS3"	"SPP1"	"SST"	"STAT1"
[165]	"STAT3"	"STAT4"	"STAT5"	"TBX21"
[169]	"TEK"	"TGFB1"	"TGFB2"	"TIMP1"
[173]	"TIMP2"	"TLR3"	"TLR4"	"TLR7"
[177]	"TLR9"	"TNC"	"TNF"	"TNFAIP3"
[181]	"TNFRSF1A"	"TNFRSF1B"	"TNFSF11"	"TRAF2"
[185]	"VAV1"	"VCAM1"	"VEGFA"	"VEGFB"
[189]	"WNT2B"	"WNT4"	"ZAP70"	"ZEB2"

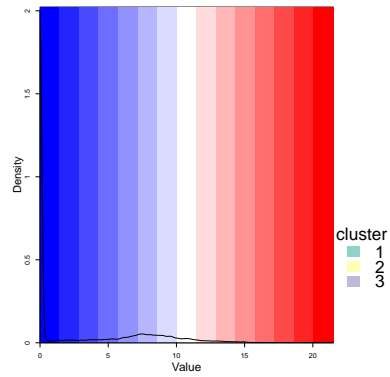
[1]	161	111	118	145	65	61	71	62	106	66	112	156	162	178	52	151	4	164
[19]	166	147	155	77	113	105	2	128	171	92	152	55	138	97	85	179	177	175
[37]	67	127	172	49	135	165	36	136	181	6	120	160	115	5	54	38	51	68
[55]	31	103	69	130	104	26	173	139	21	12	114	158	142	119	95	8	25	74
[73]	50	153	117	78	163	64	46	108	57	154	72	3	27	43	100	129	159	109
[91]	28	143	18	59	7	63	131	37	140	10	101	42	19	70	39	148	146	33
[109]	24	75	132	170	144	126	83	116	121	60	176	29	58	9	35	16	79	34
[127]	125	123	157	174	183	169	168	45	41	110	88	137	90	133	47	80	124	182
[145]	150	167	30	32	40	53	87	56	86	1	11	13	14	15	17	20	22	23
[163]	44	48	73	76	81	82	84	89	91	93	94	96	98	99	102	107	122	134
[181]	141	149	180															

```

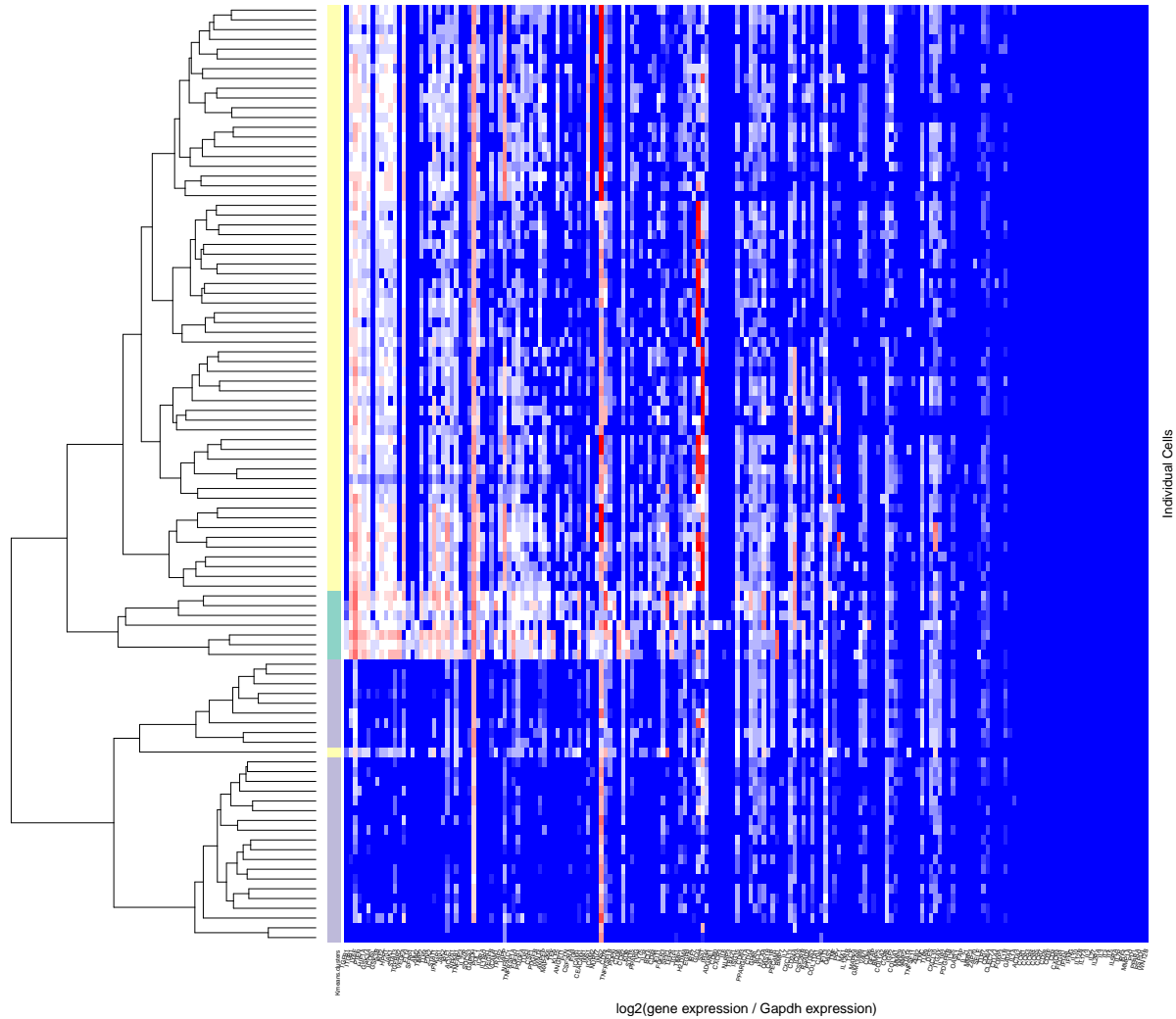
[1] "Length of pvals is 183"
      uniqueAges      colorsList
      "islets" "deepskyblue2"
      [,1]      [,2]
[1,] "islets" "deepskyblue2"
uniqueSources      colorsList
      "tissue"      NA
[1] "The value in idCols is 9 which should be the 'kmeans' column"
[1] "The value in and the first column for the heatmap is TGFB1. The last gene is: WNT2B"

```

```
chr [1:96, 1] "#BEBADA" "#BEBADA" "#BEBADA" "#BEBADA" "#BEBADA" "#BEBADA" "#BEBADA" ...
- attr(*, "dimnames")=List of 2
..$ : NULL
..$ : chr "Kmeans.clusters"
```

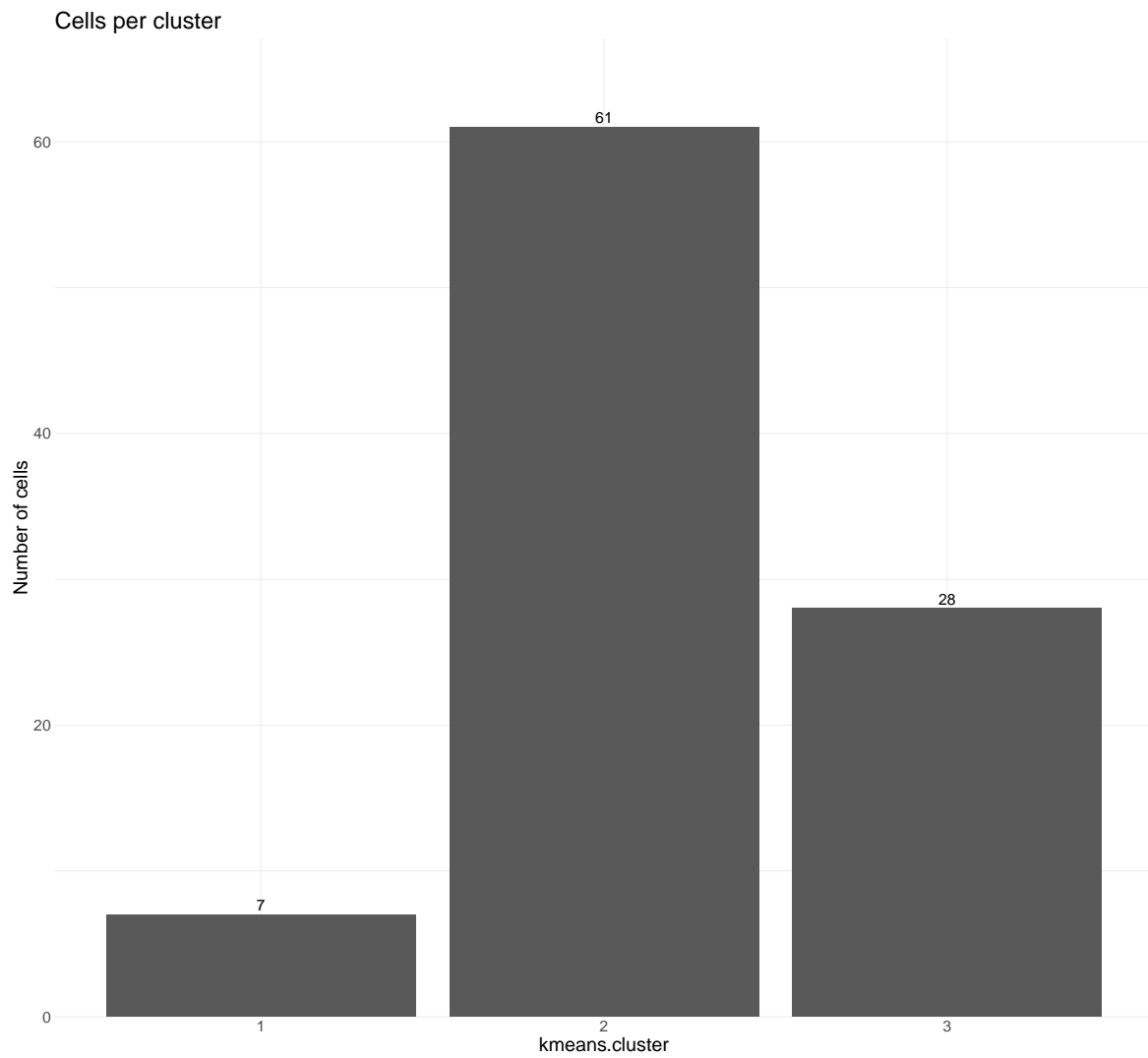


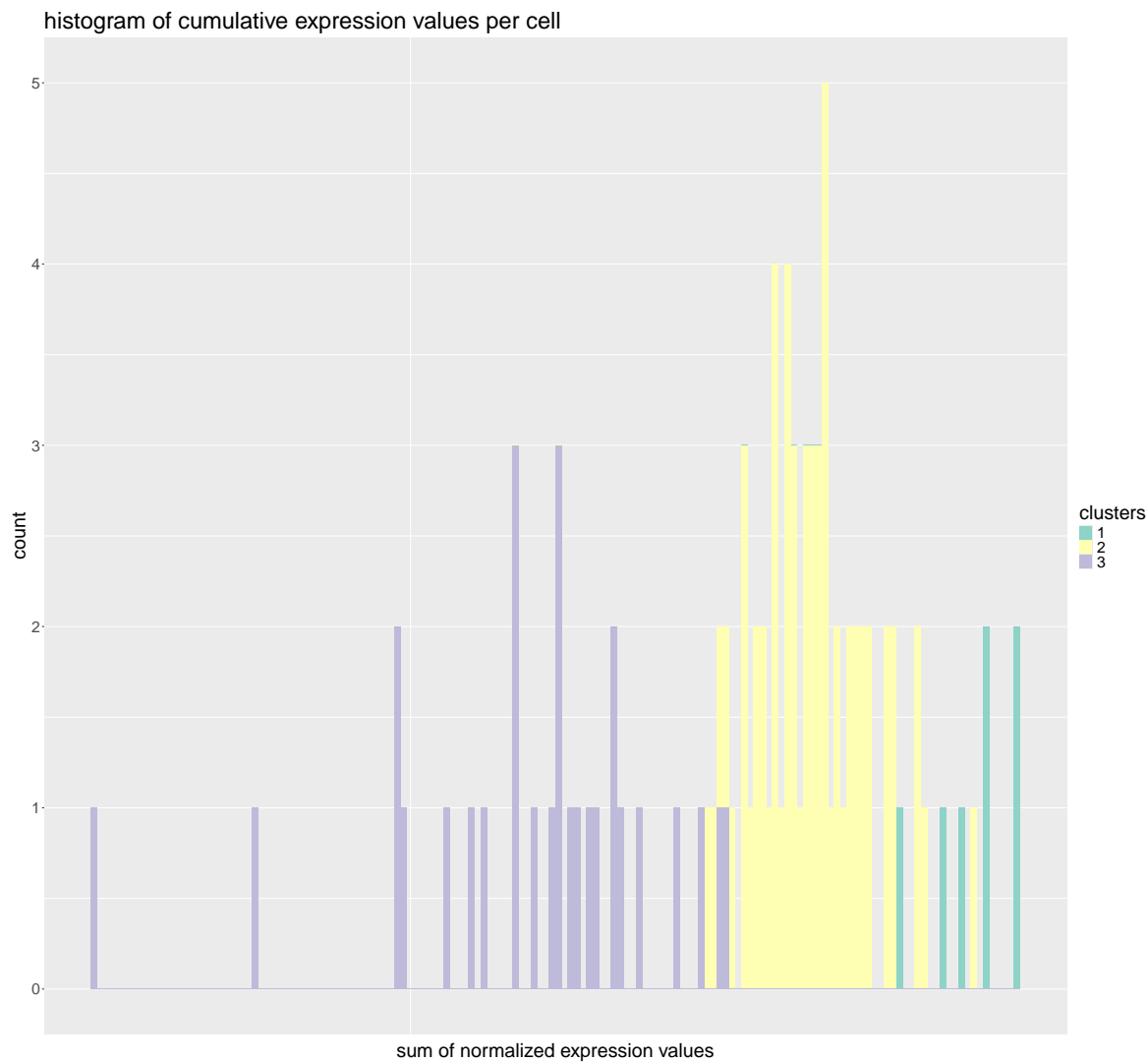
heatmap for NOD Doublets



Cells per Cluster

	n_cells
cluster_1	7
cluster_2	61
cluster_3	28





```
[1] "Column Names are: "
[1] "cellSource" "probe" "age" "patient"
[5] "SPA" "SPAM" "SPAMcell" "cellType"
[9] "kmeans.cluster" "TGFB1" "ITGB1" "LY6E"
[13] "PTEN" "HIF1A" "GSK3A" "ICOSL"
[17] "GSK3B" "IRF2" "HPRT" "JAK1"
[21] "STAT3" "TGFB2" "VEGFA" "FLT4"
[25] "SFRP1" "AIM2" "TIMP2" "TLR4"
```

[29]	"PTK2"	"STAT1"	"IFNGR1"	"JAK2"
[33]	"IRF1"	"ACVR1"	"NFKB1"	"TNFAIP3"
[37]	"IL27R"	"SOCS3"	"GAPDH"	"PDL.1"
[41]	"IL4RA"	"IL18R1"	"VEGFB"	"VCAM1"
[45]	"TRAF2"	"IAPP"	"NFATC1"	"TNFRSF1A"
[49]	"FGFR1"	"PDGFA"	"TLR3"	"CSF1"
[53]	"PDGFB"	"WNT4"	"ANPEP"	"MAP2K6"
[57]	"TEK"	"KLF5"	"ANGPT1"	"FYN"
[61]	"CSF2RA"	"FGR"	"ICAM1"	"CEACAM1"
[65]	"INS1"	"ICAM2"	"NUR77"	"INS2"
[69]	"CD74"	"TNFRSF1B"	"PDPN"	"CD36"
[73]	"CCR2"	"KDR"	"STAT5"	"PPARG"
[77]	"LY75"	"IL34"	"BCL6"	"CD44"
[81]	"IFIT1"	"FGFR3"	"SPP1"	"LEPR"
[85]	"IGF1"	"TIMP1"	"H2.DMA"	"EGFR"
[89]	"IRF7"	"GCG"	"SST"	"IFI44"
[93]	"ADGRE1"	"CD80"	"CXCR3"	"IL6"
[97]	"NLRP3"	"TBX21"	"ISG15"	"CD83"
[101]	"PPARGC1A"	"CD14"	"GHRL"	"BCL2"
[105]	"H2.AA"	"OAS1B"	"CSF1R"	"PECAM1"
[109]	"BMP7"	"IL7"	"CXCL13"	"CD24A"
[113]	"ICOS"	"CSF2RB"	"RSAD2"	"PTGS2"
[117]	"COL11A1"	"CD40"	"IFIT3"	"OAS2"
[121]	"TNF"	"PPY"	"MX1"	"IL12RB"
[125]	"LCK"	"MAPK8"	"GM13889"	"VAV1"
[129]	"CD86"	"GFAP"	"BMP5"	"COL1A2"
[133]	"CCR6"	"IGF2"	"COL1A1"	"MMP9"
[137]	"MMP2"	"STAT4"	"TNFSF11"	"ZEB2"
[141]	"TNC"	"TLR9"	"DES"	"CXCL10"
[145]	"ITGAX"	"IL1R2"	"PDGFRB"	"IL25"
[149]	"OASL1"	"FAP"	"IL.21"	"MMP3"
[153]	"ZAP70"	"SELE"	"TLR7"	"CD8A"
[157]	"CLEC7A"	"CTLA4"	"FOXP3"	"IL1B"
[161]	"GATA4"	"IL1A"	"ACTA2"	"CCR1"
[165]	"CCR3"	"CCR4"	"CCR5"	"CCR7"
[169]	"CD28"	"CD3E"	"CD4"	"CXCR4"
[173]	"FCGR1"	"IFI44L"	"IFNG"	"IL10"
[177]	"IL12B"	"IL17A"	"IL2"	"IL27"
[181]	"IL2RA"	"IL3"	"IL4"	"IL5"
[185]	"IL5RA"	"IL7R"	"IRF4"	"MMP1A"
[189]	"PD1"	"PPARA"	"RSP01"	"WNT2B"

[1] TRUE

[1] TRUE

[1] TRUE

[1] TRUE

[1] "The panel determined in the 'Panel Detection' tests, in the 'clusterFilter.R' script, is 1 and 3"

[1] "Warning! The panel detected and the panel number input by the user are not the same!"

[1]	"cellSource"	"probe"	"age"	"patient"
[5]	"SPA"	"SPAM"	"SPAMcell"	"cellType"
[9]	"kmeans.cluster"	"TGFB1"	"ITGB1"	"LY6E"
[13]	"PTEN"	"HIF1A"	"GSK3A"	"ICOSL"
[17]	"GSK3B"	"IRF2"	"HPRT"	"JAK1"
[21]	"STAT3"	"TGFB2"	"VEGFA"	"FLT4"

[25]	"SFRP1"	"AIM2"	"TIMP2"	"TLR4"		
[29]	"PTK2"	"STAT1"	"IFNGR1"	"JAK2"		
[33]	"IRF1"	"ACVR1"	"NFKB1"	"TNFAIP3"		
[37]	"IL27R"	"SOCS3"	"GAPDH"	"PDL.1"		
[41]	"IL4RA"	"IL18R1"	"VEGFB"	"VCAM1"		
[45]	"TRAF2"	"IAPP"	"NFATC1"	"TNFRSF1A"		
[49]	"FGFR1"	"PDGFA"	"TLR3"	"CSF1"		
[53]	"PDGFB"	"WNT4"	"ANPEP"	"MAP2K6"		
[57]	"TEK"	"KLF5"	"ANGPT1"	"FYN"		
[61]	"CSF2RA"	"FGR"	"ICAM1"	"CEACAM1"		
[65]	"INS1"	"ICAM2"	"NUR77"	"INS2"		
[69]	"CD74"	"TNFRSF1B"	"PDPN"	"CD36"		
[73]	"CCR2"	"KDR"	"STAT5"	"PPARG"		
[77]	"LY75"	"IL34"	"BCL6"	"CD44"		
[81]	"IFIT1"	"FGFR3"	"SPP1"	"LEPR"		
[85]	"IGF1"	"TIMP1"	"H2.DMA"	"EGFR"		
[89]	"IRF7"	"GCG"	"SST"	"IFI44"		
[93]	"ADGRE1"	"CD80"	"CXCR3"	"IL6"		
[97]	"NLRP3"	"TBX21"	"ISG15"	"CD83"		
[101]	"PPARGC1A"	"CD14"	"GHRL"	"BCL2"		
[105]	"H2.AA"	"OAS1B"	"CSF1R"	"PECAM1"		
[109]	"BMP7"	"IL7"	"CXCL13"	"CD24A"		
[113]	"ICOS"	"CSF2RB"	"RSAD2"	"PTGS2"		
[117]	"COL11A1"	"CD40"	"IFIT3"	"OAS2"		
[121]	"TNF"	"PPY"	"MX1"	"IL12RB"		
[125]	"LCK"	"MAPK8"	"GM13889"	"VAV1"		
[129]	"CD86"	"GFAP"	"BMP5"	"COL1A2"		
[133]	"CCR6"	"IGF2"	"COL1A1"	"MMP9"		
[137]	"MMP2"	"STAT4"	"TNFSF11"	"ZEB2"		
[141]	"TNC"	"TLR9"	"DES"	"CXCL10"		
[145]	"ITGAX"	"IL1R2"	"PDGFRB"	"IL25"		
[149]	"OASL1"	"FAP"	"IL.21"	"MMP3"		
[153]	"ZAP70"	"SELE"	"TLR7"	"CD8A"		
[157]	"CLEC7A"	"CTLA4"	"FOXP3"	"IL1B"		
[161]	"GATA4"	"IL1A"	"ACTA2"	"CCR1"		
[165]	"CCR3"	"CCR4"	"CCR5"	"CCR7"		
[169]	"CD28"	"CD3E"	"CD4"	"CXCR4"		
[173]	"FCGR1"	"IFI44L"	"IFNG"	"IL10"		
[177]	"IL12B"	"IL17A"	"IL2"	"IL27"		
[181]	"IL2RA"	"IL3"	"IL4"	"IL5"		
[185]	"IL5RA"	"IL7R"	"IRF4"	"MMP1A"		
[189]	"PD1"	"PPARA"	"RSP01"	"WNT2B"		
[1]	"Which genes are dashed in the panel? H2-AA H2-DMA IL-21 PDL-1"					
[1]	"Test 1 is FALSE"					
[1]	"Test 2 is FALSE"					
[1]	"Test1and2 is TRUE"					
[1]	"Test3 is FALSE"					
[1]	"The first column you'll pull is: TGFB1"					
[1]	"The last column you'll pull is: WNT2B"					
[1]	"TGFB1"	"ITGB1"	"LY6E"	"PTEN"	"HIF1A"	"GSK3A"
[7]	"ICOSL"	"GSK3B"	"IRF2"	"HPRT"	"JAK1"	"STAT3"
[13]	"TGFB2"	"VEGFA"	"FLT4"	"SFRP1"	"AIM2"	"TIMP2"
[19]	"TLR4"	"PTK2"	"STAT1"	"IFNGR1"	"JAK2"	"IRF1"
[25]	"ACVR1"	"NFKB1"	"TNFAIP3"	"IL27R"	"SOCS3"	"GAPDH"

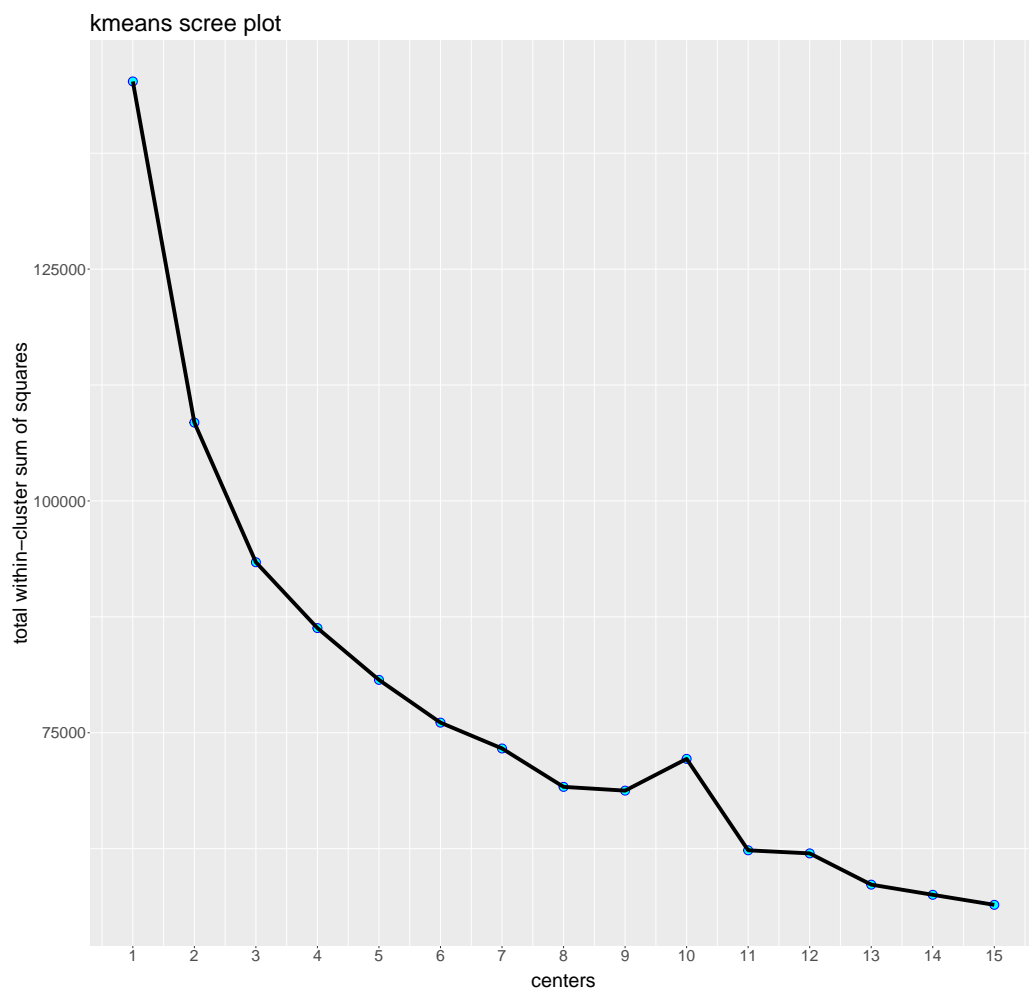
[31]	"PDL-1"	"IL4RA"	"IL18R1"	"VEGFB"	"VCAM1"	"TRAF2"
[37]	"IAPP"	"NFATC1"	"TNFRSF1A"	"FGFR1"	"PDGFA"	"TLR3"
[43]	"CSF1"	"PDGFB"	"WNT4"	"ANPEP"	"MAP2K6"	"TEK"
[49]	"KLF5"	"ANGPT1"	"FYN"	"CSF2RA"	"FGR"	"ICAM1"
[55]	"CEACAM1"	"INS1"	"ICAM2"	"NUR77"	"INS2"	"CD74"
[61]	"TNFRSF1B"	"PDPN"	"CD36"	"CCR2"	"KDR"	"STAT5"
[67]	"PPARG"	"LY75"	"IL34"	"BCL6"	"CD44"	"IFIT1"
[73]	"FGFR3"	"SPP1"	"LEPR"	"IGF1"	"TIMP1"	"H2-DMA"
[79]	"EGFR"	"IRF7"	"GCG"	"SST"	"IFI44"	"ADGRE1"
[85]	"CD80"	"CXCR3"	"IL6"	"NLRP3"	"TBX21"	"ISG15"
[91]	"CD83"	"PPARGC1A"	"CD14"	"GHRL"	"BCL2"	"H2-AA"
[97]	"OAS1B"	"CSF1R"	"PECAM1"	"BMP7"	"IL7"	"CXCL13"
[103]	"CD24A"	"ICOS"	"CSF2RB"	"RSAD2"	"PTGS2"	"COL11A1"
[109]	"CD40"	"IFIT3"	"OAS2"	"TNF"	"PPY"	"MX1"
[115]	"IL12RB"	"LCK"	"MAPK8"	"GM13889"	"VAV1"	"CD86"
[121]	"GFAP"	"BMP5"	"COL1A2"	"CCR6"	"IGF2"	"COL1A1"
[127]	"MMP9"	"MMP2"	"STAT4"	"TNFSF11"	"ZEB2"	"TNC"
[133]	"TLR9"	"DES"	"CXCL10"	"ITGAX"	"IL1R2"	"PDGFRB"
[139]	"IL25"	"OASL1"	"FAP"	"IL-21"	"MMP3"	"ZAP70"
[145]	"SELE"	"TLR7"	"CD8A"	"CLEC7A"	"CTLA4"	"FOXP3"
[151]	"IL1B"	"GATA4"	"IL1A"	"ACTA2"	"CCR1"	"CCR3"
[157]	"CCR4"	"CCR5"	"CCR7"	"CD28"	"CD3E"	"CD4"
[163]	"CXCR4"	"FCGR1"	"IFI44L"	"IFNG"	"IL10"	"IL12B"
[169]	"IL17A"	"IL2"	"IL27"	"IL2RA"	"IL3"	"IL4"
[175]	"IL5"	"IL5RA"	"IL7R"	"IRF4"	"MMP1A"	"PD1"
[181]	"PPARA"	"RSP01"	"WNT2B"			

[1] "PanelNumber equals: 1 and 3 . Columns to be sent for kmeans testing: TGFBI and WNT2B"

[1] "Column names after searching for the column pattern and after selecting the right columns. The fol

[1]	"TGFB1"	"ITGB1"	"LY6E"	"PTEN"	"HIF1A"	"GSK3A"
[7]	"ICOSL"	"GSK3B"	"IRF2"	"HPRT"	"JAK1"	"STAT3"
[13]	"TGFB2"	"VEGFA"	"FLT4"	"SFRP1"	"AIM2"	"TIMP2"
[19]	"TLR4"	"PTK2"	"STAT1"	"IFNGR1"	"JAK2"	"IRF1"
[25]	"ACVR1"	"NFKB1"	"TNFAIP3"	"IL27R"	"SOCS3"	"GAPDH"
[31]	"PDL-1"	"IL4RA"	"IL18R1"	"VEGFB"	"VCAM1"	"TRAF2"
[37]	"IAPP"	"NFATC1"	"TNFRSF1A"	"FGFR1"	"PDGFA"	"TLR3"
[43]	"CSF1"	"PDGFB"	"WNT4"	"ANPEP"	"MAP2K6"	"TEK"
[49]	"KLF5"	"ANGPT1"	"FYN"	"CSF2RA"	"FGR"	"ICAM1"
[55]	"CEACAM1"	"INS1"	"ICAM2"	"NUR77"	"INS2"	"CD74"
[61]	"TNFRSF1B"	"PDPN"	"CD36"	"CCR2"	"KDR"	"STAT5"
[67]	"PPARG"	"LY75"	"IL34"	"BCL6"	"CD44"	"IFIT1"
[73]	"FGFR3"	"SPP1"	"LEPR"	"IGF1"	"TIMP1"	"H2-DMA"
[79]	"EGFR"	"IRF7"	"GCG"	"SST"	"IFI44"	"ADGRE1"
[85]	"CD80"	"CXCR3"	"IL6"	"NLRP3"	"TBX21"	"ISG15"
[91]	"CD83"	"PPARGC1A"	"CD14"	"GHRL"	"BCL2"	"H2-AA"
[97]	"OAS1B"	"CSF1R"	"PECAM1"	"BMP7"	"IL7"	"CXCL13"
[103]	"CD24A"	"ICOS"	"CSF2RB"	"RSAD2"	"PTGS2"	"COL11A1"
[109]	"CD40"	"IFIT3"	"OAS2"	"TNF"	"PPY"	"MX1"
[115]	"IL12RB"	"LCK"	"MAPK8"	"GM13889"	"VAV1"	"CD86"
[121]	"GFAP"	"BMP5"	"COL1A2"	"CCR6"	"IGF2"	"COL1A1"
[127]	"MMP9"	"MMP2"	"STAT4"	"TNFSF11"	"ZEB2"	"TNC"
[133]	"TLR9"	"DES"	"CXCL10"	"ITGAX"	"IL1R2"	"PDGFRB"
[139]	"IL25"	"OASL1"	"FAP"	"IL-21"	"MMP3"	"ZAP70"
[145]	"SELE"	"TLR7"	"CD8A"	"CLEC7A"	"CTLA4"	"FOXP3"
[151]	"IL1B"	"GATA4"	"IL1A"	"ACTA2"	"CCR1"	"CCR3"

[157]	"CCR4"	"CCR5"	"CCR7"	"CD28"	"CD3E"	"CD4"
[163]	"CXCR4"	"FCGR1"	"IFI44L"	"IFNG"	"IL10"	"IL12B"
[169]	"IL17A"	"IL2"	"IL27"	"IL2RA"	"IL3"	"IL4"
[175]	"IL5"	"IL5RA"	"IL7R"	"IRF4"	"MMP1A"	"PD1"
[181]	"PPARA"	"RSP01"	"WNT2B"			



```
[1] "Column Names for ctClust after adding the 'normFit$cluster' to the dataframe are: "
```

```
[1] "cellSource"      "probe"           "age"             "patient"
```



[5]	"SPA"	"SPAM"	"SPAMcell"	"cellType"
[9]	"kmeans.cluster"	"TGFB1"	"ITGB1"	"LY6E"
[13]	"PTEN"	"HIF1A"	"GSK3A"	"ICOSL"
[17]	"GSK3B"	"IRF2"	"HPRT"	"JAK1"
[21]	"STAT3"	"TGFB2"	"VEGFA"	"FLT4"
[25]	"SFRP1"	"AIM2"	"TIMP2"	"TLR4"
[29]	"PTK2"	"STAT1"	"IFNGR1"	"JAK2"
[33]	"IRF1"	"ACVR1"	"NFKB1"	"TNFAIP3"
[37]	"IL27R"	"SOCS3"	"GAPDH"	"PDL-1"
[41]	"IL4RA"	"IL18R1"	"VEGFB"	"VCAM1"
[45]	"TRAF2"	"IAPP"	"NFATC1"	"TNFRSF1A"
[49]	"FGFR1"	"PDGFA"	"TLR3"	"CSF1"
[53]	"PDGFB"	"WNT4"	"ANPEP"	"MAP2K6"
[57]	"TEK"	"KLF5"	"ANGPT1"	"FYN"
[61]	"CSF2RA"	"FGR"	"ICAM1"	"CEACAM1"
[65]	"INS1"	"ICAM2"	"NUR77"	"INS2"
[69]	"CD74"	"TNFRSF1B"	"PDPN"	"CD36"
[73]	"CCR2"	"KDR"	"STAT5"	"PPARG"
[77]	"LY75"	"IL34"	"BCL6"	"CD44"
[81]	"IFIT1"	"FGFR3"	"SPP1"	"LEPR"
[85]	"IGF1"	"TIMP1"	"H2-DMA"	"EGFR"
[89]	"IRF7"	"GCG"	"SST"	"IFI44"
[93]	"ADGRE1"	"CD80"	"CXCR3"	"IL6"
[97]	"NLRP3"	"TBX21"	"ISG15"	"CD83"
[101]	"PPARGC1A"	"CD14"	"GHRL"	"BCL2"
[105]	"H2-AA"	"OAS1B"	"CSF1R"	"PECAM1"
[109]	"BMP7"	"IL7"	"CXCL13"	"CD24A"
[113]	"ICOS"	"CSF2RB"	"RSAD2"	"PTGS2"
[117]	"COL11A1"	"CD40"	"IFIT3"	"OAS2"
[121]	"TNF"	"PPY"	"MX1"	"IL12RB"
[125]	"LCK"	"MAPK8"	"GM13889"	"VAV1"
[129]	"CD86"	"GFAP"	"BMP5"	"COL1A2"
[133]	"CCR6"	"IGF2"	"COL1A1"	"MMP9"
[137]	"MMP2"	"STAT4"	"TNFSF11"	"ZEB2"
[141]	"TNC"	"TLR9"	"DES"	"CXCL10"
[145]	"ITGAX"	"IL1R2"	"PDGFRB"	"IL25"
[149]	"OASL1"	"FAP"	"IL-21"	"MMP3"
[153]	"ZAP70"	"SELE"	"TLR7"	"CD8A"
[157]	"CLEC7A"	"CTLA4"	"FOXP3"	"IL1B"
[161]	"GATA4"	"IL1A"	"ACTA2"	"CCR1"
[165]	"CCR3"	"CCR4"	"CCR5"	"CCR7"
[169]	"CD28"	"CD3E"	"CD4"	"CXCR4"
[173]	"FCGR1"	"IFI44L"	"IFNG"	"IL10"
[177]	"IL12B"	"IL17A"	"IL2"	"IL27"
[181]	"IL2RA"	"IL3"	"IL4"	"IL5"
[185]	"IL5RA"	"IL7R"	"IRF4"	"MMP1A"
[189]	"PD1"	"PPARA"	"RSP01"	"WNT2B"
[193]	"normFit\$cluster"			
[1]	"Column Numbers for ctClust after moving around the columns:"			
[1]	"cellSource"	"probe"	"age"	"patient"
[5]	"SPA"	"SPAM"	"SPAMcell"	"cellType"
[9]	"kmeans.cluster"	"TGFB1"	"ITGB1"	"LY6E"
[13]	"PTEN"	"HIF1A"	"GSK3A"	"ICOSL"
[17]	"GSK3B"	"IRF2"	"HPRT"	"JAK1"

[21]	"STAT3"	"TGFB2"	"VEGFA"	"FLT4"
[25]	"SFRP1"	"AIM2"	"TIMP2"	"TLR4"
[29]	"PTK2"	"STAT1"	"IFNGR1"	"JAK2"
[33]	"IRF1"	"ACVR1"	"NFKB1"	"TNFAIP3"
[37]	"IL27R"	"SOCS3"	"GAPDH"	"PDL-1"
[41]	"IL4RA"	"IL18R1"	"VEGFB"	"VCAM1"
[45]	"TRAF2"	"IAPP"	"NFATC1"	"TNFRSF1A"
[49]	"FGFR1"	"PDGFA"	"TLR3"	"CSF1"
[53]	"PDGFB"	"WNT4"	"ANPEP"	"MAP2K6"
[57]	"TEK"	"KLF5"	"ANGPT1"	"FYN"
[61]	"CSF2RA"	"FGR"	"ICAM1"	"CEACAM1"
[65]	"INS1"	"ICAM2"	"NUR77"	"INS2"
[69]	"CD74"	"TNFRSF1B"	"PDPN"	"CD36"
[73]	"CCR2"	"KDR"	"STAT5"	"PPARG"
[77]	"LY75"	"IL34"	"BCL6"	"CD44"
[81]	"IFIT1"	"FGFR3"	"SPP1"	"LEPR"
[85]	"IGF1"	"TIMP1"	"H2-DMA"	"EGFR"
[89]	"IRF7"	"GCG"	"SST"	"IFI44"
[93]	"ADGRE1"	"CD80"	"CXCR3"	"IL6"
[97]	"NLRP3"	"TBX21"	"ISG15"	"CD83"
[101]	"PPARGC1A"	"CD14"	"GHRL"	"BCL2"
[105]	"H2-AA"	"OAS1B"	"CSF1R"	"PECAM1"
[109]	"BMP7"	"IL7"	"CXCL13"	"CD24A"
[113]	"ICOS"	"CSF2RB"	"RSAD2"	"PTGS2"
[117]	"COL11A1"	"CD40"	"IFIT3"	"OAS2"
[121]	"TNF"	"PPY"	"MX1"	"IL12RB"
[125]	"LCK"	"MAPK8"	"GM13889"	"VAV1"
[129]	"CD86"	"GFAP"	"BMP5"	"COL1A2"
[133]	"CCR6"	"IGF2"	"COL1A1"	"MMP9"
[137]	"MMP2"	"STAT4"	"TNFSF11"	"ZEB2"
[141]	"TNC"	"TLR9"	"DES"	"CXCL10"
[145]	"ITGAX"	"IL1R2"	"PDGFRB"	"IL25"
[149]	"OASL1"	"FAP"	"IL-21"	"MMP3"
[153]	"ZAP70"	"SELE"	"TLR7"	"CD8A"
[157]	"CLEC7A"	"CTLA4"	"FOXP3"	"IL1B"
[161]	"GATA4"	"IL1A"	"ACTA2"	"CCR1"
[165]	"CCR3"	"CCR4"	"CCR5"	"CCR7"
[169]	"CD28"	"CD3E"	"CD4"	"CXCR4"
[173]	"FCGR1"	"IFI44L"	"IFNG"	"IL10"
[177]	"IL12B"	"IL17A"	"IL2"	"IL27"
[181]	"IL2RA"	"IL3"	"IL4"	"IL5"
[185]	"IL5RA"	"IL7R"	"IRF4"	"MMP1A"
[189]	"PD1"	"PPARA"	"RSP01"	"WNT2B"

[1] "The values in lengthofkmeans is: 9"

[1] "The length of lengthofkmeans object is 1"

[1] "When heatmapfactor is set to 'kmeans.cluster', the first column being pulled is kmeans.cluster"

[1] "Value loaded into idCols: 9 which corresponds to column kmeans.cluster. The last column name is: W"

[1]	"cellSource"	"probe"	"age"	"patient"
[5]	"SPA"	"SPAM"	"SPAMcell"	"cellType"
[9]	"kmeans.cluster"	"TGFB1"	"ITGB1"	"LY6E"
[13]	"PTEN"	"HIF1A"	"GSK3A"	"ICOSL"
[17]	"GSK3B"	"IRF2"	"HPRT"	"JAK1"
[21]	"STAT3"	"TGFB2"	"VEGFA"	"FLT4"
[25]	"SFRP1"	"AIM2"	"TIMP2"	"TLR4"

[29]	"PTK2"	"STAT1"	"IFNGR1"	"JAK2"														
[33]	"IRF1"	"ACVR1"	"NFKB1"	"TNFAIP3"														
[37]	"IL27R"	"SOCS3"	"GAPDH"	"PDL-1"														
[41]	"IL4RA"	"IL18R1"	"VEGFB"	"VCAM1"														
[45]	"TRAF2"	"IAPP"	"NFATC1"	"TNFRSF1A"														
[49]	"FGFR1"	"PDGFA"	"TLR3"	"CSF1"														
[53]	"PDGFB"	"WNT4"	"ANPEP"	"MAP2K6"														
[57]	"TEK"	"KLF5"	"ANGPT1"	"FYN"														
[61]	"CSF2RA"	"FGR"	"ICAM1"	"CEACAM1"														
[65]	"INS1"	"ICAM2"	"NUR77"	"INS2"														
[69]	"CD74"	"TNFRSF1B"	"PDPN"	"CD36"														
[73]	"CCR2"	"KDR"	"STAT5"	"PPARG"														
[77]	"LY75"	"IL34"	"BCL6"	"CD44"														
[81]	"IFIT1"	"FGFR3"	"SPP1"	"LEPR"														
[85]	"IGF1"	"TIMP1"	"H2-DMA"	"EGFR"														
[89]	"IRF7"	"GCG"	"SST"	"IFI44"														
[93]	"ADGRE1"	"CD80"	"CXCR3"	"IL6"														
[97]	"NLRP3"	"TBX21"	"ISG15"	"CD83"														
[101]	"PPARGC1A"	"CD14"	"GHRL"	"BCL2"														
[105]	"H2-AA"	"OAS1B"	"CSF1R"	"PECAM1"														
[109]	"BMP7"	"IL7"	"CXCL13"	"CD24A"														
[113]	"ICOS"	"CSF2RB"	"RSAD2"	"PTGS2"														
[117]	"COL11A1"	"CD40"	"IFIT3"	"OAS2"														
[121]	"TNF"	"PPY"	"MX1"	"IL12RB"														
[125]	"LCK"	"MAPK8"	"GM13889"	"VAV1"														
[129]	"CD86"	"GFAP"	"BMP5"	"COL1A2"														
[133]	"CCR6"	"IGF2"	"COL1A1"	"MMP9"														
[137]	"MMP2"	"STAT4"	"TNFSF11"	"ZEB2"														
[141]	"TNC"	"TLR9"	"DES"	"CXCL10"														
[145]	"ITGAX"	"IL1R2"	"PDGFRB"	"IL25"														
[149]	"OASL1"	"FAP"	"IL-21"	"MMP3"														
[153]	"ZAP70"	"SELE"	"TLR7"	"CD8A"														
[157]	"CLEC7A"	"CTLA4"	"FOXP3"	"IL1B"														
[161]	"GATA4"	"IL1A"	"ACTA2"	"CCR1"														
[165]	"CCR3"	"CCR4"	"CCR5"	"CCR7"														
[169]	"CD28"	"CD3E"	"CD4"	"CXCR4"														
[173]	"FCGR1"	"IFI44L"	"IFNG"	"IL10"														
[177]	"IL12B"	"IL17A"	"IL2"	"IL27"														
[181]	"IL2RA"	"IL3"	"IL4"	"IL5"														
[185]	"IL5RA"	"IL7R"	"IRF4"	"MMP1A"														
[189]	"PD1"	"PPARA"	"RSP01"	"WNT2B"														
[1]	2	8	10	6	4	5	9	12	3	11	14	20	18	25	21	31	24	34
[19]	23	29	26	41	30	22	45	36	43	40	49	39	52	56	46	38	51	37
[37]	42	70	66	71	72	79	74	32	91	60	58	97	68	44	27	47	80	81
[55]	82	61	109	111	96	92	78	106	103	95	19	108	54	67	59	110	16	35
[73]	114	83	7	50	113	64	1	13	125	126	63	15	62	101	127	128	93	76
[91]	131	53	55	122	123	75	94	17	48	120	129	130	107	140	139	33	69	115
[109]	116	117	137	136	124	73	119	134	77	135	141	142	143	144	121	132	145	90
[127]	102	65	84	85	86	87	88	89	148	149	150	151	104	152	138	147	118	28
[145]	100	146	105	98	133	153	99	112	57	154	155	156	157	158	159	160	161	162
[163]	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
[181]	181	182	183															
[1]	"Length of pvals is 183"																	
	uniqueAges colorsList																	

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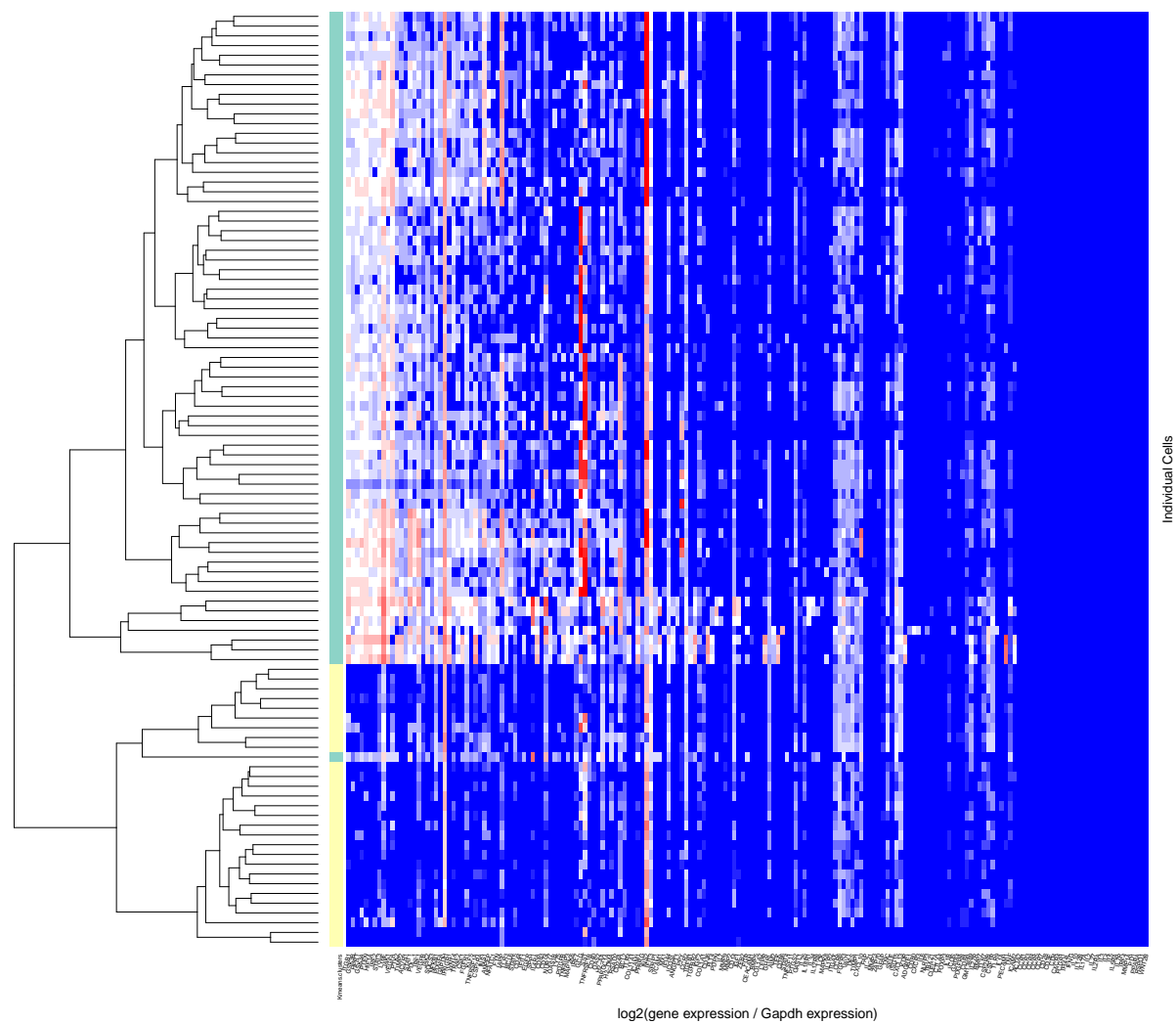
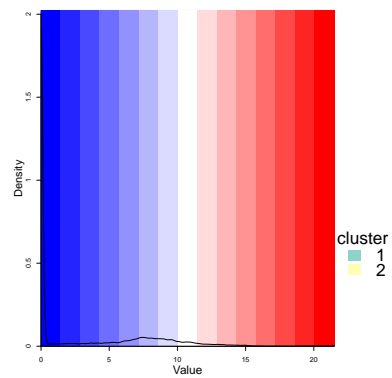
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    [,1]      [,2]
[1,] "islets" "deepskyblue2"
uniqueSources  colorsList
"tissue"      NA
[1] "cellSource" "probe"      "age"      "patient"
[5] "SPA"          "SPAM"      "SPAMcell" "cellType"
[9] "kmeans.cluster" "ITGB1"    "GSK3B"    "HPRT"
[13] "GSK3A"        "PTEN"     "HIF1A"    "IRF2"
[17] "STAT3"        "LY6E"     "JAK1"     "VEGFA"
[21] "PTK2"         "TIMP2"    "ACVR1"    "STAT1"
[25] "PDL-1"        "IRF1"     "VEGFB"    "JAK2"
[29] "SOCS3"        "NFKB1"    "PDGFA"    "GAPDH"
[33] "IFNGR1"       "WNT4"     "TRAF2"    "CSF1"
[37] "FGFR1"        "KLF5"     "TNFRSF1A" "CSF2RA"
[41] "INS1"         "ANPEP"    "NFATC1"   "FYN"
[45] "IAPP"         "TLR3"     "BCL6"     "STAT5"
[49] "CD44"         "IFIT1"    "EGFR"     "SPP1"
[53] "IL4RA"        "CD83"     "CD74"     "NUR77"
[57] "OAS1B"        "LY75"     "PDGFB"    "TNFAIP3"
[61] "MAP2K6"       "IRF7"     "GCG"      "SST"
[65] "TNFRSF1B"     "CD40"     "OAS2"     "H2-AA"
[69] "PPARGC1A"     "H2-DMA"   "RSAD2"    "CD24A"
[73] "BCL2"         "TLR4"     "COL11A1"  "ICAM1"
[77] "PPARG"        "INS2"     "IFIT3"    "SFRP1"
[81] "VCAM1"        "MX1"      "IFI44"    "ICOSL"
[85] "ANGPT1"       "PPY"      "CCR2"     "TGFB1"
[89] "TGFB2"        "IGF2"     "COL1A1"   "CD36"
[93] "FLT4"         "PDPN"     "IL7"      "MMP9"
[97] "MMP2"        "CD14"     "IGF1"     "ZEB2"
[101] "FGR"         "CEACAM1"  "BMP5"     "COL1A2"
[105] "LEPR"        "GHRL"     "AIM2"     "TEK"
[109] "CD86"        "STAT4"    "TNFSF11"  "PTGS2"
[113] "OASL1"       "IL25"     "IL18R1"   "IL34"
[117] "IL12RB"      "LCK"      "MAPK8"    "IL1R2"
[121] "ITGAX"       "CCR6"     "FGFR3"    "VAV1"
[125] "DES"         "TIMP1"    "CXCL10"   "FAP"
[129] "IL-21"       "MMP3"     "ZAP70"    "GFAP"
[133] "TNC"         "SELE"     "ISG15"    "CXCL13"
[137] "KDR"         "ADGRE1"   "CD80"     "CXCR3"
[141] "IL6"         "NLRP3"    "TBX21"    "CLEC7A"
[145] "CTLA4"       "FOXP3"    "IL1B"     "ICOS"
[149] "GATA4"       "PDGFRB"   "CD8A"     "GM13889"
[153] "IL27R"       "BMP7"     "TLR7"     "CSF2RB"
[157] "CSF1R"       "TLR9"     "IL1A"     "PECAM1"
[161] "TNF"         "ICAM2"    "ACTA2"    "CCR1"
[165] "CCR3"        "CCR4"     "CCR5"     "CCR7"
[169] "CD28"        "CD3E"     "CD4"      "CXCR4"
[173] "FCGR1"       "IFI44L"   "IFNG"     "IL10"
[177] "IL12B"       "IL17A"    "IL2"      "IL27"
[181] "IL2RA"       "IL3"      "IL4"      "IL5"
[185] "IL5RA"       "IL7R"     "IRF4"     "MMP1A"
[189] "PD1"         "PPARA"    "RSP01"    "WNT2B"

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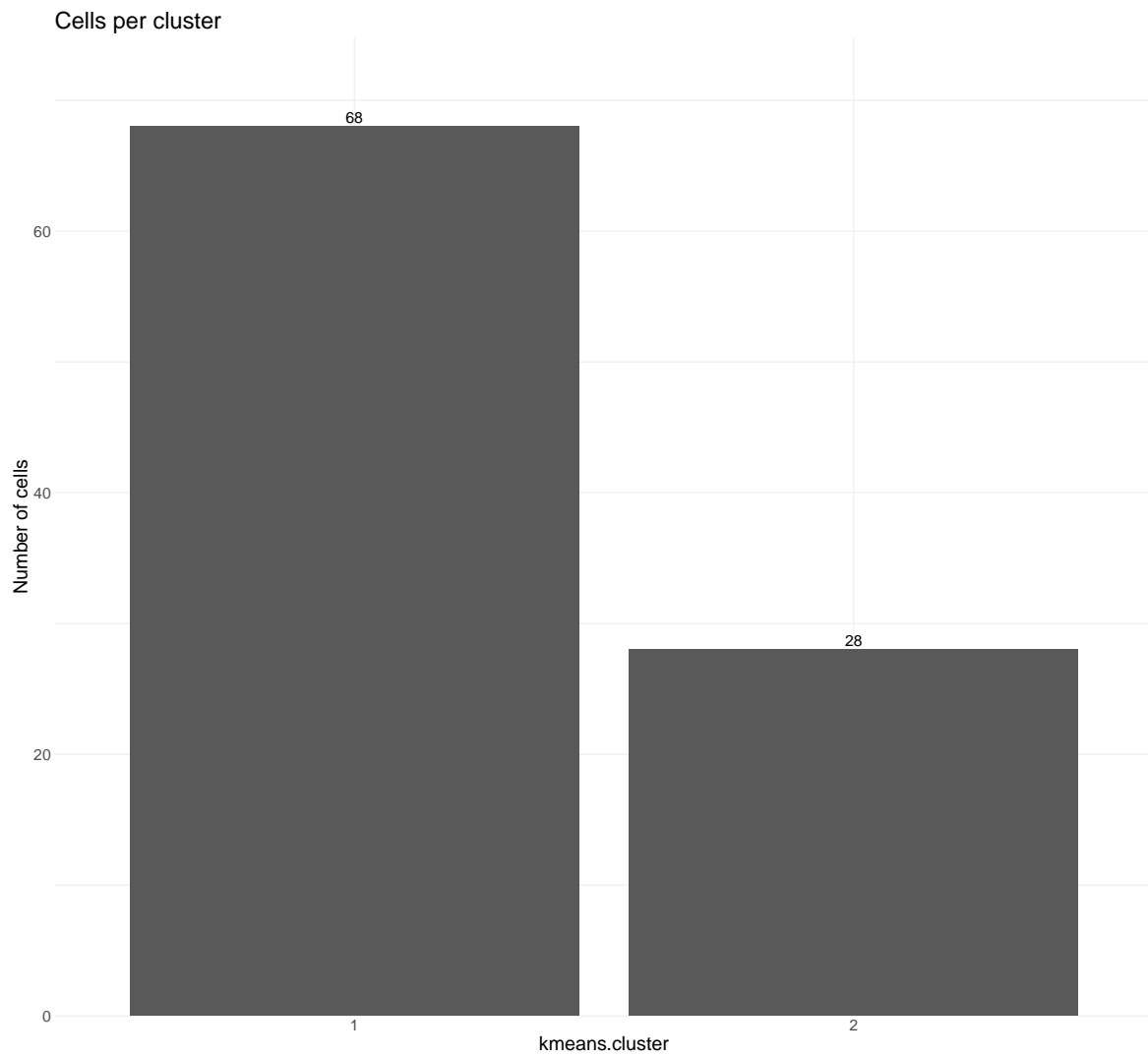
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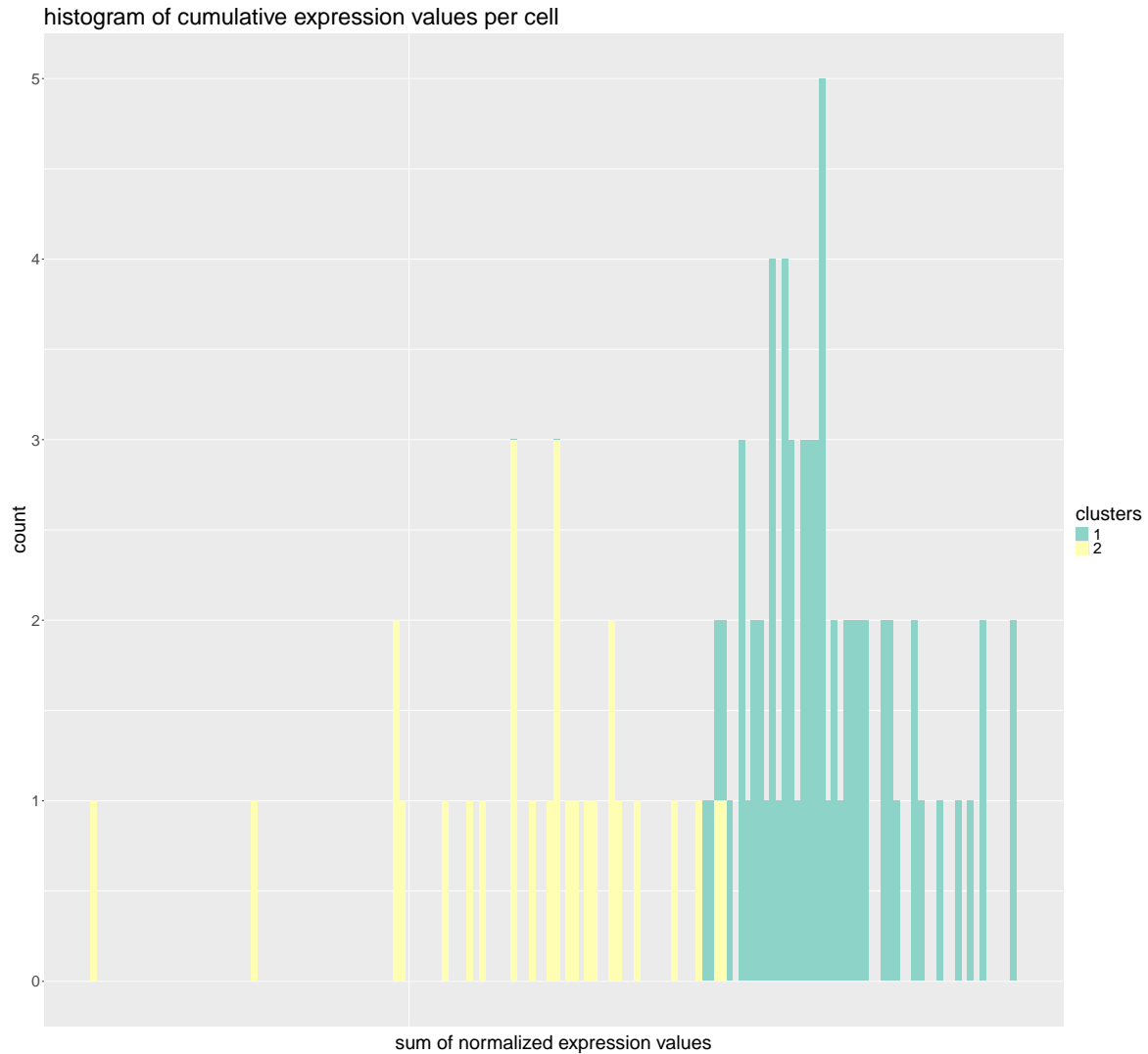
[1] "The value in idCols is 9 and the first column for the heatmap is kmeans.cluster while the last col"

```



Cells per Cluster	n_cells
cluster_1	68
cluster_2	28





#### t-sne reports ####

###This function has been updated from LG's original. The colorby vector can take the following options

```
#ctClust <- plotTSNE(ctClust, colorby = c("kmeans.cluster", "Gene_List"), Genes = c("ACTA2", "ACVR1", "ADAM",
#"CCL13", "CCR1", "CCR2", "CCR3", "CCR4", "CCR5", "CCR6", "CCR7", "CD14", "CD24A", "CD28",
#"CD36", "CD3E", "CD4", "CD40", "CD44", "CD74", "CD80", "CD83", "CD86", "CD8A", "CEACAM1",
#"CLEC7A", "COL11A1", "COL1A1", "COL1A2", "CSF1", "CSF1R", "CSF2RA", "CSF2RB", "CXCL10",
#"CXCL13", "CXCR3", "CXCR4", "DES", "EGFR", "FAP", "FCGR1", "FGFR1", "FGFR3", "FGR", "FYN",
```

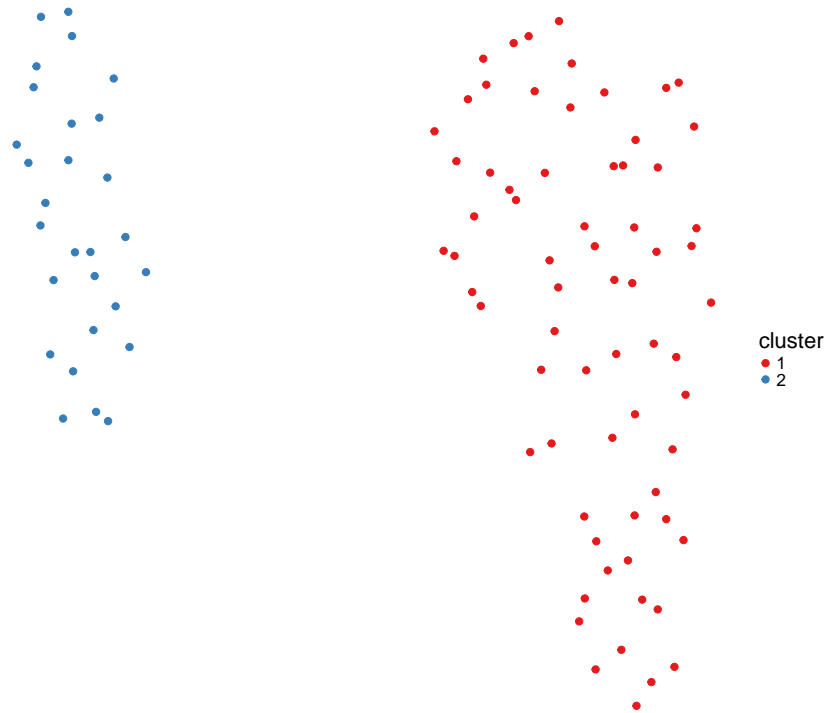
```
#"GAPDH", "GATA4", "GCG", "GFAP", "GHRL", "GM13889", "GSK3A", "GSK3B", "H2-AA", "H2-DMA",
#"HIF1A", "HPRT", "IAPP", "ICAM1", "ICAM2", "ICOS", "ICOSL", "IFIT1", "IFIT3", "IFI44",
#"IFI44L", "IFNG", "IFNGR1", "IGF1", "IGF2", "IL-21", "IL1A", "IL1B", "IL1R2", "IL2", "IL2RA",
#"IL3", "IL4", "IL4RA", "IL5", "IL5RA", "IL6", "IL7", "IL7R", "IL10", "IL12B", "IL12RB", "IL17A",
#"IL18R1", "IL25", "IL27", "IL27R", "IL34", "INS1", "INS2", "IRF1", "IRF2", "IRF4", "IRF7",
#"ISG15", "ITGAX", "ITGB1", "JAK1", "JAK2", "KDR", "KLF5", "LCK", "LEPR", "LY6E", "LY75",
#"MAP2K6", "MAPK8", "MMP1A", "MMP2", "MMP3", "MMP9", "MX1", "NFATC1", "NFKB1", "NLRP3",
#"NUR77", "OAS1B", "OAS2", "OASL1", "PD1", "PDL-1", "PDGFA", "PDGFB", "PDGFRB", "PDPN",
#"PECAM1", "PPARA", "PPARG", "PPARGC1A", "PPY", "PTEN", "PTGS2", "PTK2", "RSAD2", "RSP01",
#"SELE", "SFRP1", "SOCS3", "SPP1", "SST", "STAT1", "STAT3", "STAT4", "STAT5", "TBX21",
#"TEK", "TGFB1", "TGFB2", "TIMP1", "TIMP2", "TLR3", "TLR4", "TLR7", "TLR9", "TNC",
#"TNF", "TNFAIP3", "TNFRSF1A", "TNFRSF1B", "TNFSF11", "TRAF2", "VAV1", "VCAM1", "VEGFA",
#"VEGFB", "WNT2B", "WNT4", "ZAP70", "ZEB2"))
```

```
#ZO edit: Now using UMAP
```

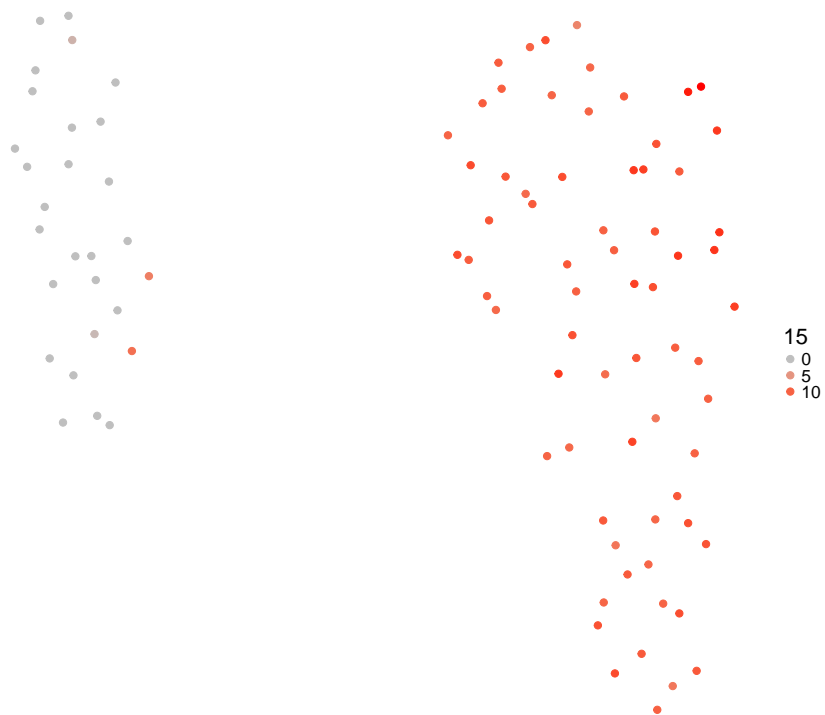
```
ctClust <- plotUMAP(ctClust, colorby = c("kmeans.cluster", "Gene_List"), Genes = c("AIM2", "ACTA2", "ACVR",
"CCR1", "CCR2", "CCR3", "CCR4", "CCR5", "CCR6", "CCR7", "CD14", "CD24A", "CD28", "CD36",
"CD3E", "CD4", "CD40", "CD44", "CD74", "CD80", "CD83", "CD86", "CD8A", "CEACAM1",
"CLEC7A", "COL11A1", "COL1A1", "COL1A2", "CSF1", "CSF1R", "CSF2RA", "CSF2RB",
"CTLA4", "CXCL10", "CXCL13", "CXCR3", "CXCR4", "DES", "EGFR", "FAP", "FCGR1",
"FGFR1", "FGFR3", "FGR", "FLT4", "FOXP3", "FYN", "GAPDH", "GATA4", "GCG", "GFAP",
"GHRL", "GM13889", "GSK3A", "GSK3B", "H2-AA", "H2-DMA", "HIF1A", "HPRT", "IAPP",
"ICAM1", "ICAM2", "ICOS", "ICOSL", "IFI44", "IFI44L", "IFIT1", "IFIT3", "IFNG",
"IFNGR1", "IGF1", "IGF2", "IL-21", "IL10", "IL12B", "IL12RB", "IL17A", "IL18R1",
"IL1A", "IL1B", "IL1R2", "IL2", "IL25", "IL27", "IL27R", "IL2RA", "IL3", "IL34",
"IL4", "IL4RA", "IL5", "IL5RA", "IL6", "IL7", "IL7R", "INS1", "INS2", "IRF1", "IRF2",
"IRF4", "IRF7", "ISG15", "ITGAX", "ITGB1", "JAK1", "JAK2", "KDR", "KLF5", "LCK",
"LEPR", "LY6E", "LY75", "MAP2K6", "MAPK8", "MMP1A", "MMP2", "MMP3", "MMP9", "MX1",
"NFATC1", "NFKB1", "NLRP3", "NUR77", "OAS1B", "OAS2", "OASL1", "PD1", "PDGFA",
"PDGFB", "PDGFRB", "PDL-1", "PDPN", "PECAM1", "PPARA", "PPARG", "PPARGC1A", "PPY",
"PTEN", "PTGS2", "PTK2", "RSAD2", "RSP01", "SELE", "SOCS3", "SFRP1", "SPP1", "SST",
"STAT1", "STAT3", "STAT4", "STAT5", "TEK", "TBX21", "TGFB1", "TGFB2", "TIMP1",
"TIMP2", "TLR3", "TLR4", "TLR7", "TLR9", "TNF", "TNFAIP3", "TNFRSF1A", "TNFRSF1B",
"TNFSF11", "TNC", "TRAF2", "VAV1", "VCAM1", "VEGFA", "VEGFB", "WNT2B", "WNT4",
"ZAP70", "ZEB2"))
```



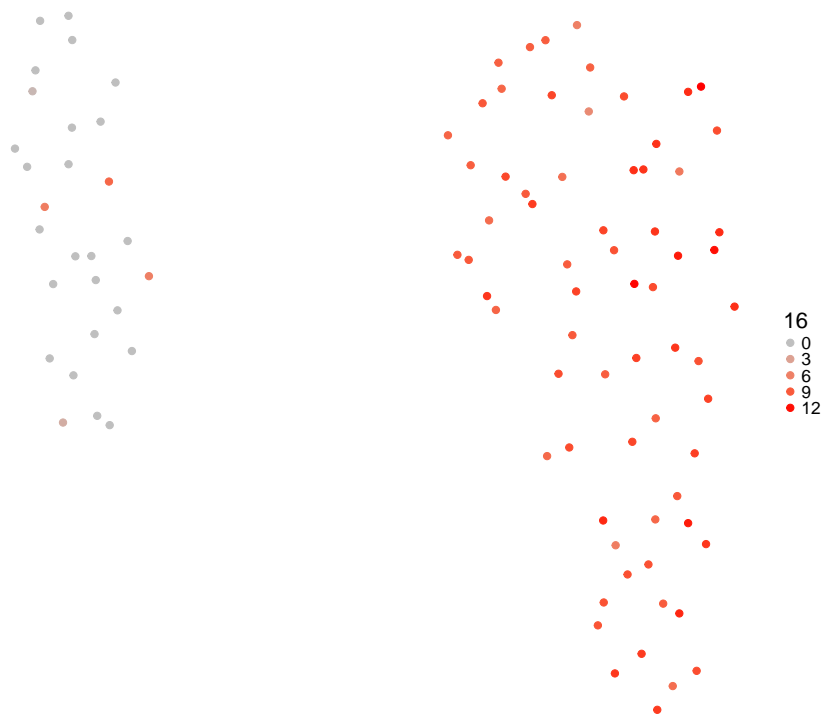
UMAP between tissues (colored by kmeans.cluster)



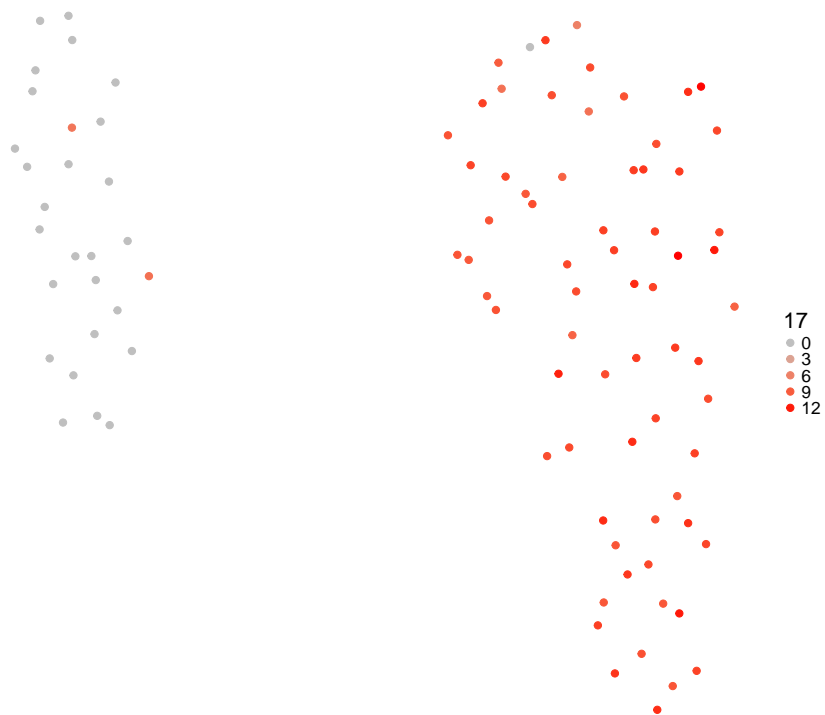
UMAP colored by ITGB1 expression



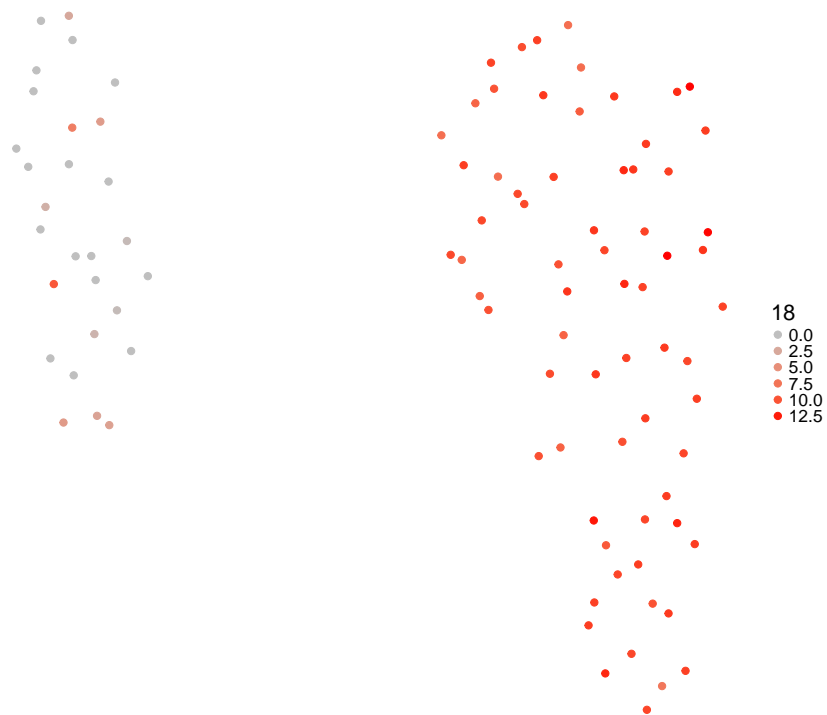
UMAP colored by GSK3B expression



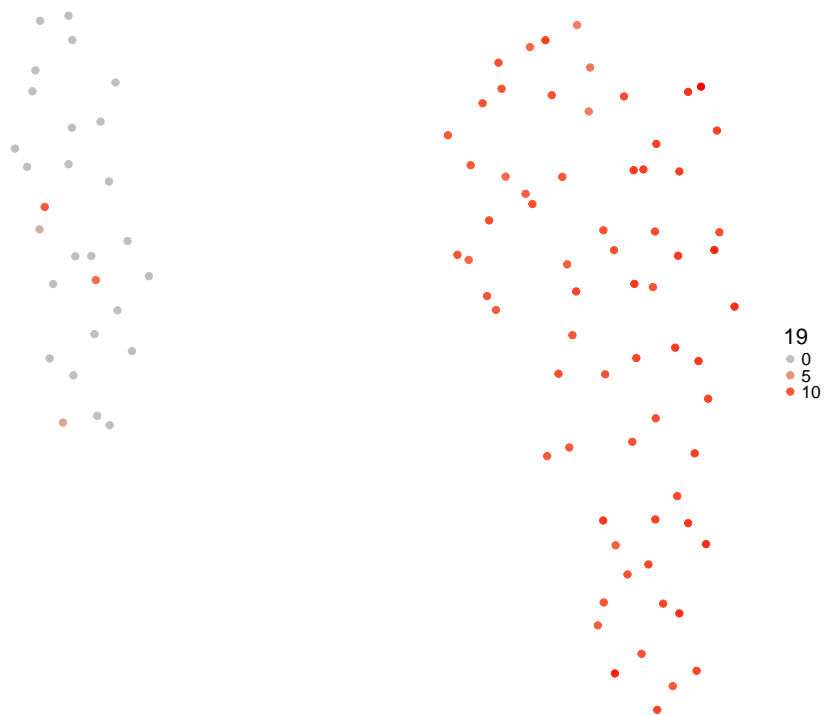
UMAP colored by HPRT expression



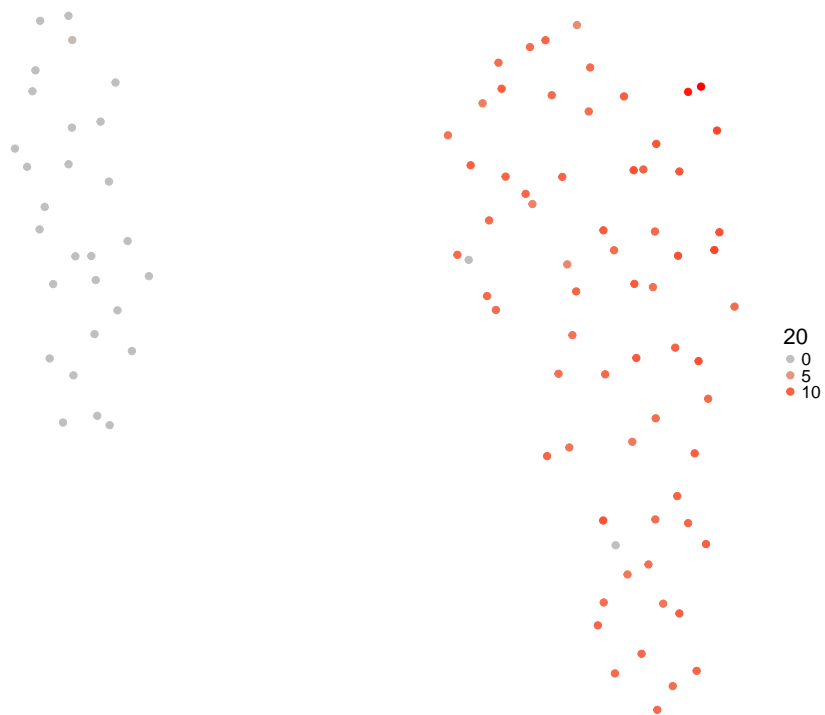
UMAP colored by GSK3A expression



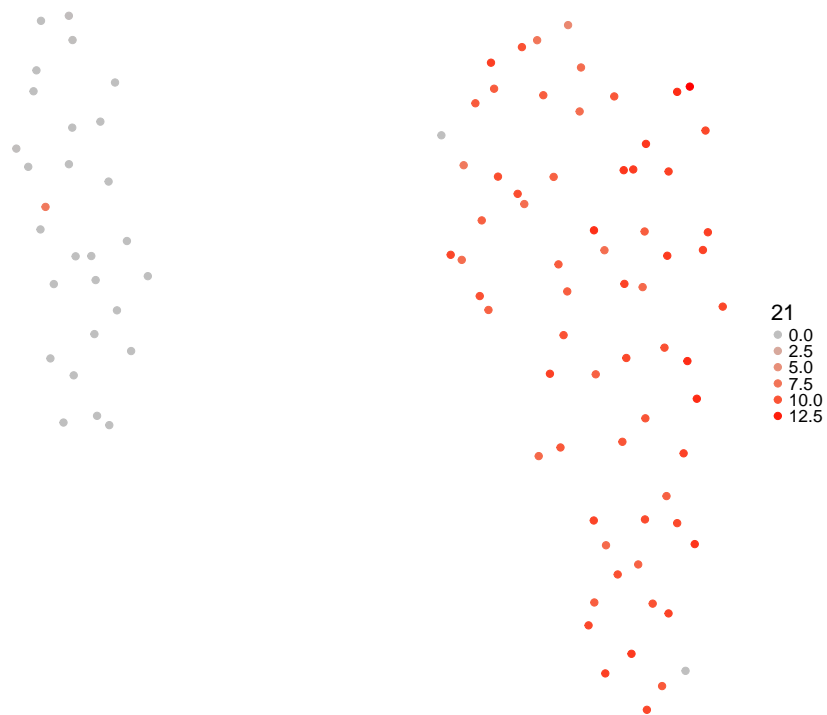
UMAP colored by PTEN expression



UMAP colored by HIF1A expression

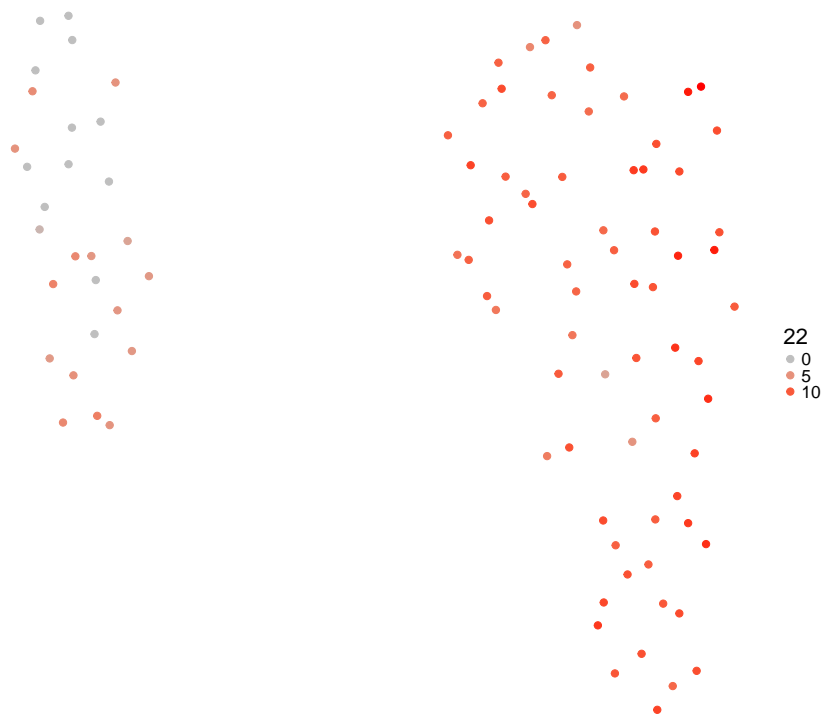


UMAP colored by IRF2 expression

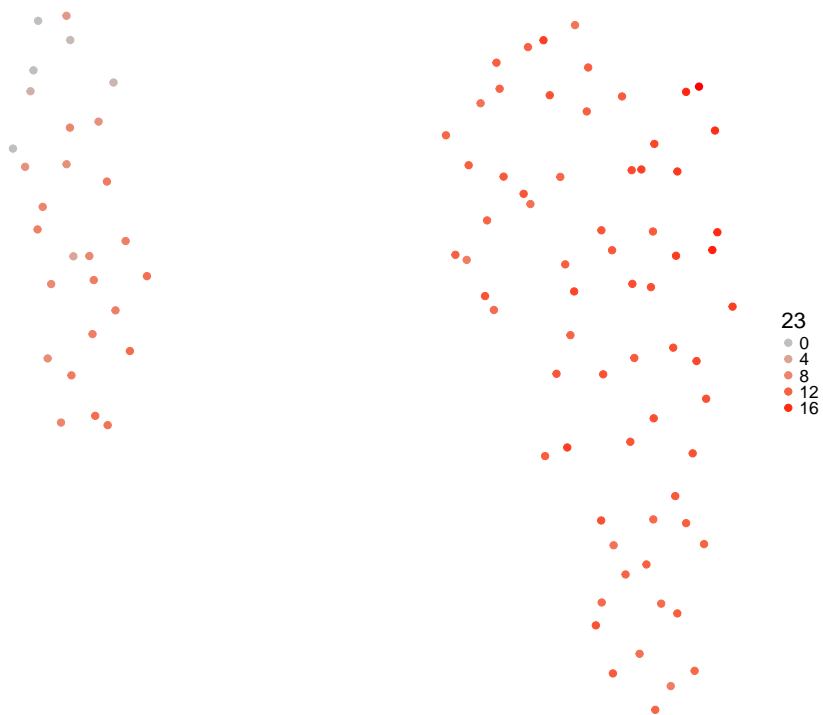




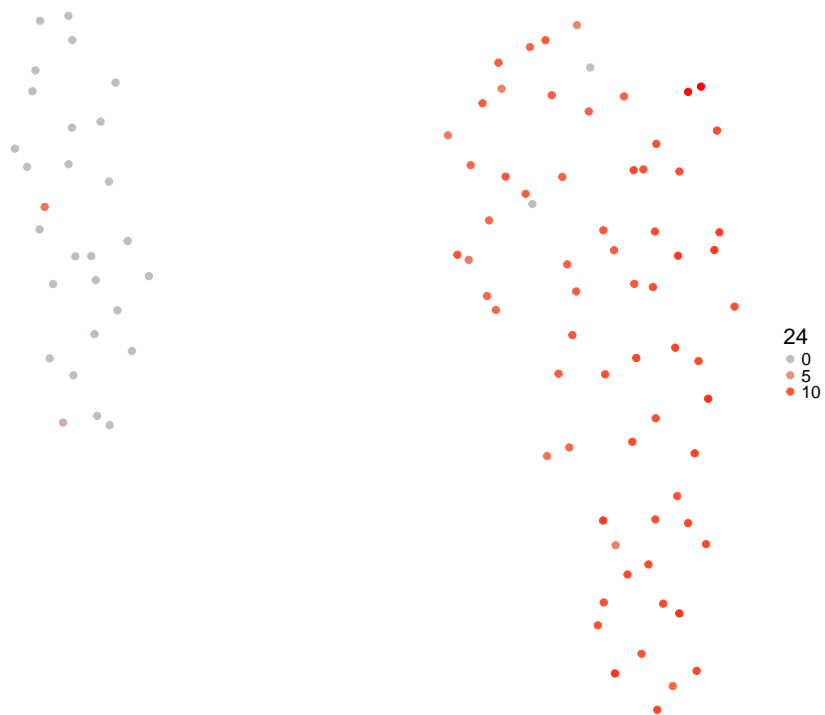
UMAP colored by STAT3 expression



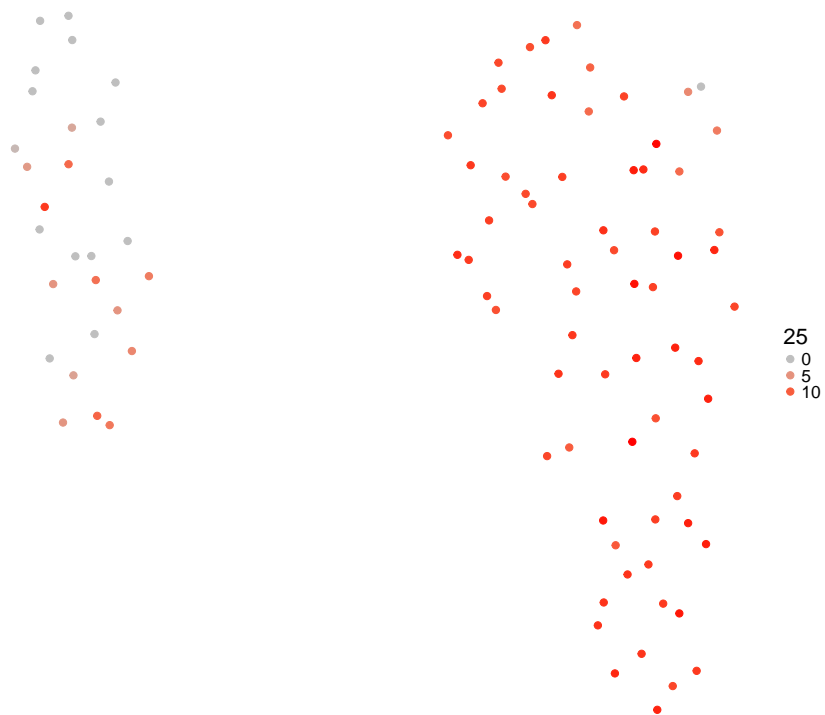
UMAP colored by LY6E expression



UMAP colored by JAK1 expression



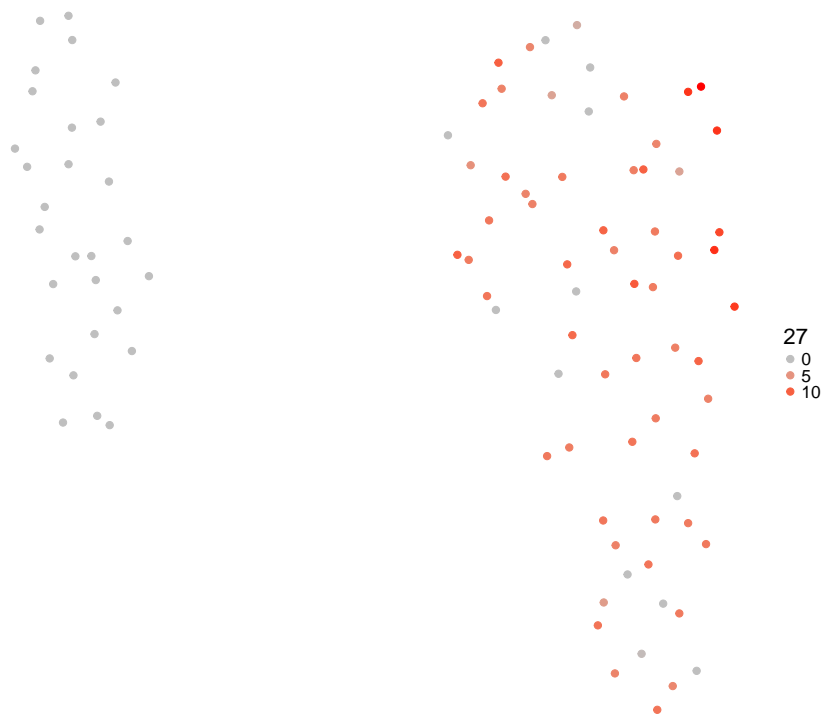
UMAP colored by VEGFA expression



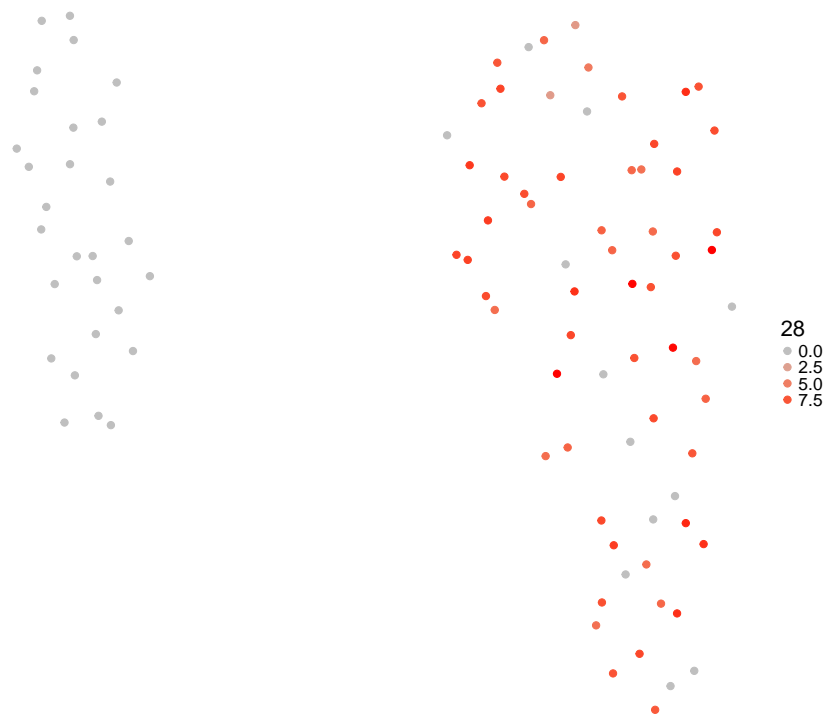
UMAP colored by PTK2 expression



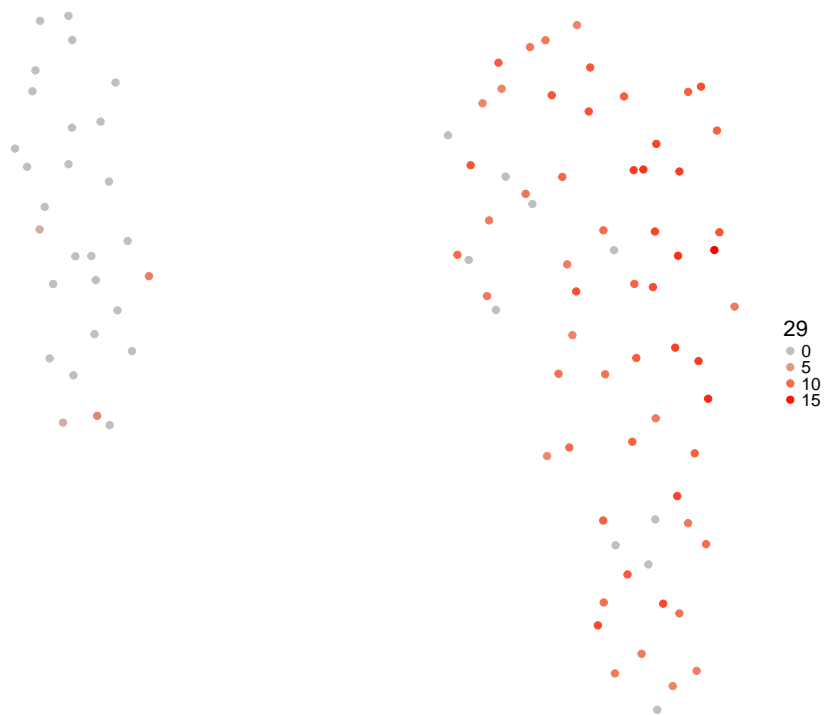
UMAP colored by TIMP2 expression



UMAP colored by ACVR1 expression

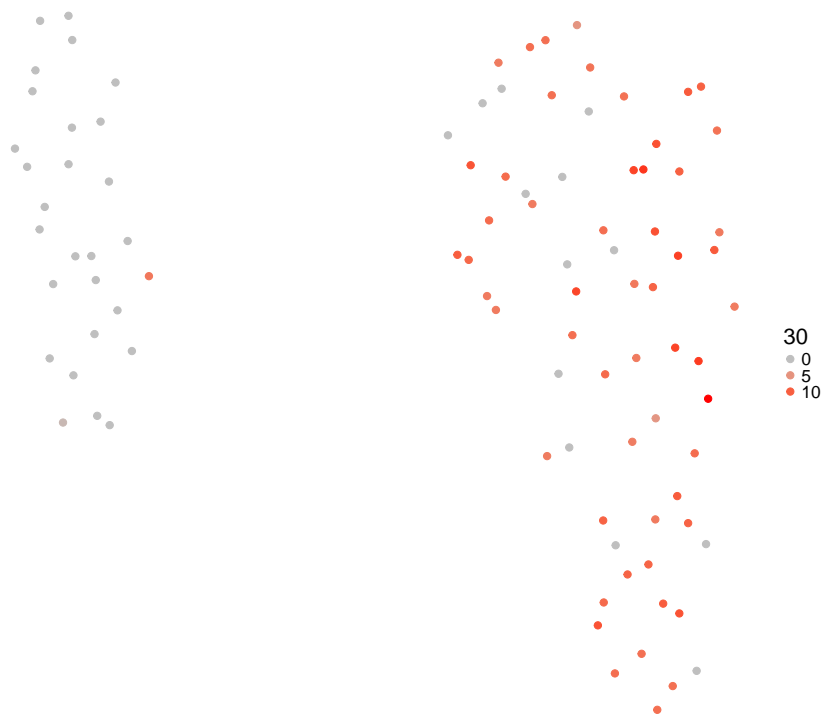


UMAP colored by STAT1 expression

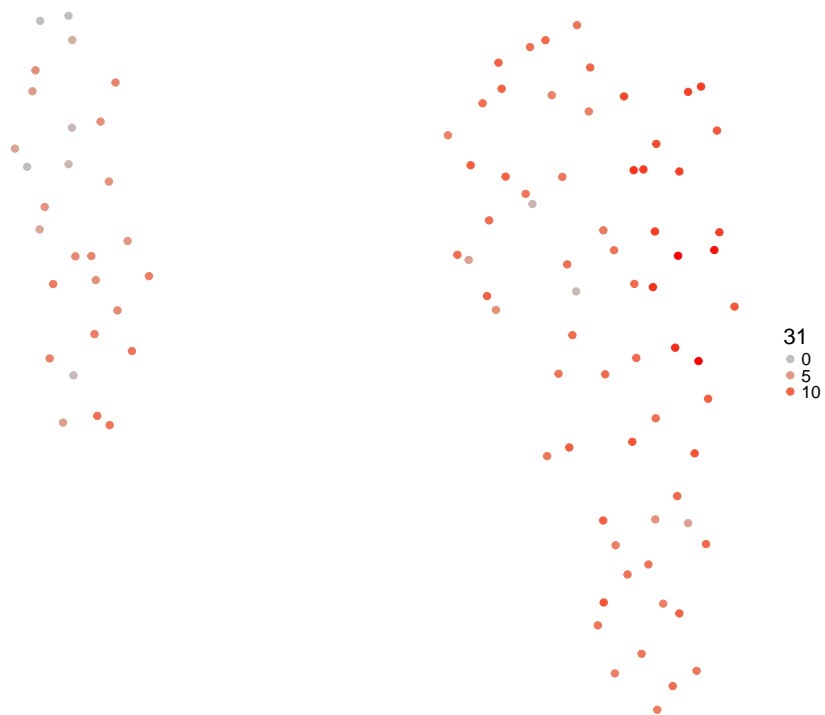




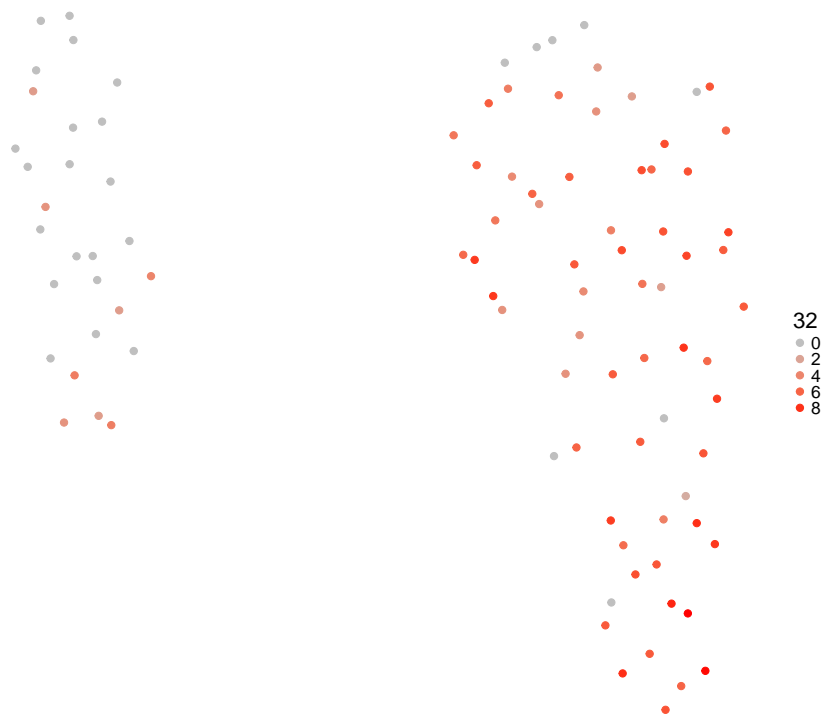
UMAP colored by PDL-1 expression



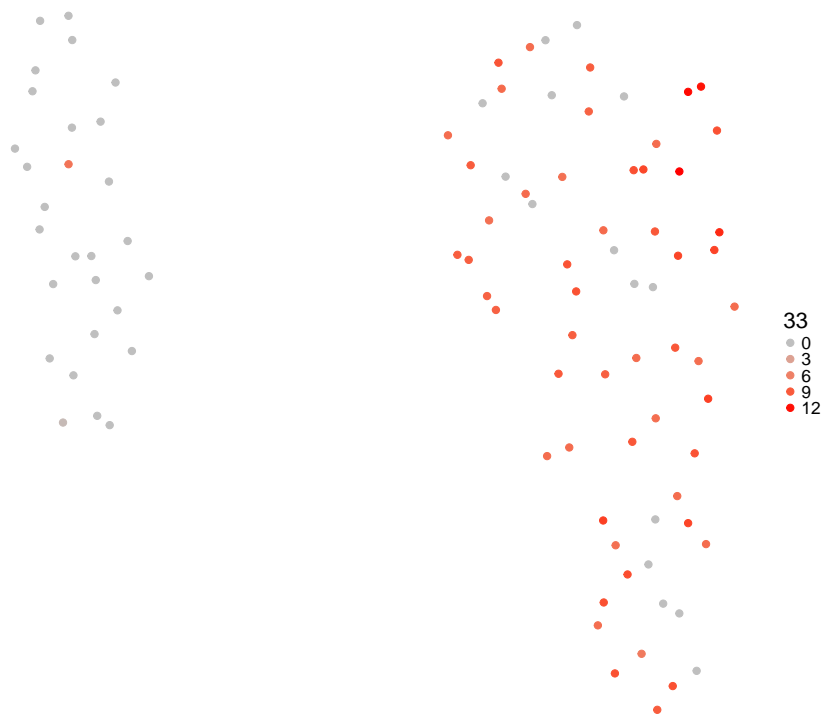
UMAP colored by IRF1 expression



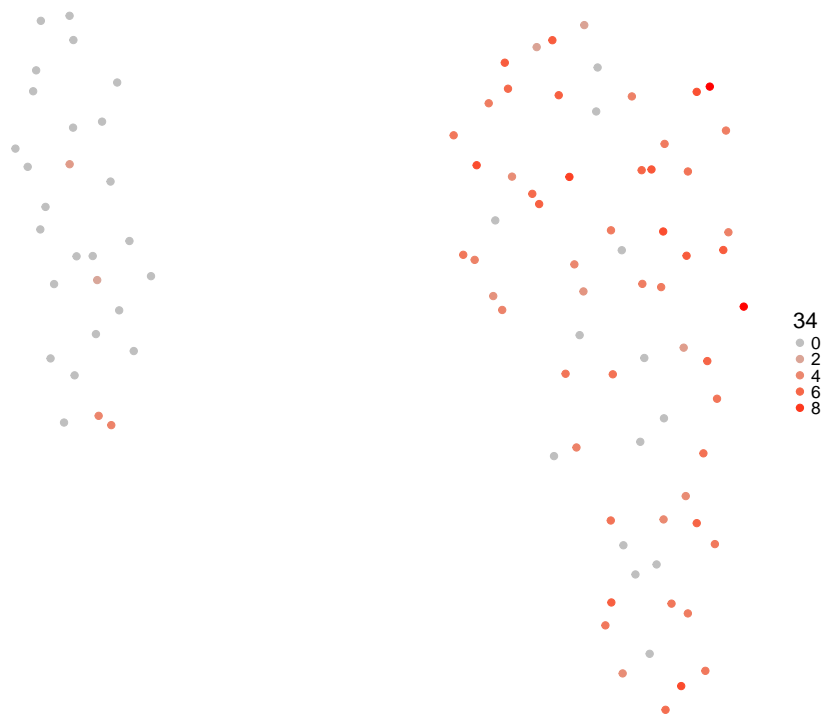
UMAP colored by VEGFB expression



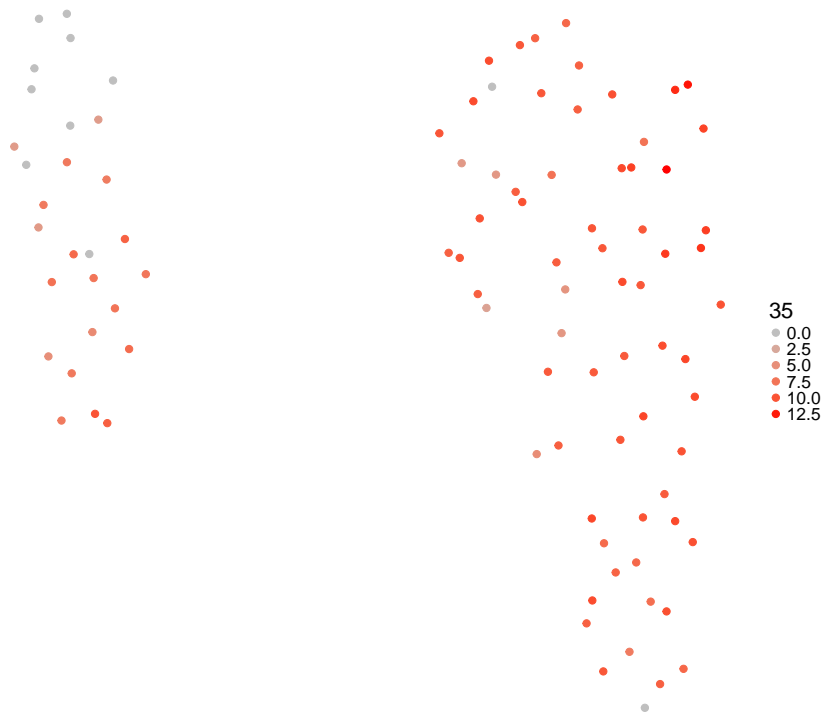
UMAP colored by JAK2 expression



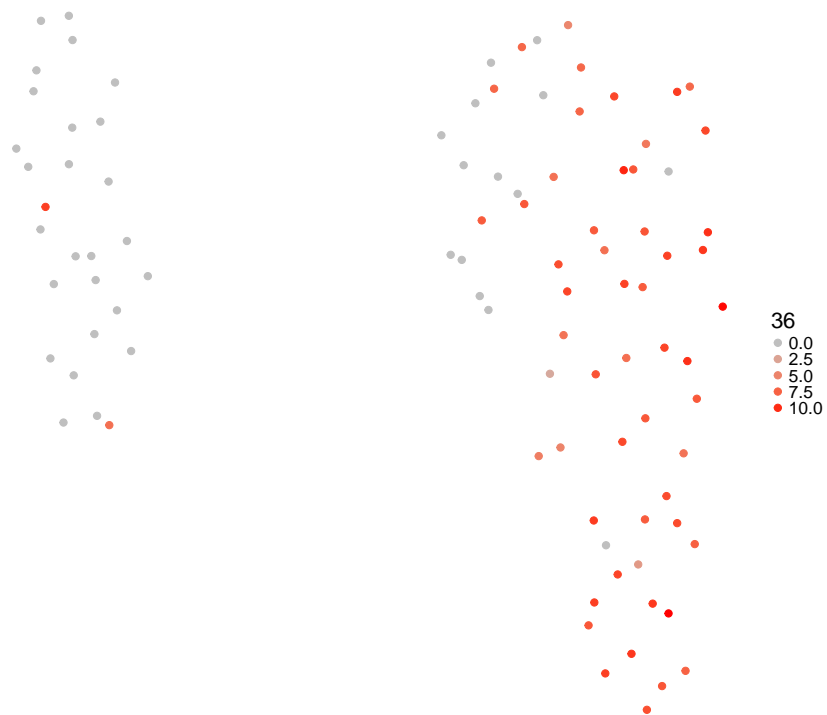
UMAP colored by SOCS3 expression



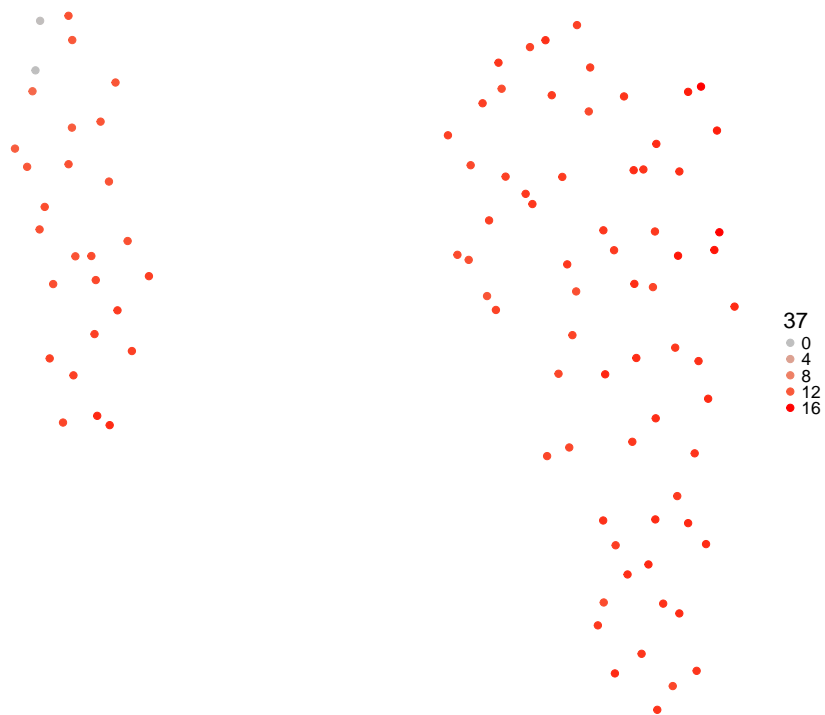
UMAP colored by NFKB1 expression



UMAP colored by PDGFA expression

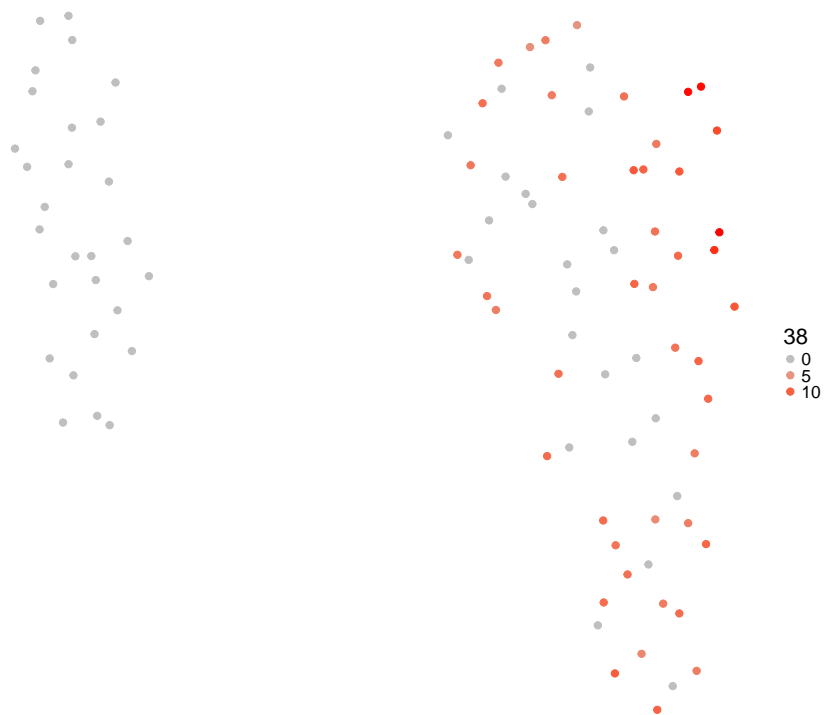


UMAP colored by GAPDH expression

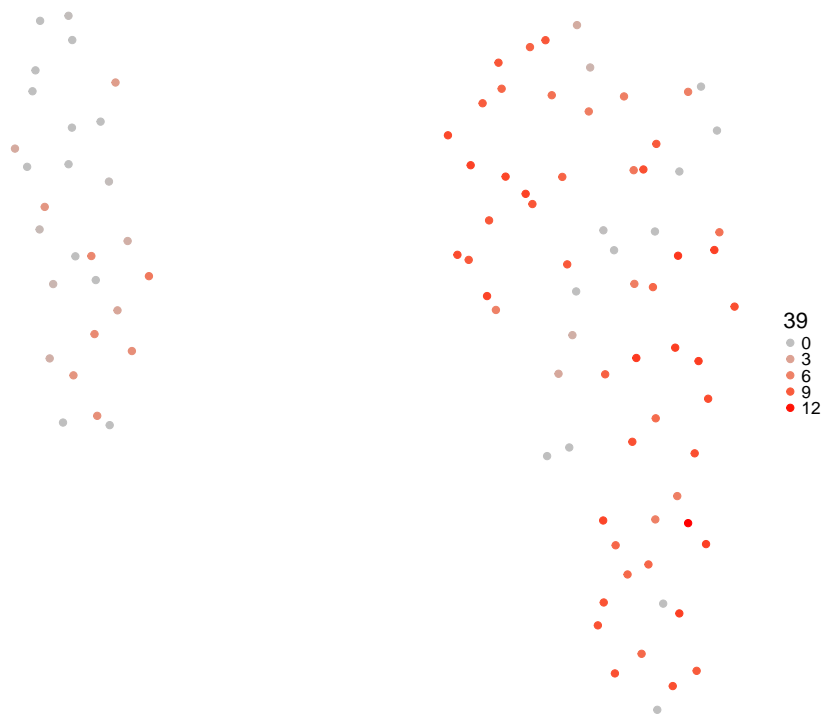




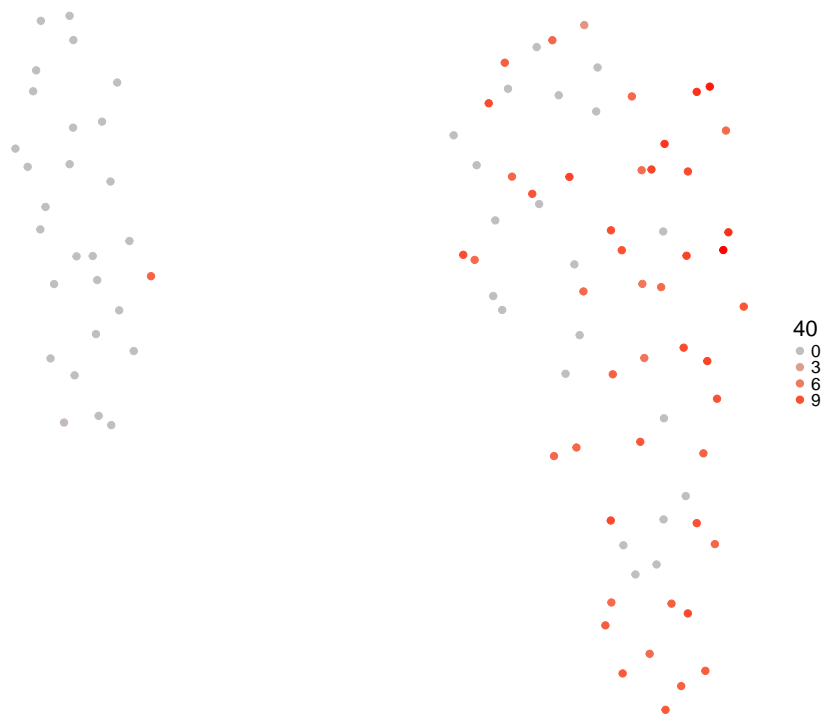
UMAP colored by IFNGR1 expression



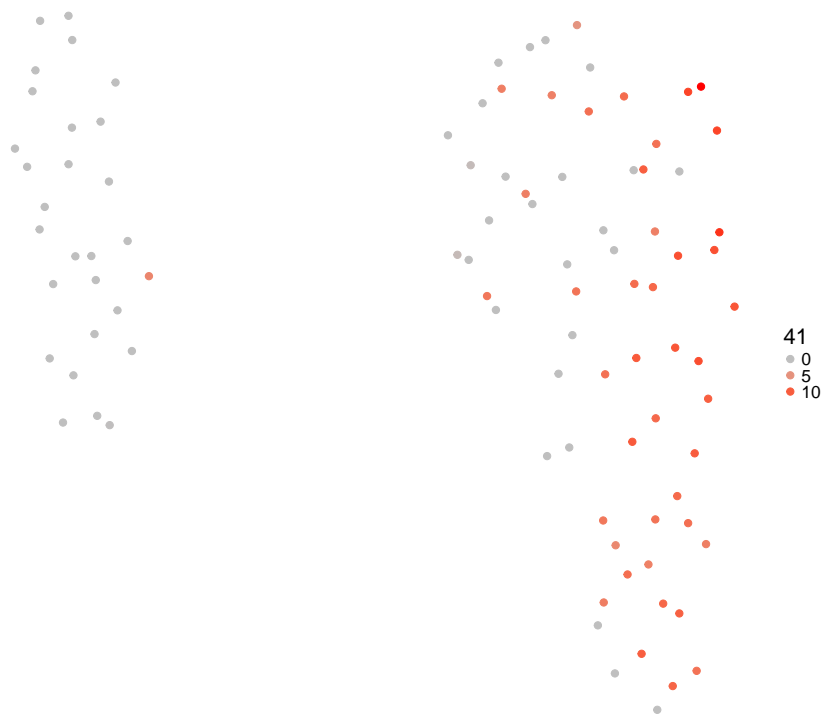
UMAP colored by WNT4 expression



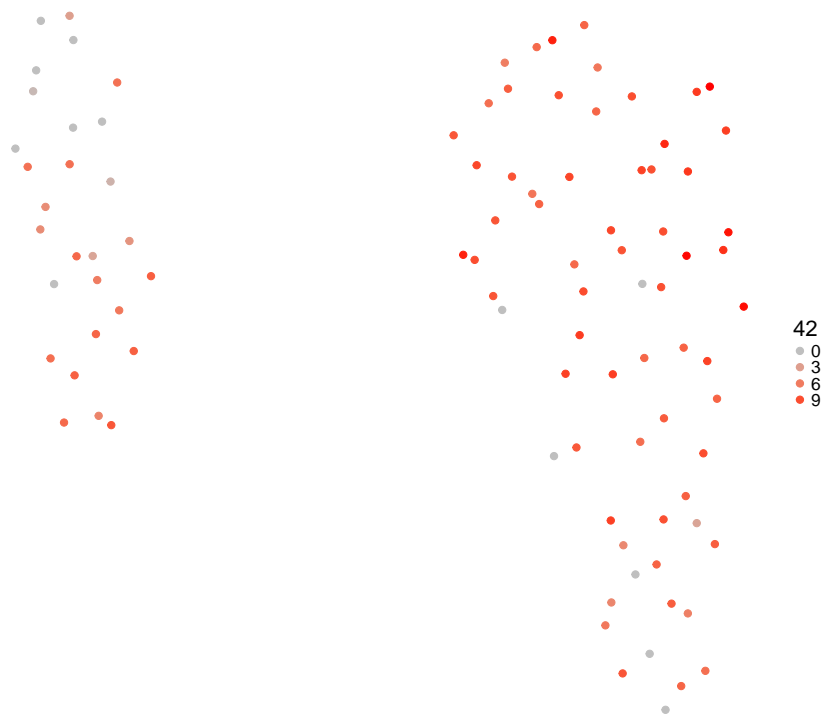
UMAP colored by TRAF2 expression



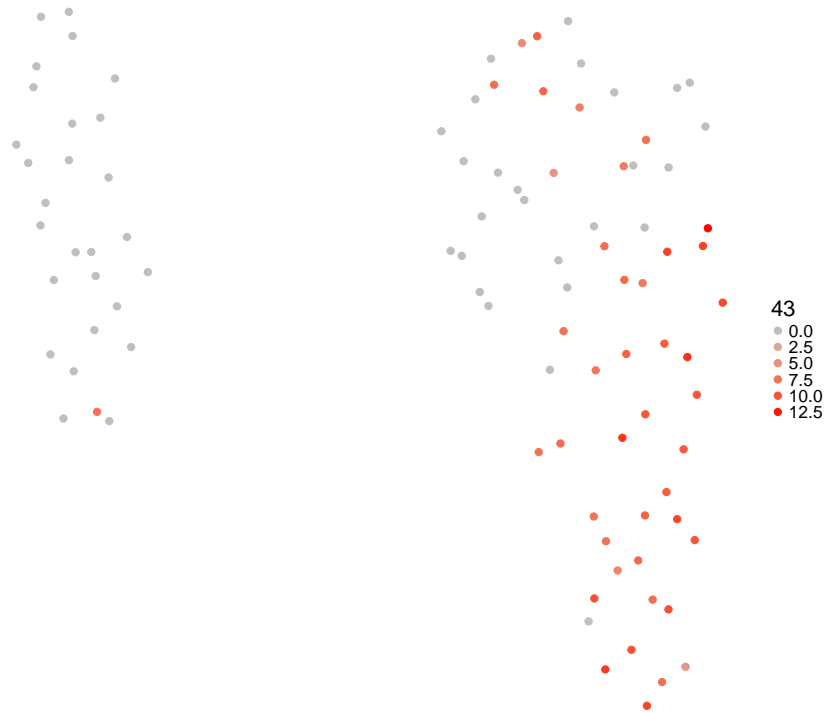
UMAP colored by CSF1 expression



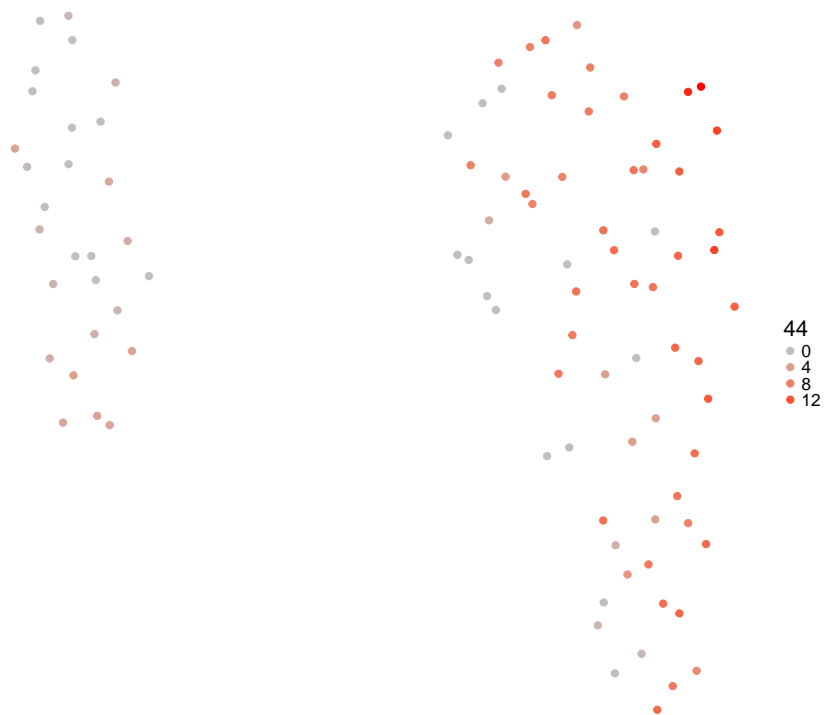
UMAP colored by FGFR1 expression



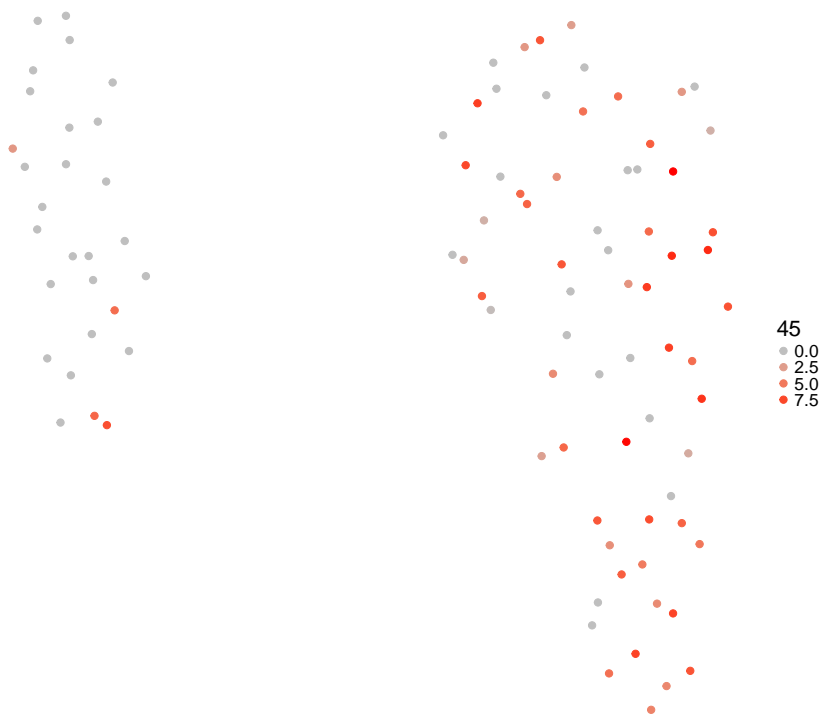
UMAP colored by KLF5 expression



UMAP colored by TNFRSF1A expression

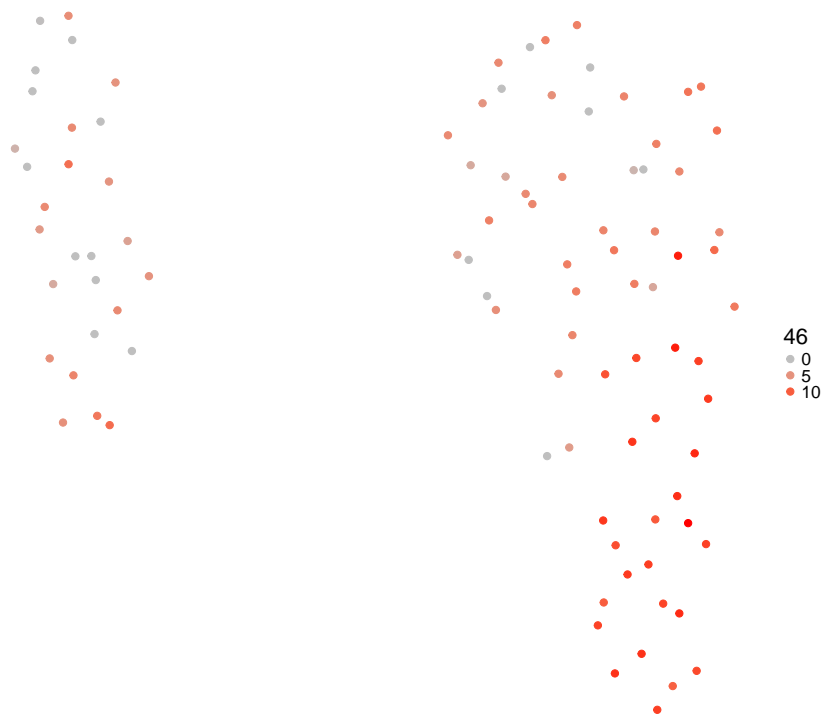


UMAP colored by CSF2RA expression

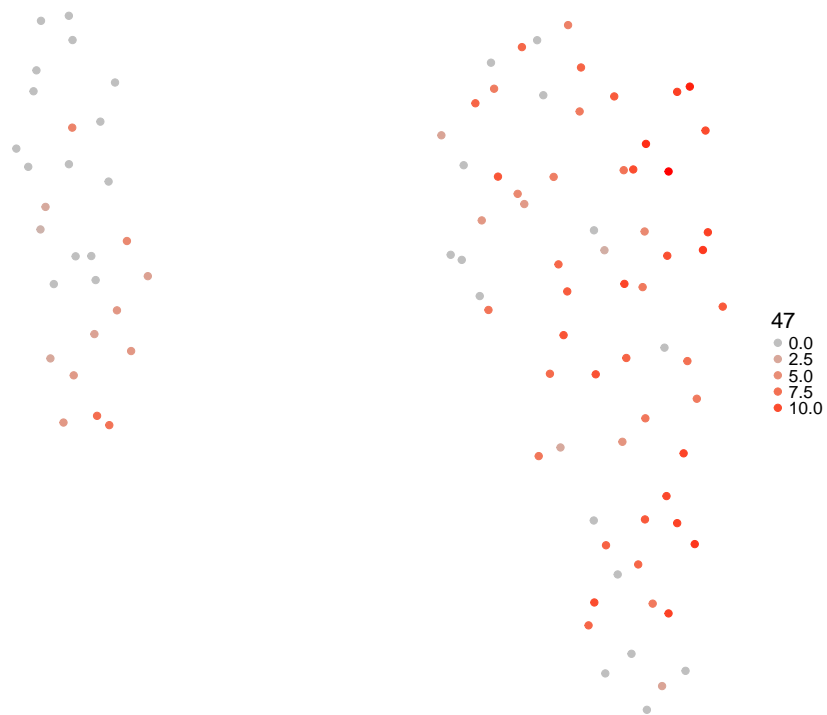




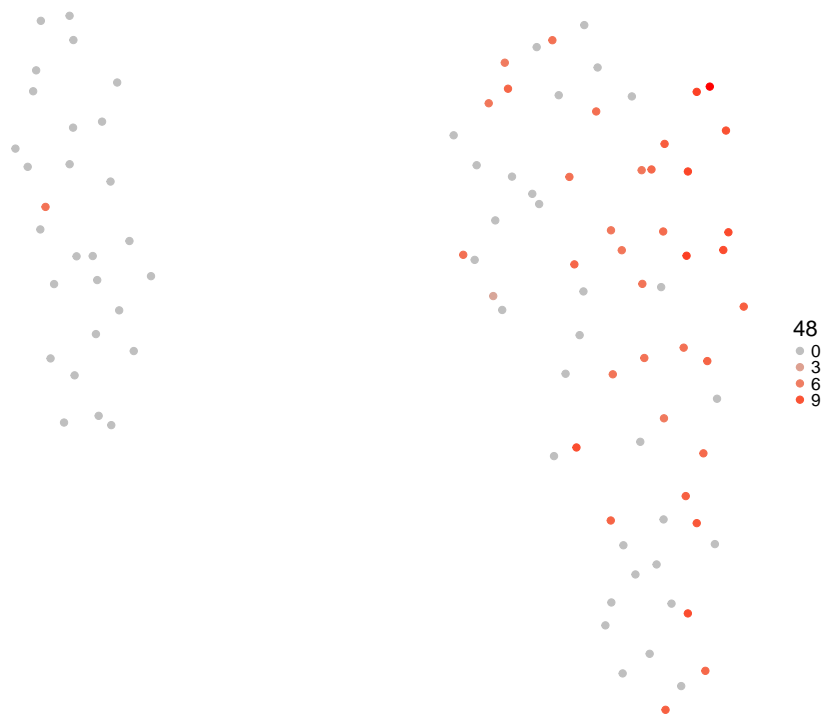
UMAP colored by INS1 expression



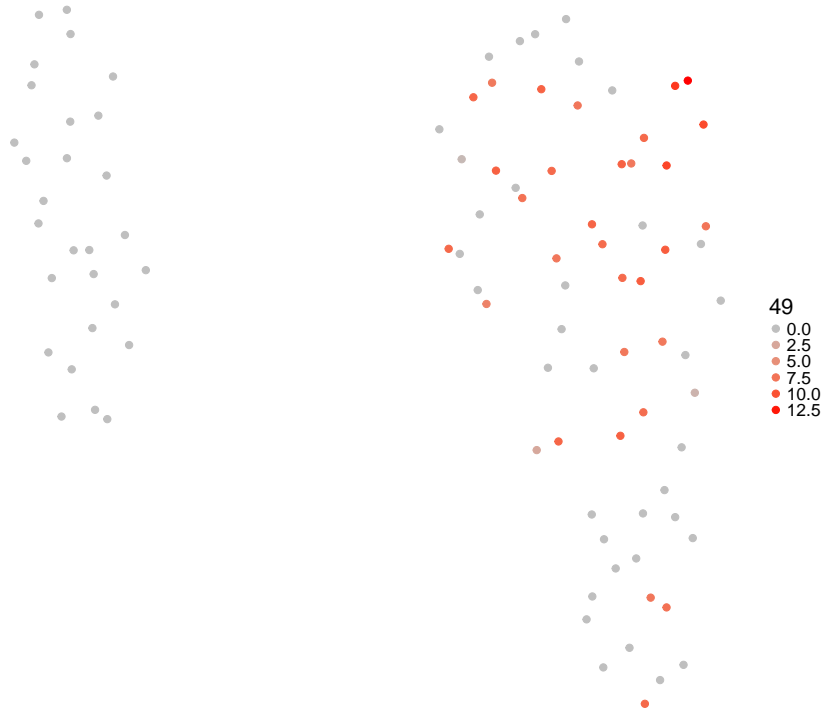
UMAP colored by ANPEP expression



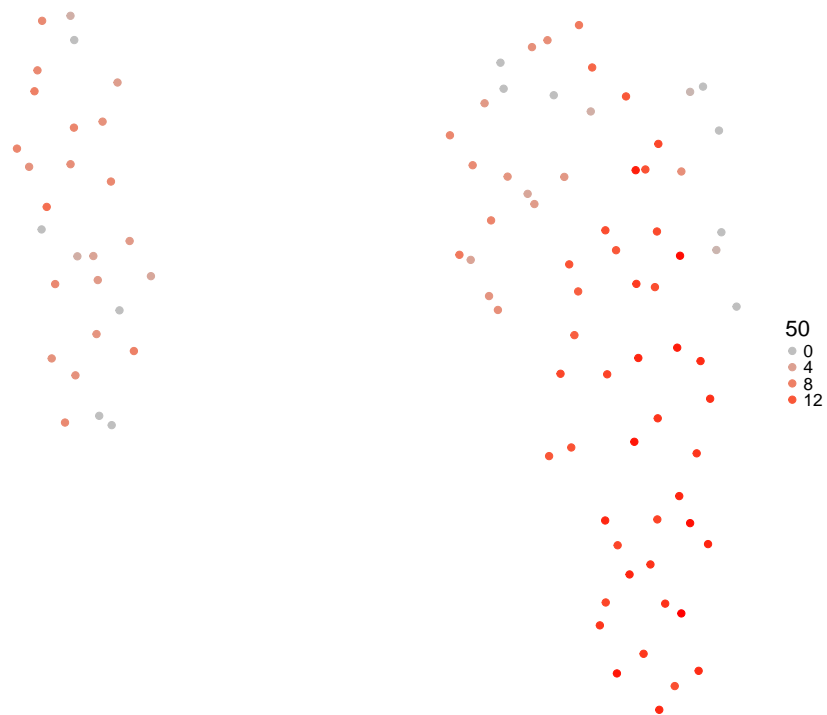
UMAP colored by NFATC1 expression



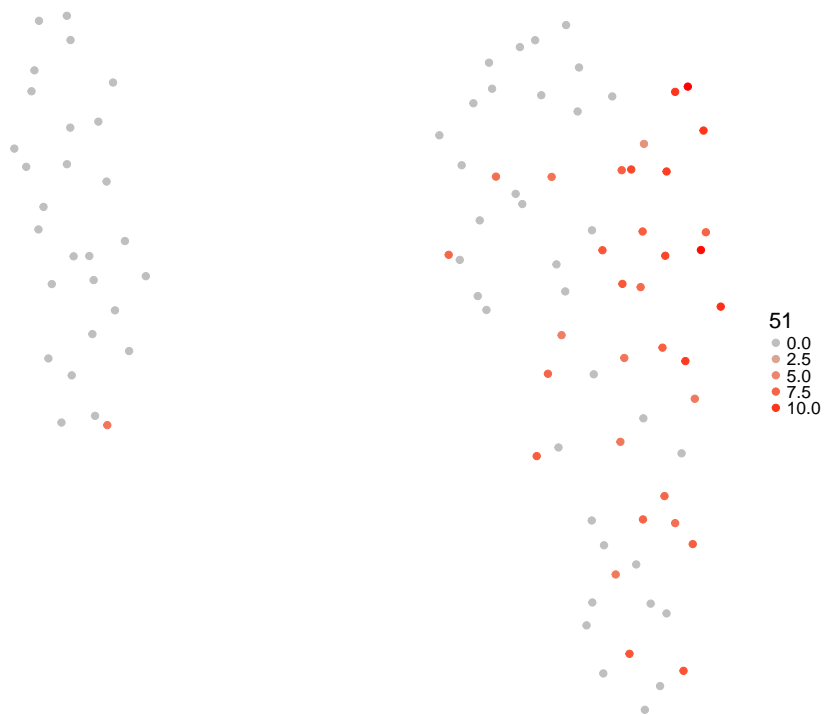
UMAP colored by FYN expression



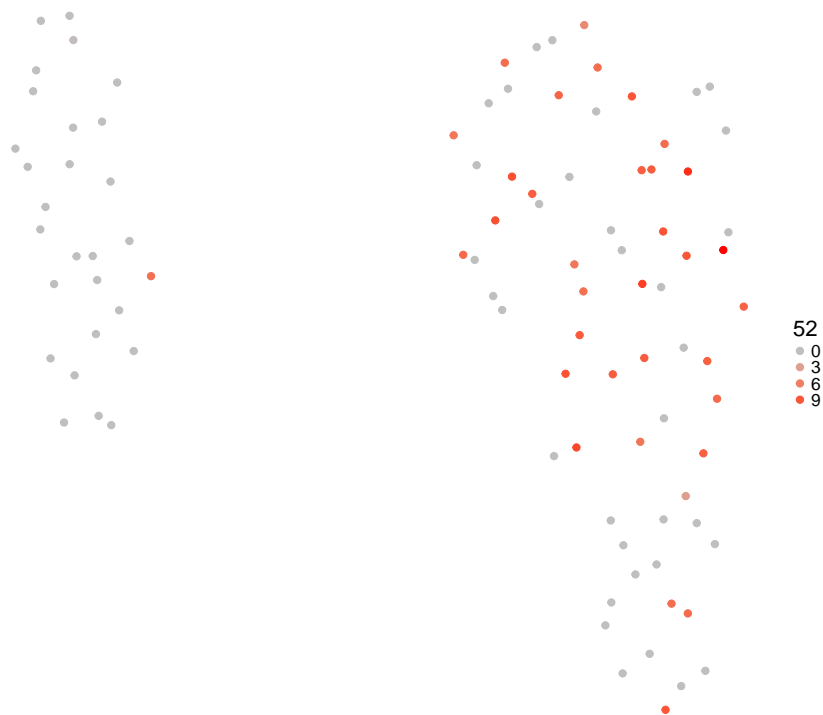
UMAP colored by IAPP expression



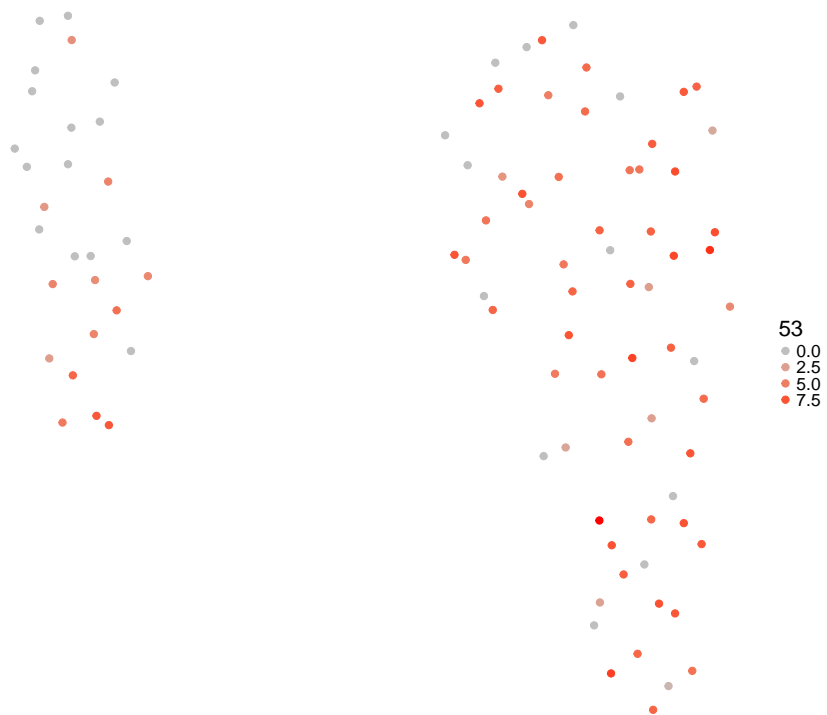
UMAP colored by TLR3 expression



UMAP colored by BCL6 expression

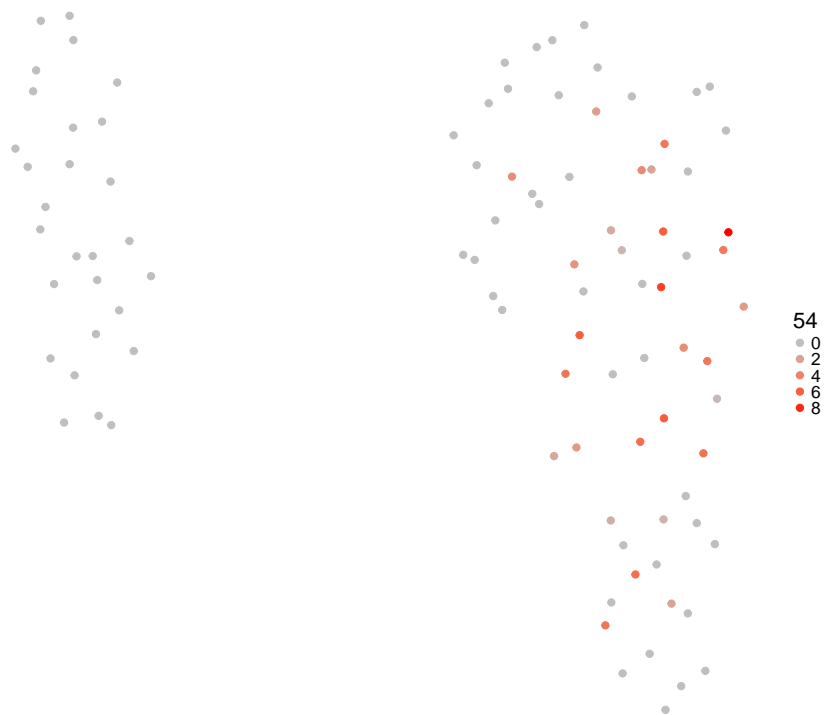


UMAP colored by STAT5 expression

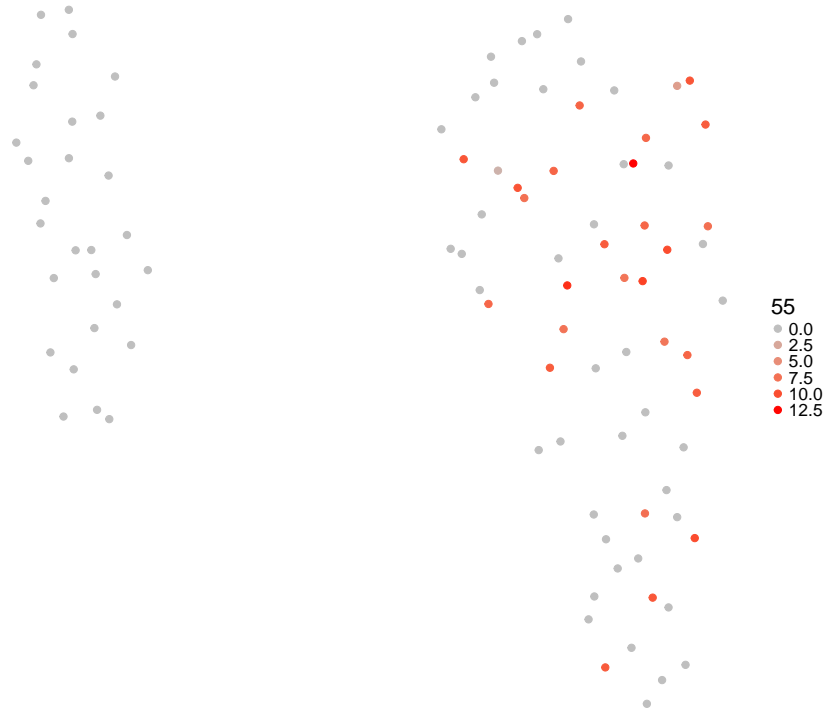




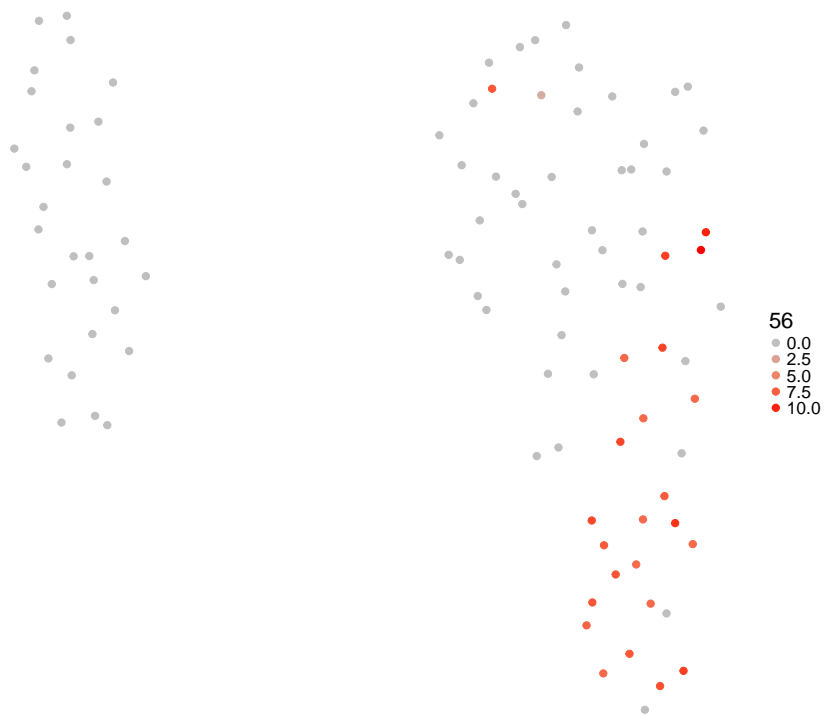
UMAP colored by CD44 expression



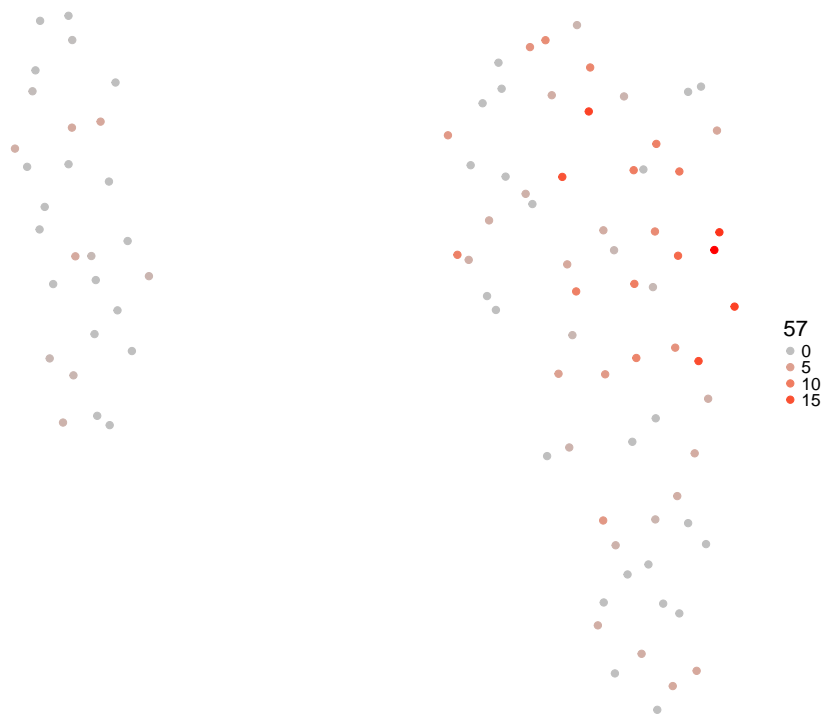
UMAP colored by IFIT1 expression



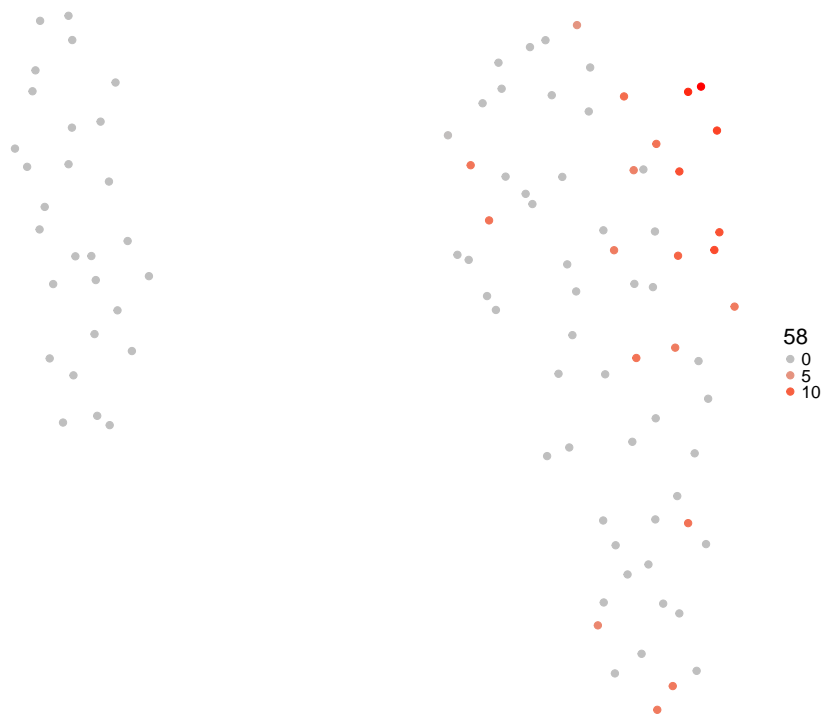
UMAP colored by EGFR expression



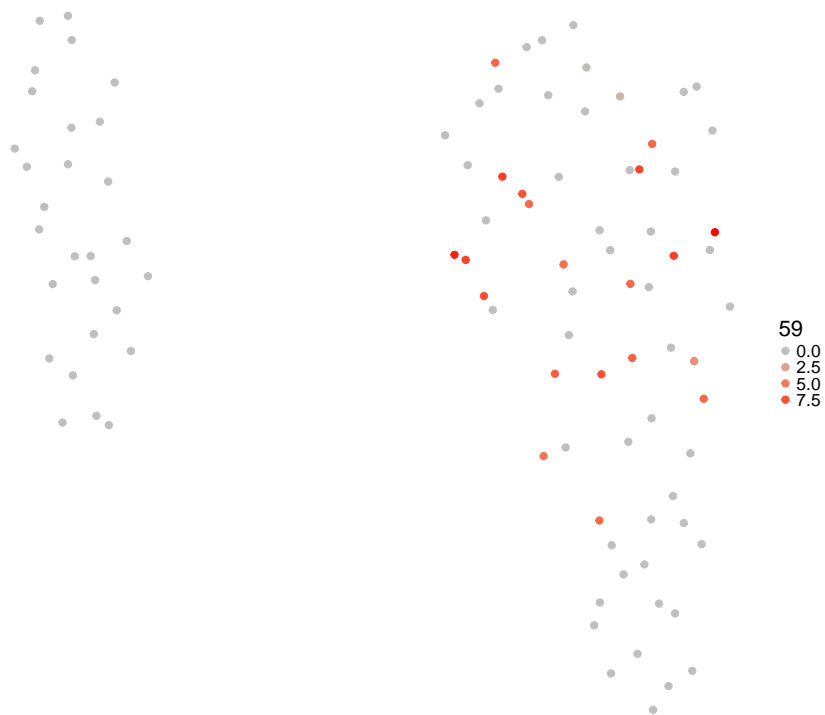
UMAP colored by SPP1 expression



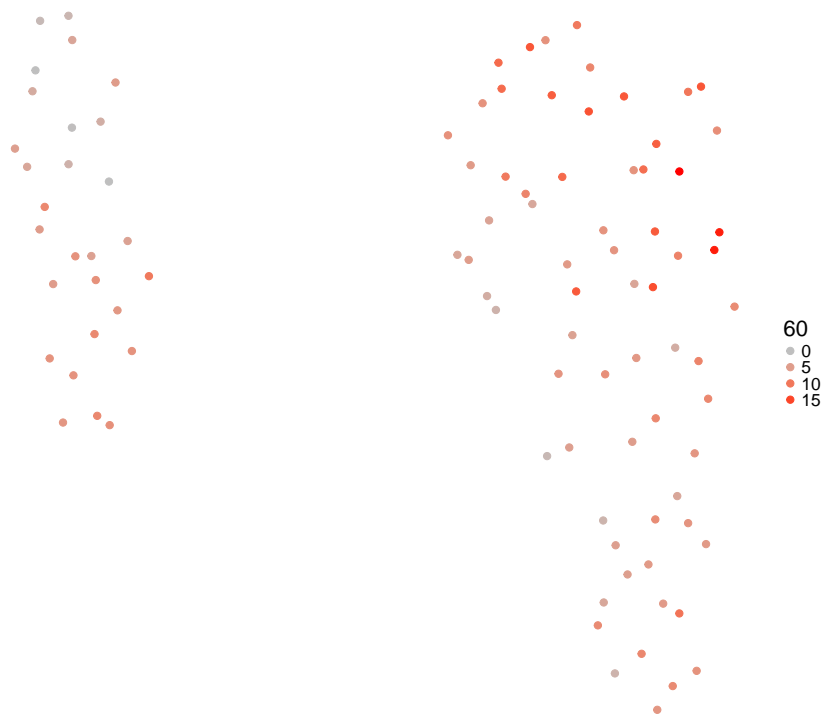
UMAP colored by IL4RA expression



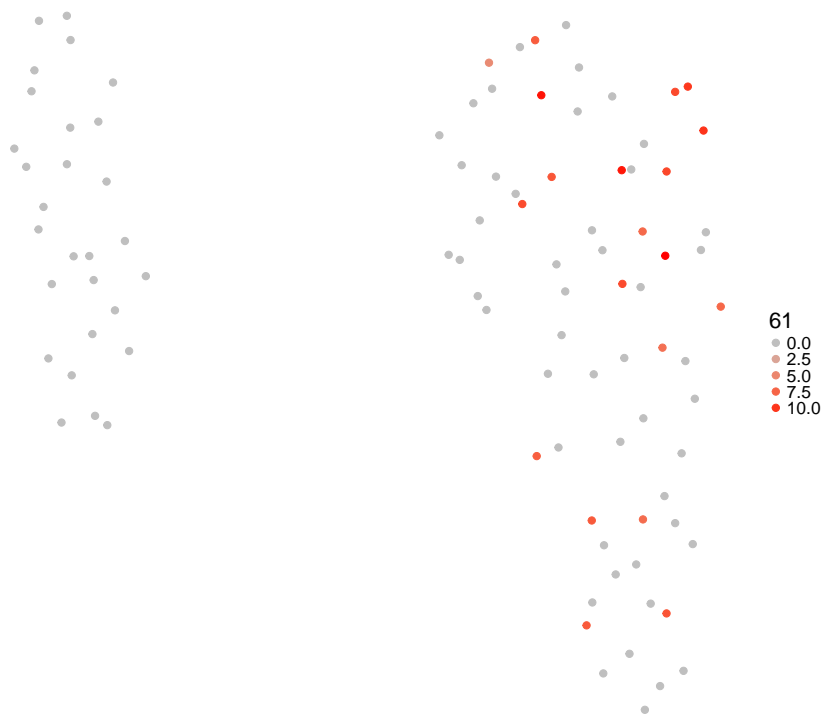
UMAP colored by CD83 expression



UMAP colored by CD74 expression

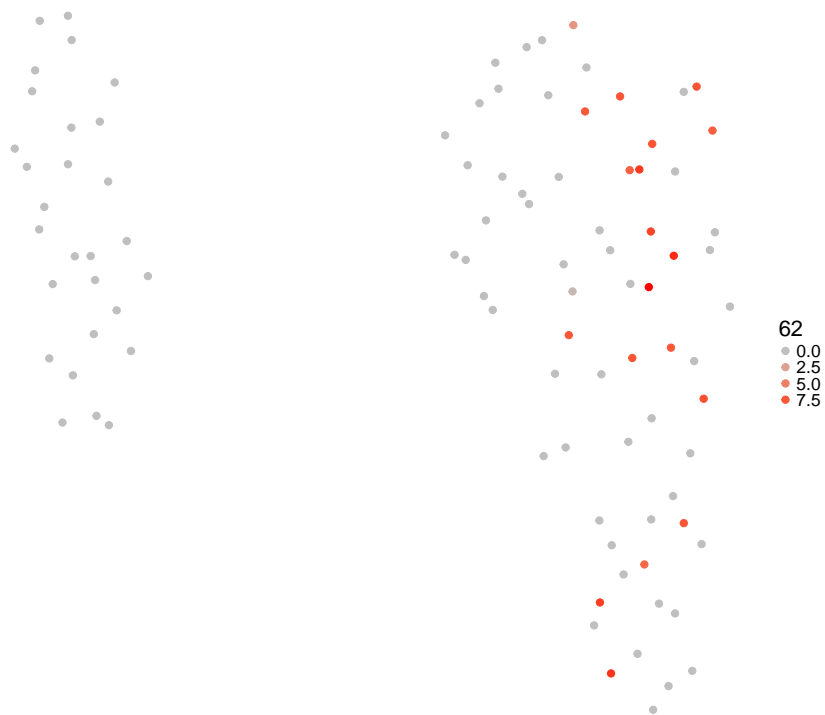


UMAP colored by NUR77 expression

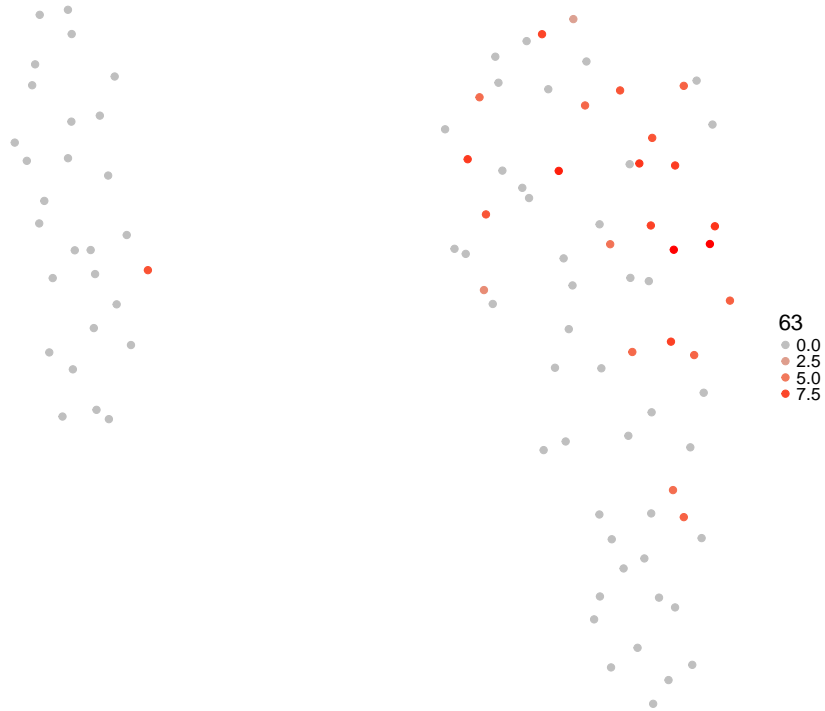




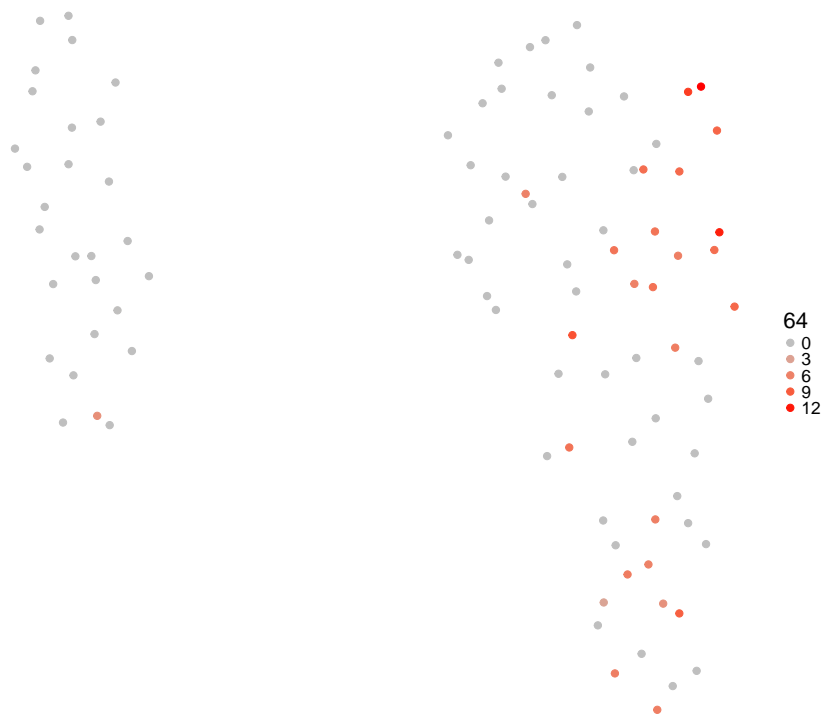
UMAP colored by OAS1B expression



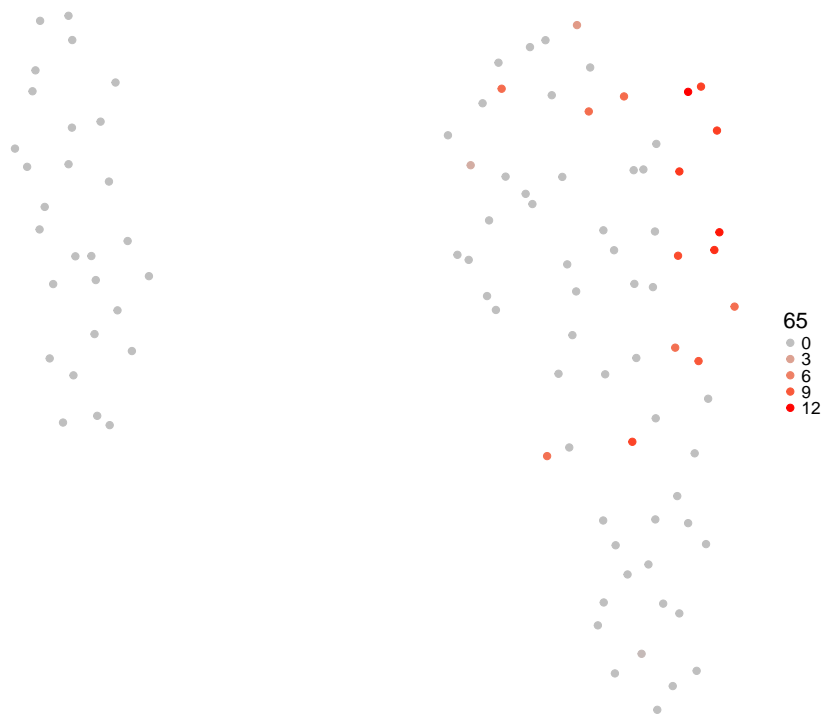
UMAP colored by LY75 expression



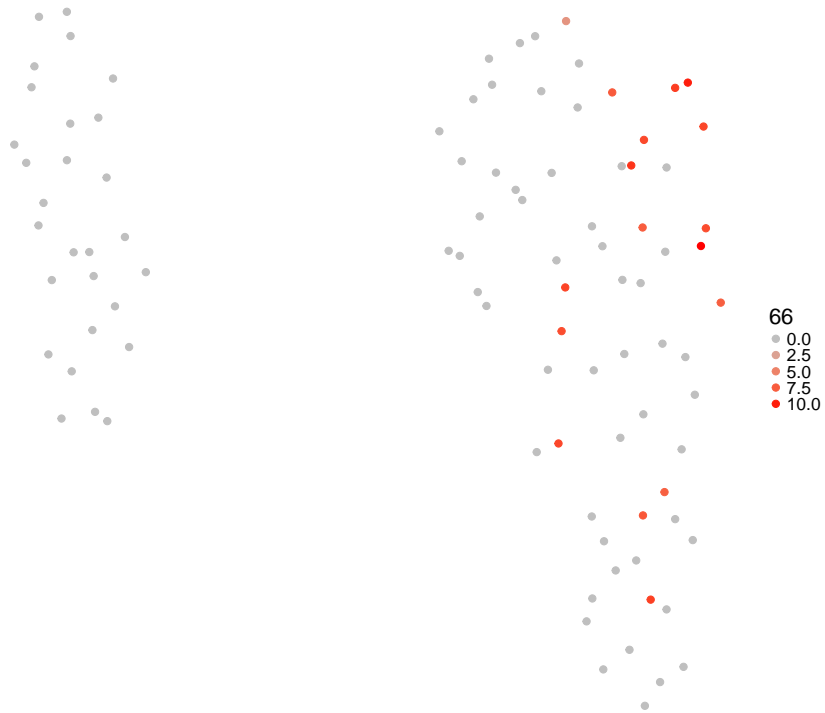
UMAP colored by PDGFB expression



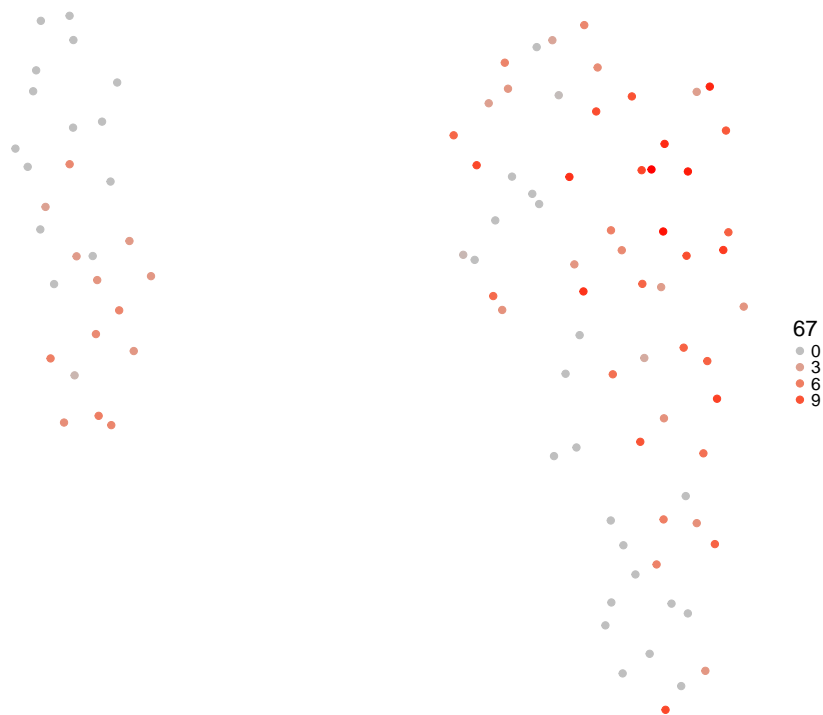
UMAP colored by TNFAIP3 expression



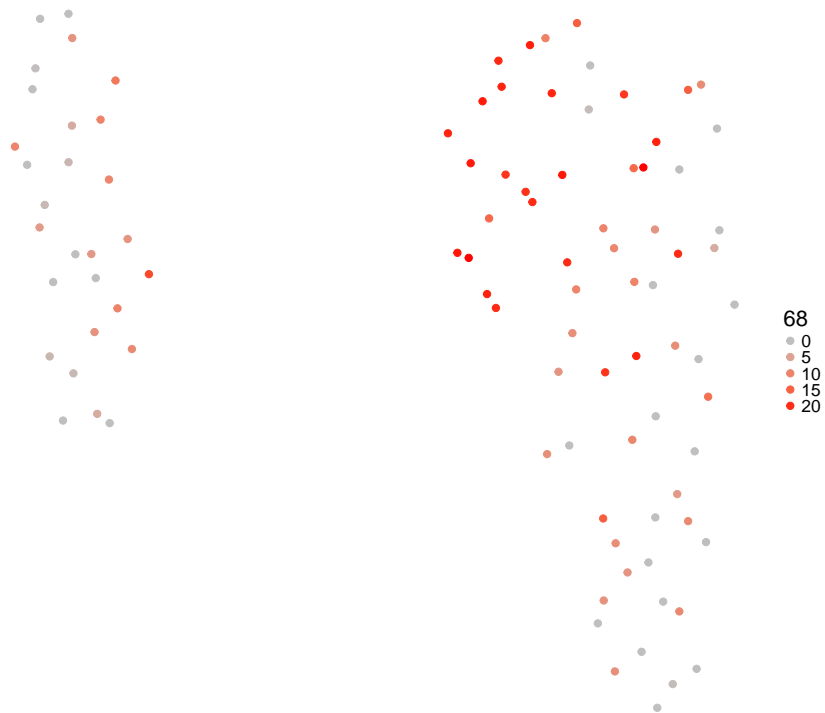
UMAP colored by MAP2K6 expression



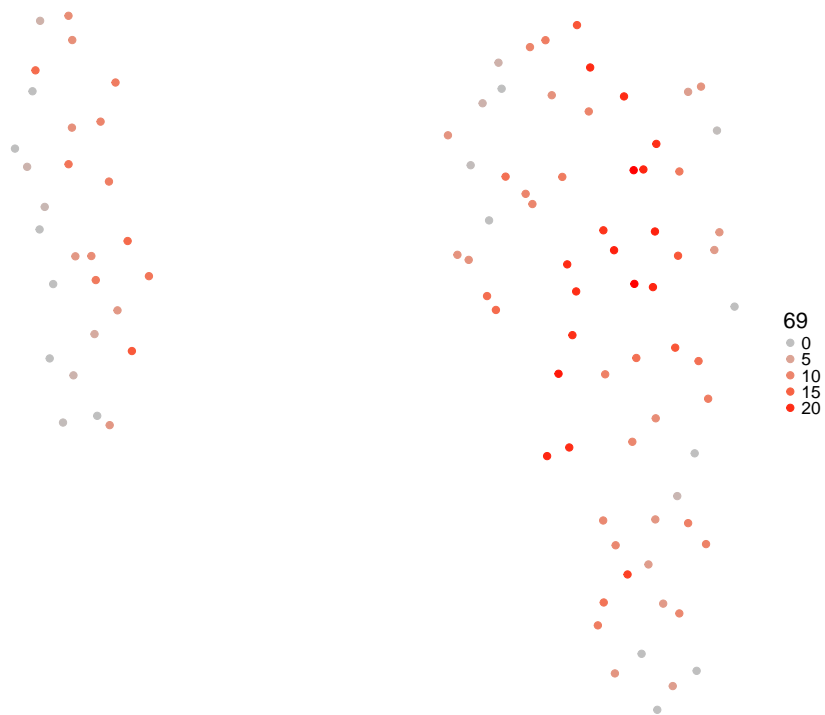
UMAP colored by IRF7 expression



UMAP colored by GCG expression

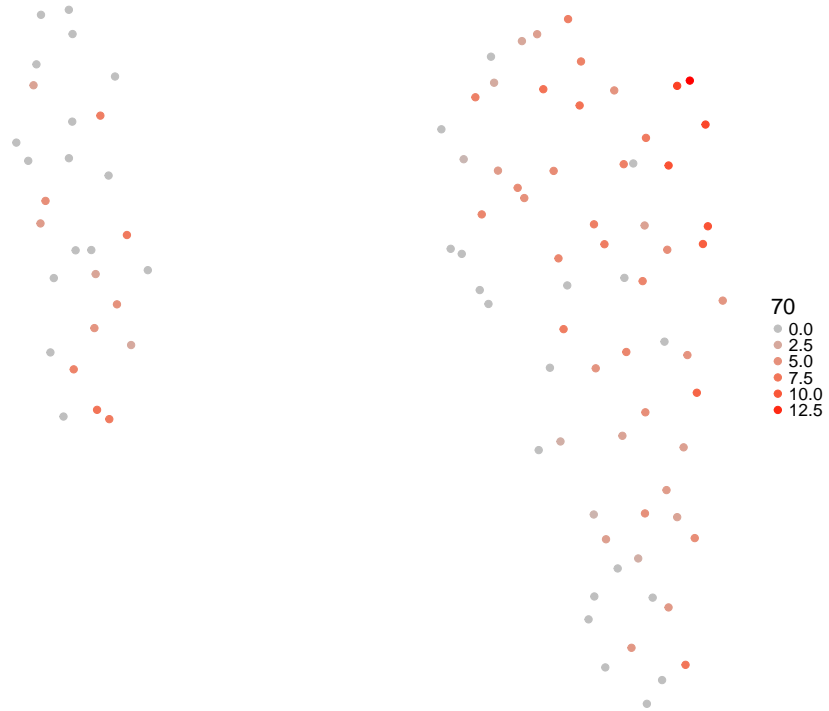


UMAP colored by SST expression

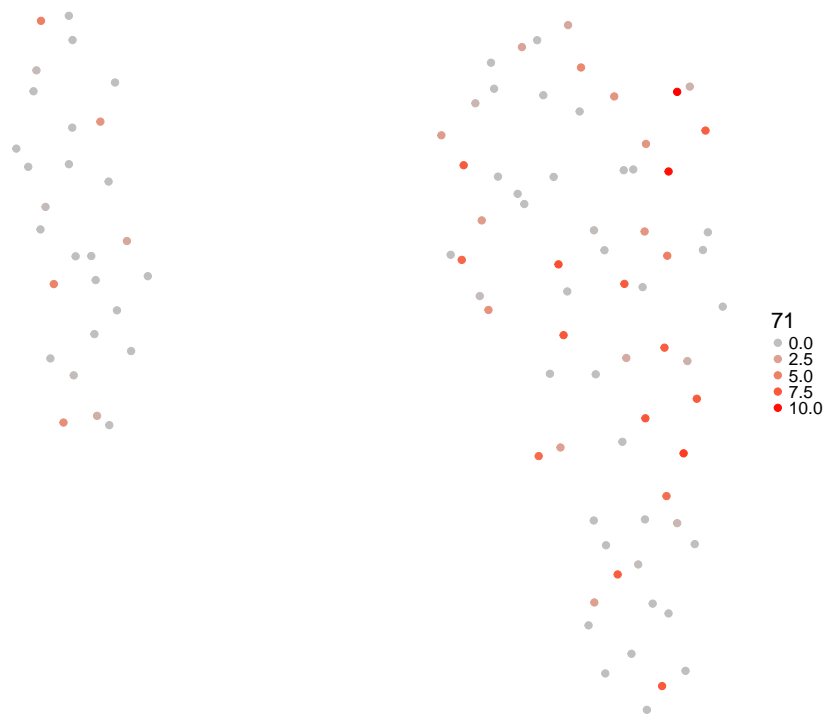




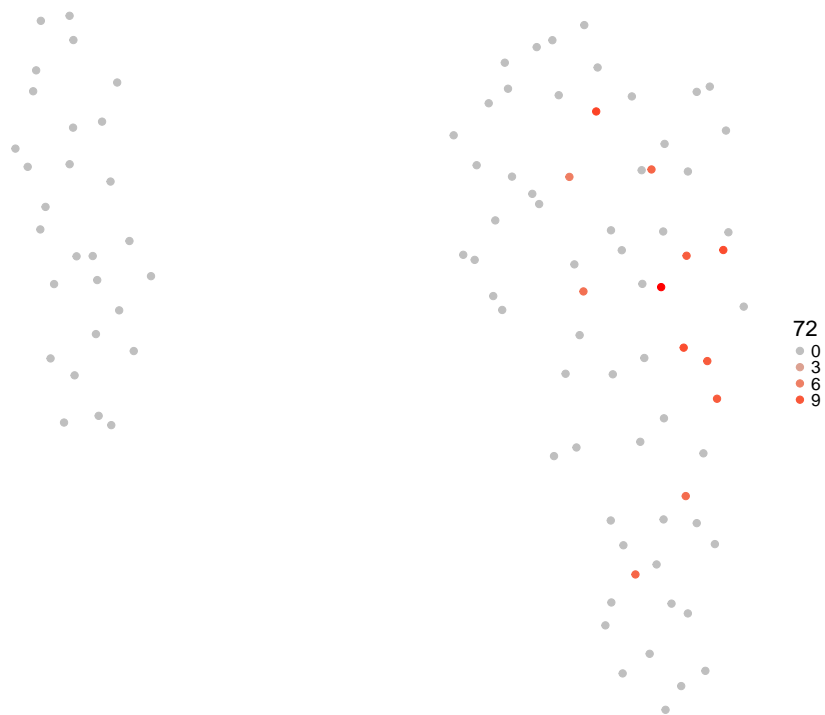
UMAP colored by TNFRSF1B expression



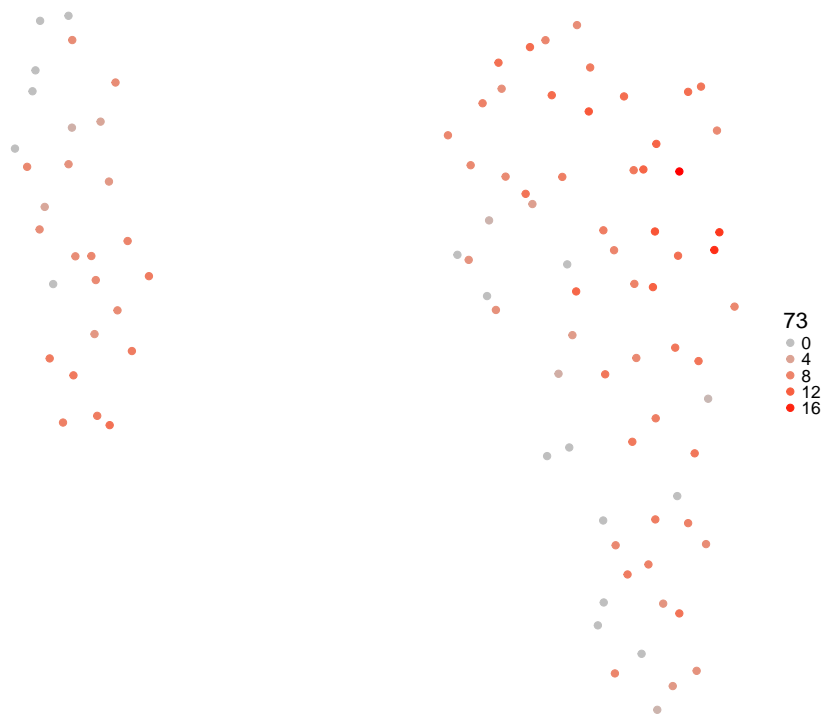
UMAP colored by CD40 expression



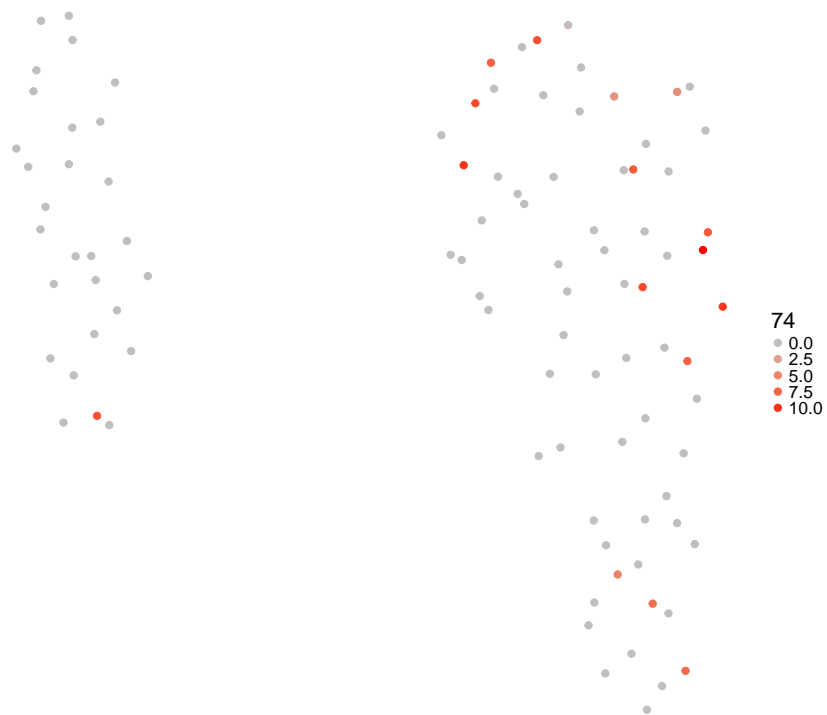
UMAP colored by OAS2 expression



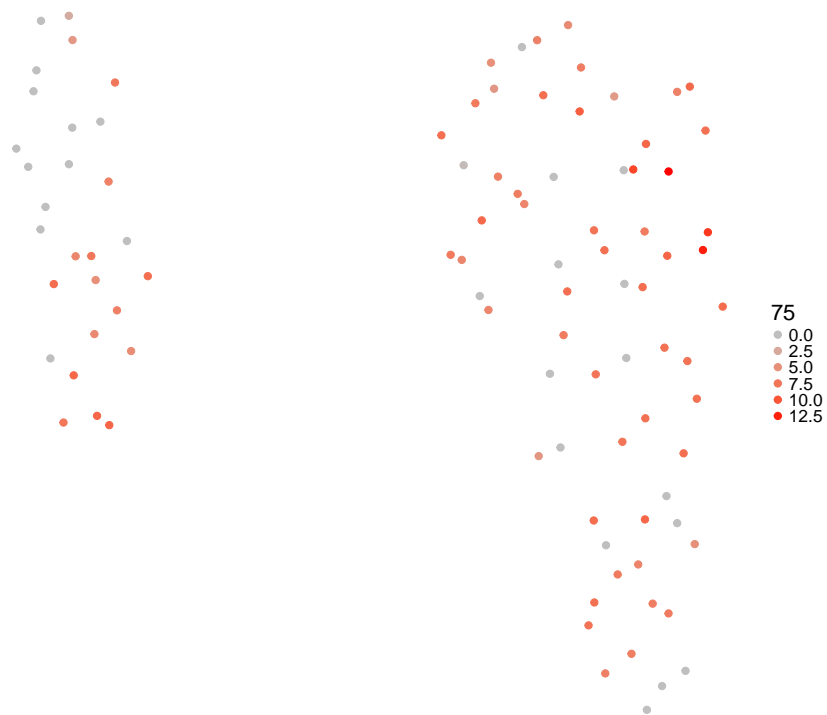
UMAP colored by H2-AA expression



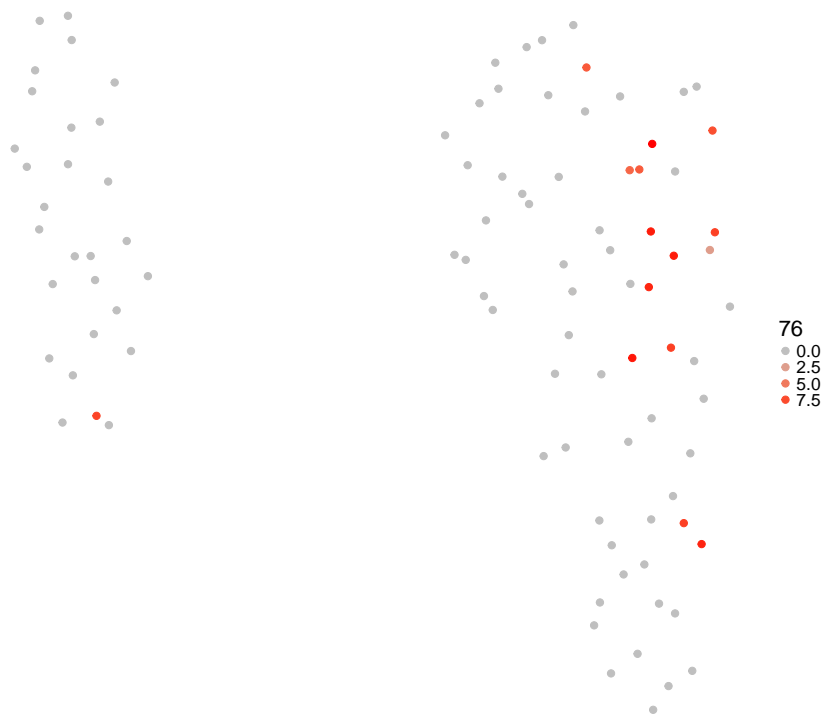
UMAP colored by PPARGC1A expression



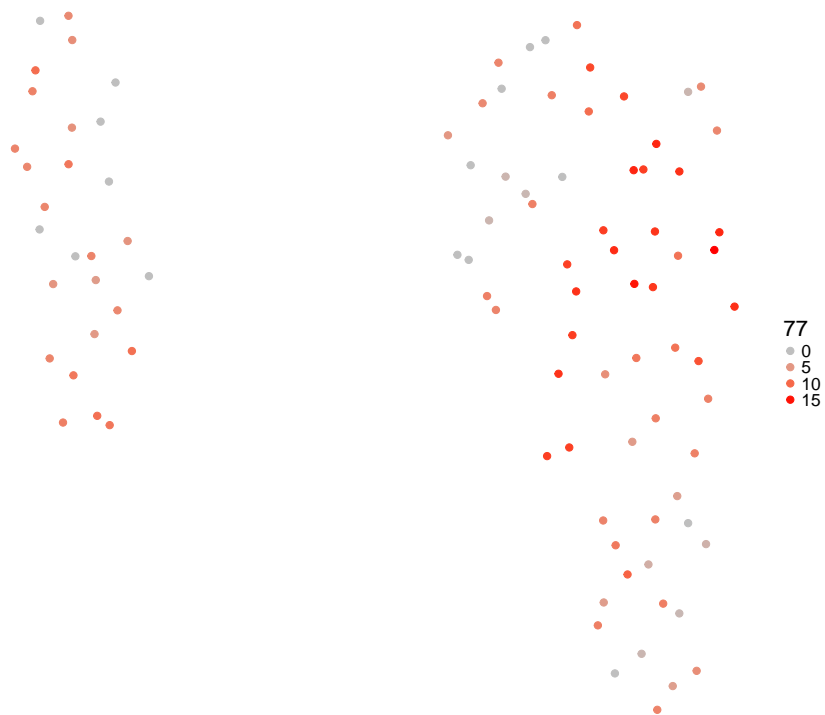
UMAP colored by H2-DMA expression



UMAP colored by RSAD2 expression

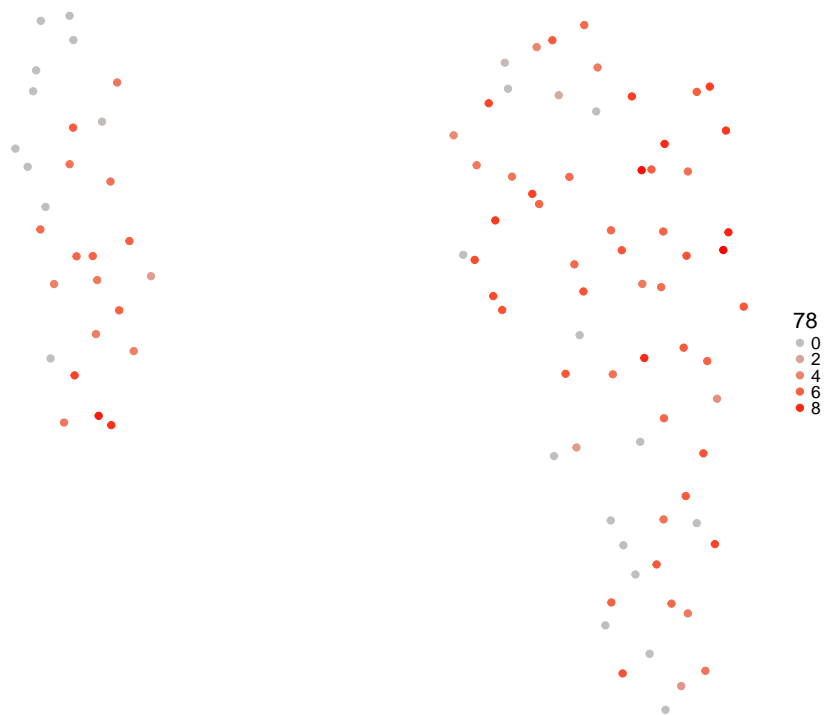


UMAP colored by CD24A expression

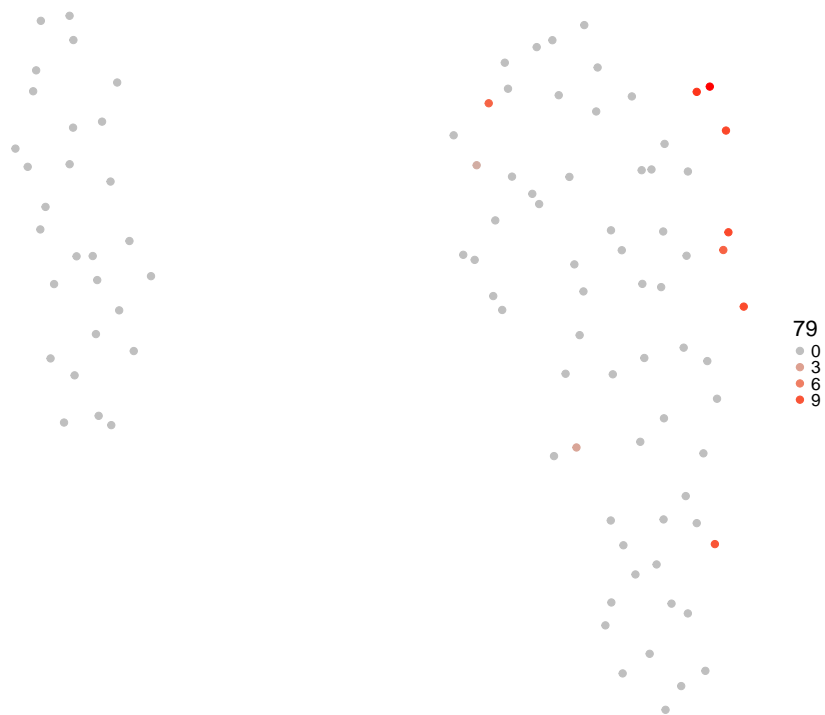




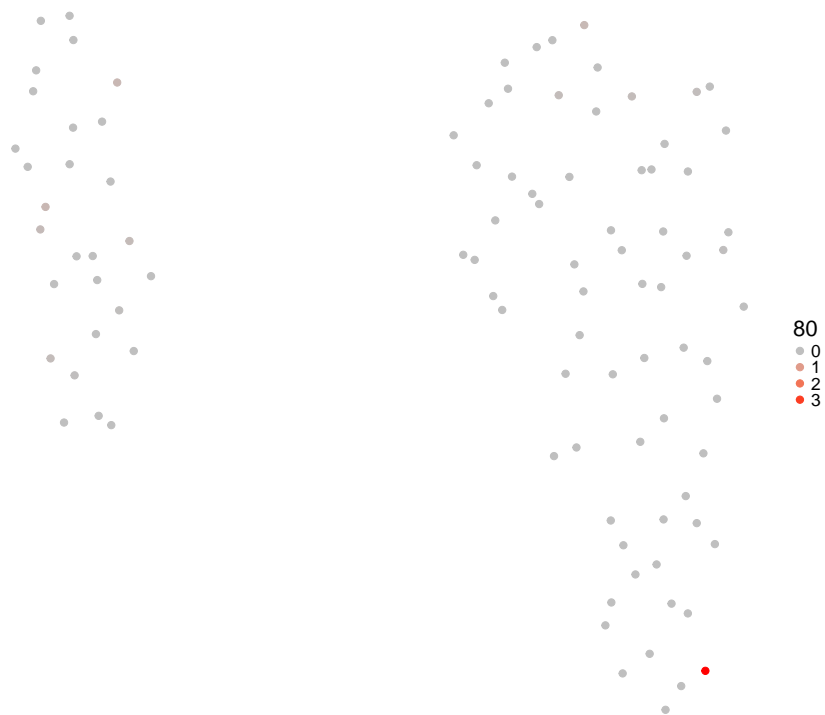
UMAP colored by BCL2 expression



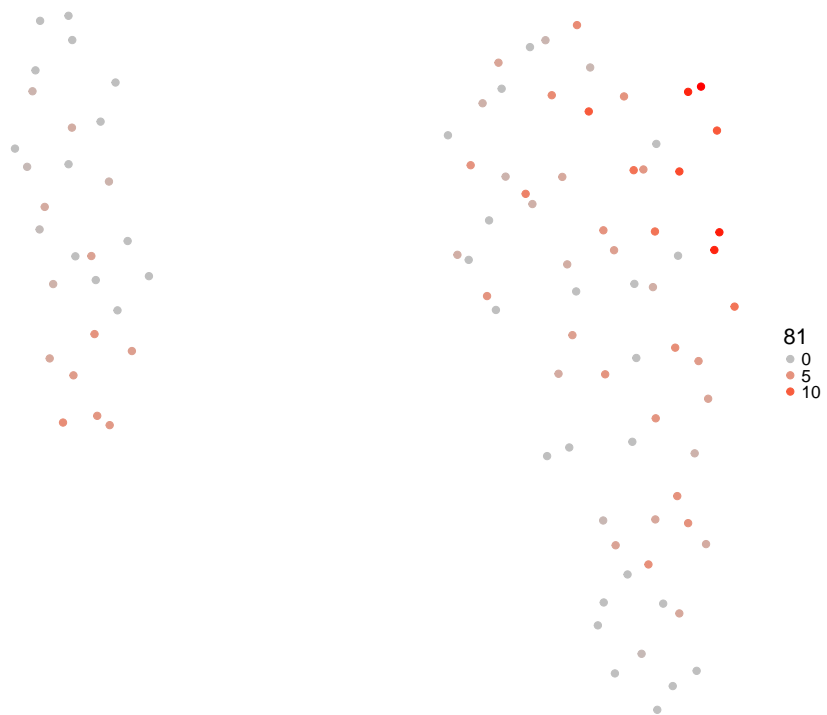
UMAP colored by TLR4 expression



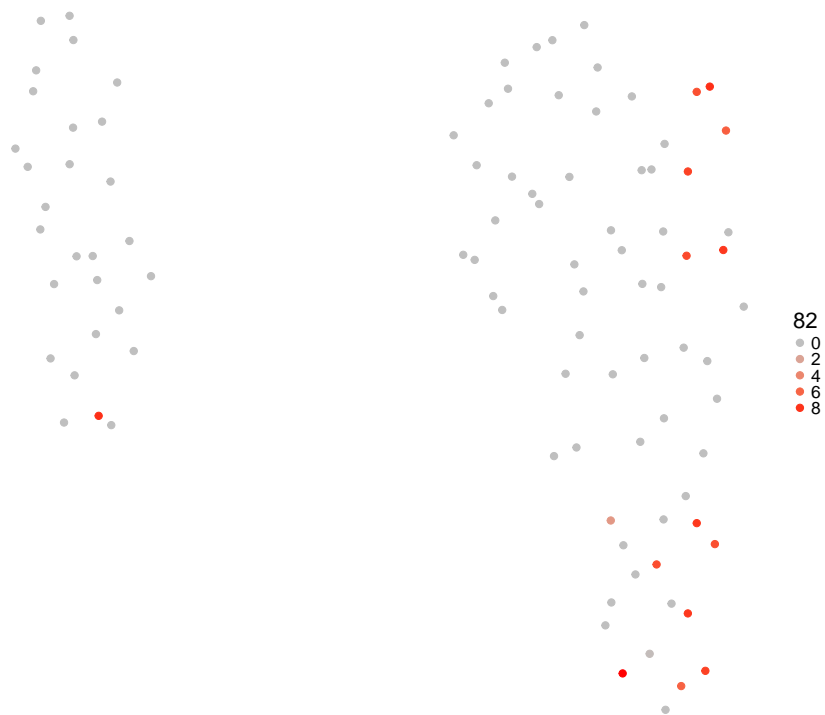
UMAP colored by COL11A1 expression



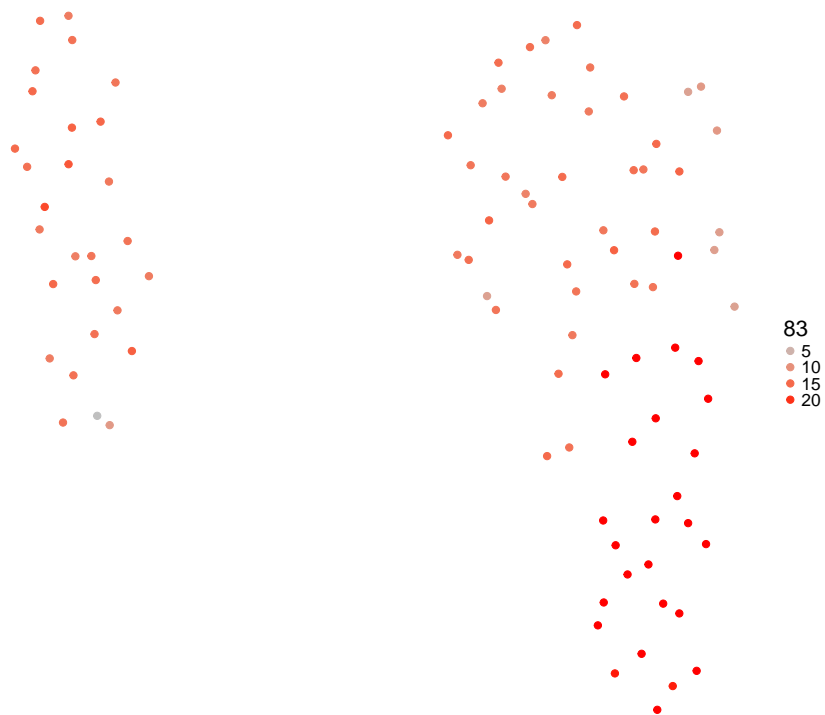
UMAP colored by ICAM1 expression



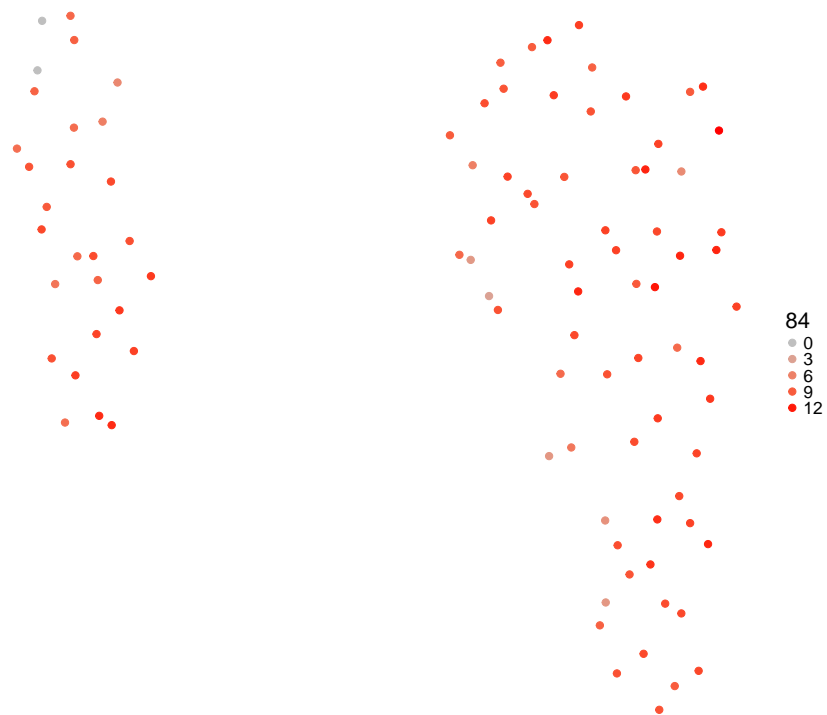
UMAP colored by PPARG expression



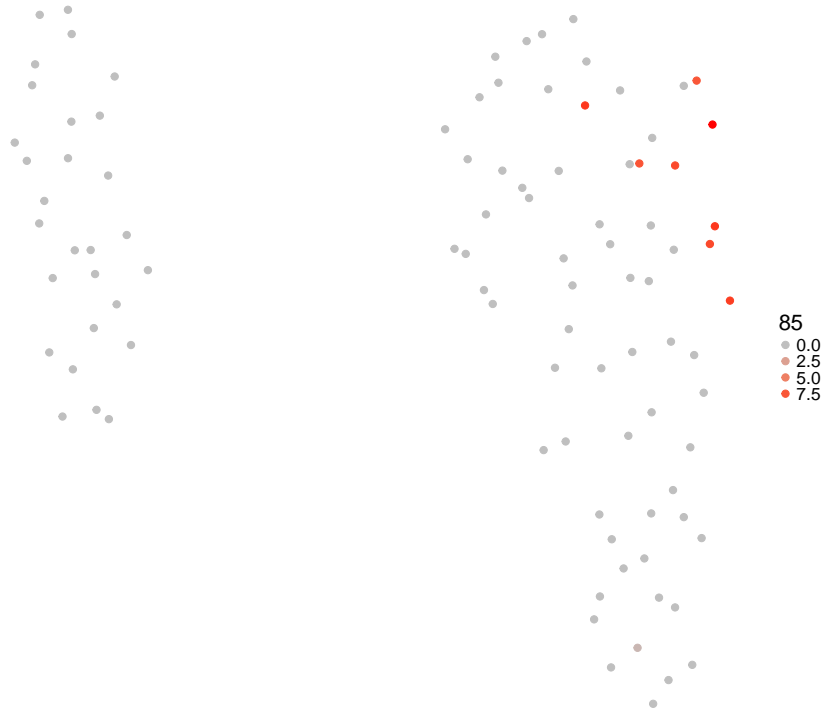
UMAP colored by INS2 expression



UMAP colored by IFIT3 expression

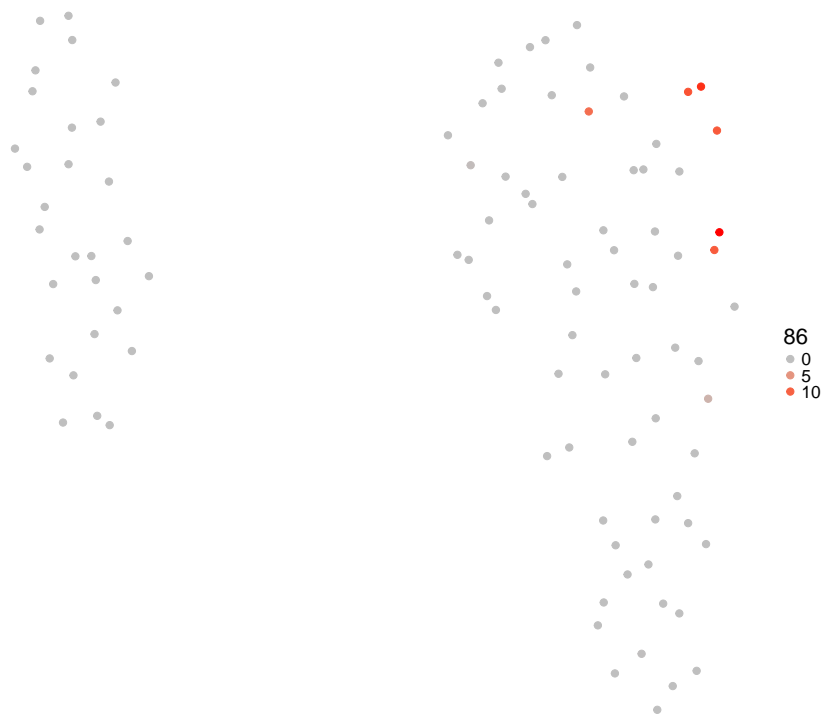


UMAP colored by SFRP1 expression

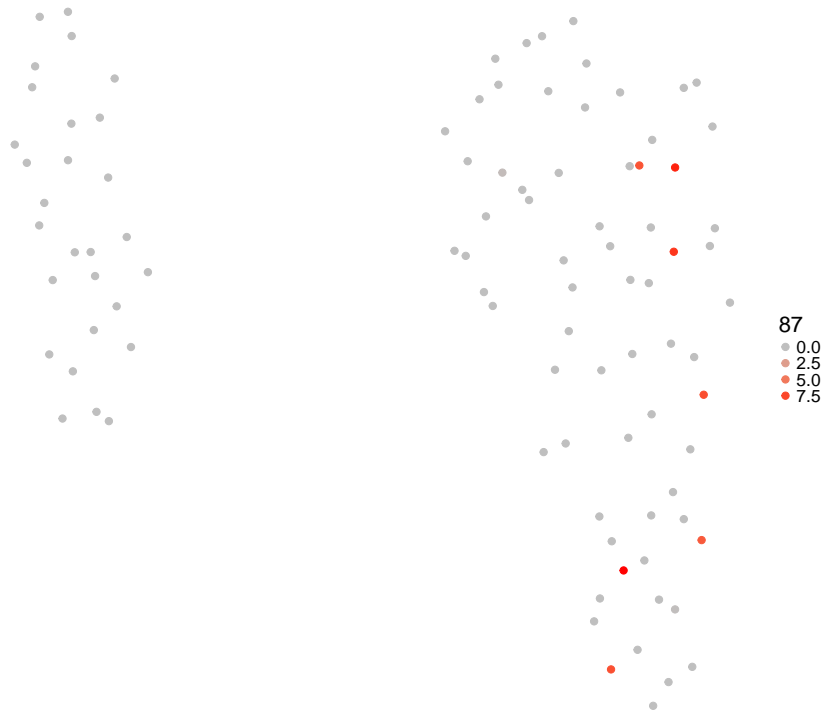




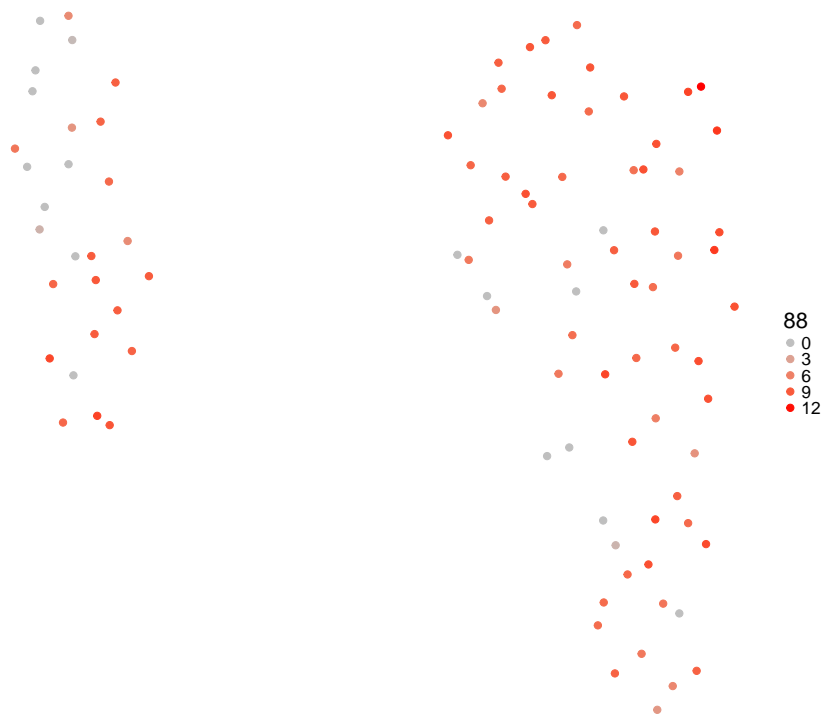
UMAP colored by VCAM1 expression



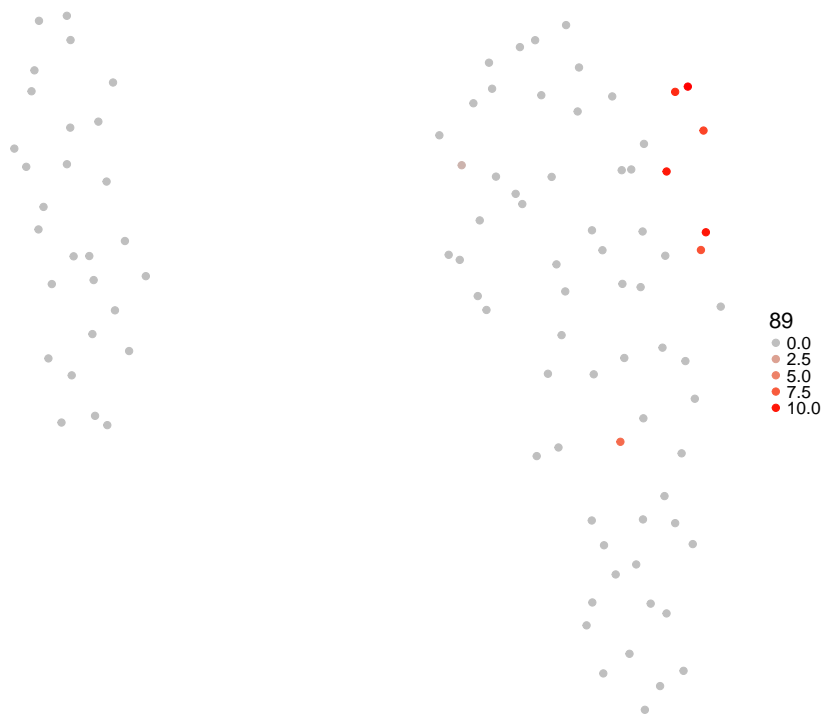
UMAP colored by MX1 expression



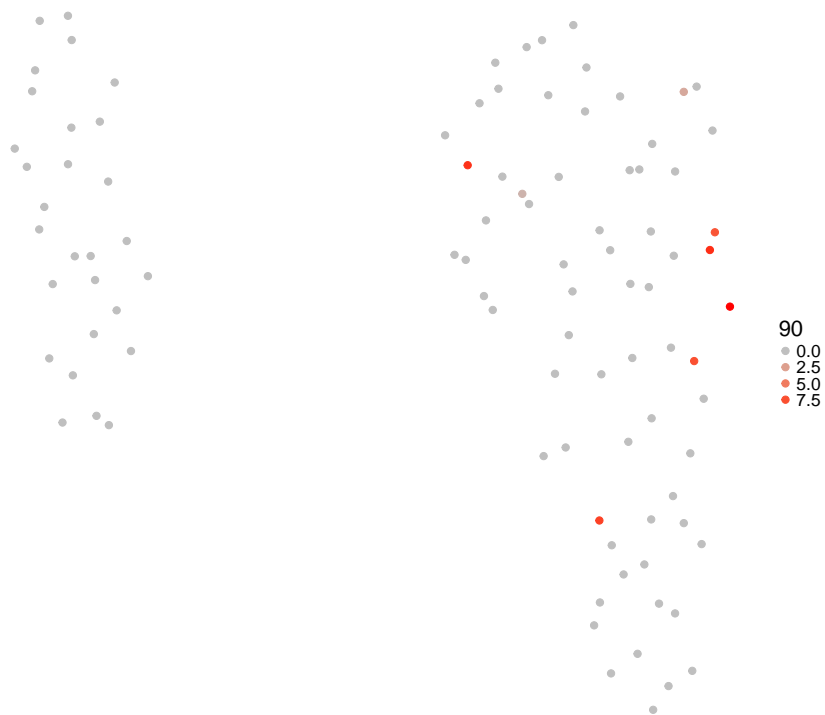
UMAP colored by IFI44 expression



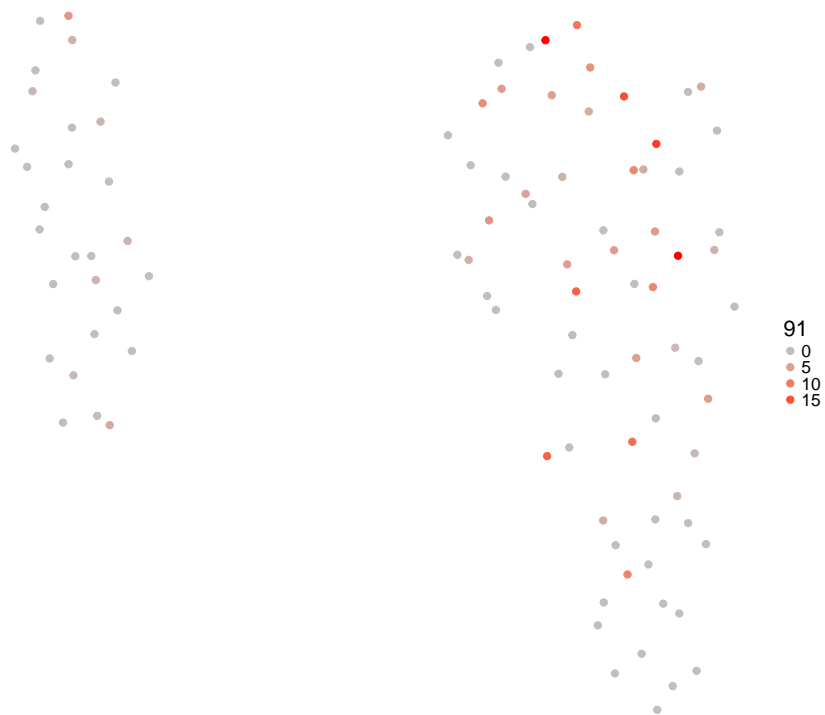
UMAP colored by ICOSL expression



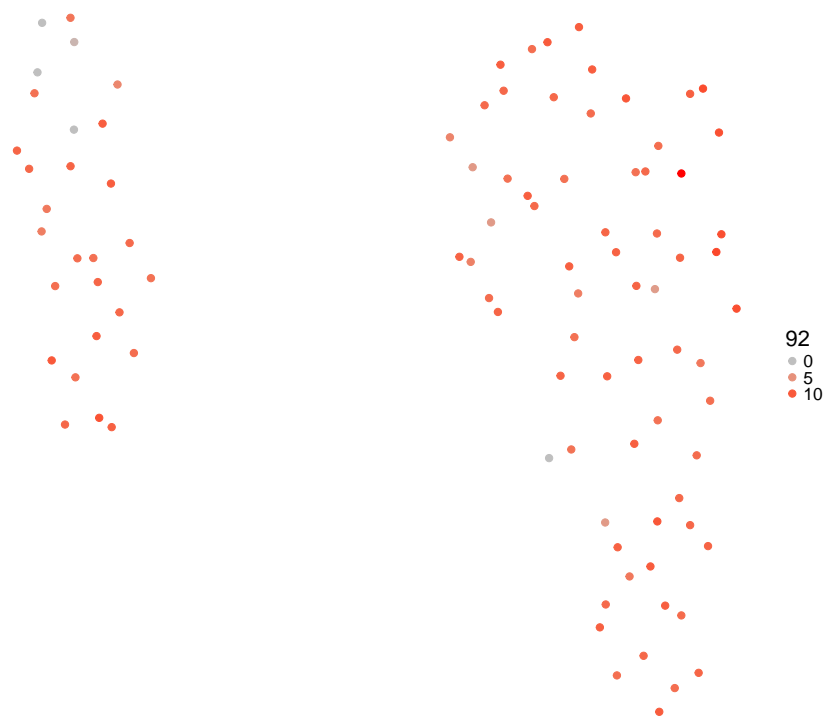
UMAP colored by ANGPT1 expression



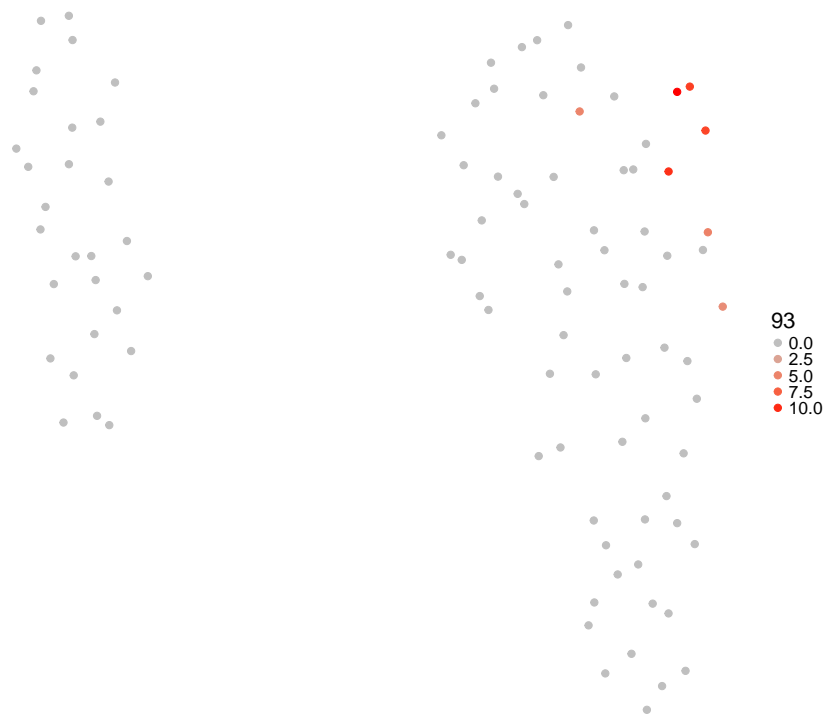
UMAP colored by PPY expression



UMAP colored by CCR2 expression

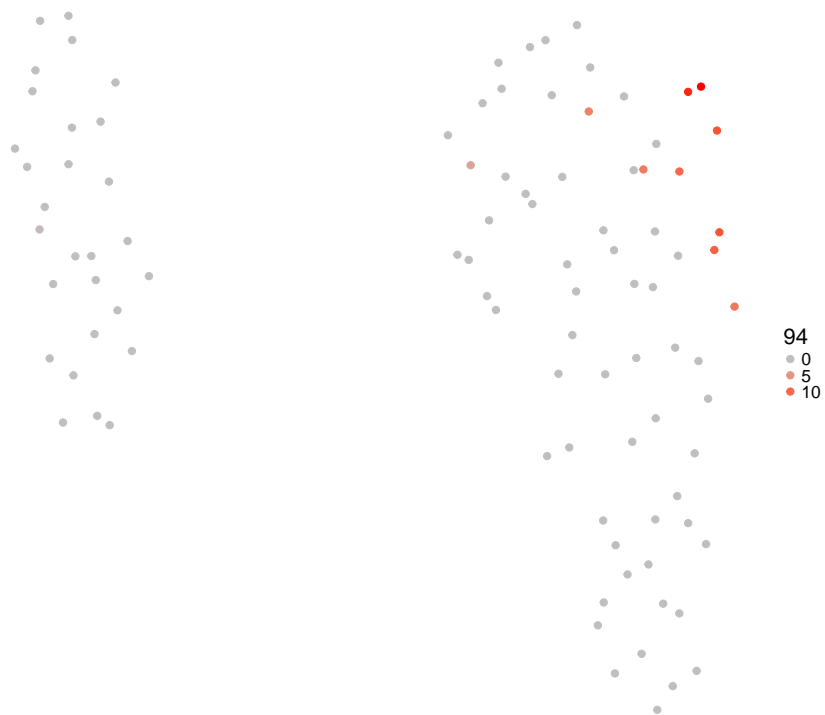


UMAP colored by TGFB1 expression

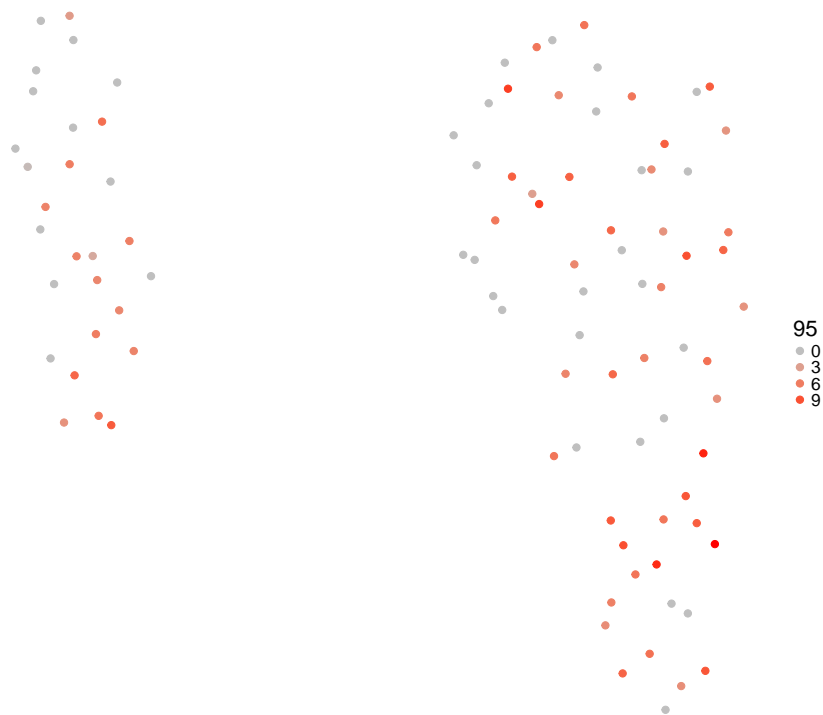




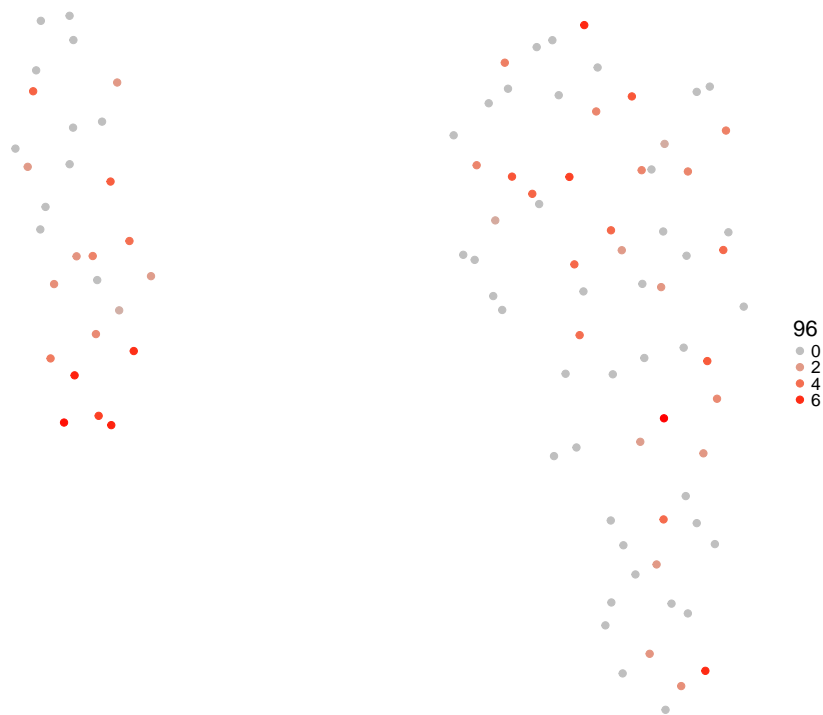
UMAP colored by TGFBR2 expression



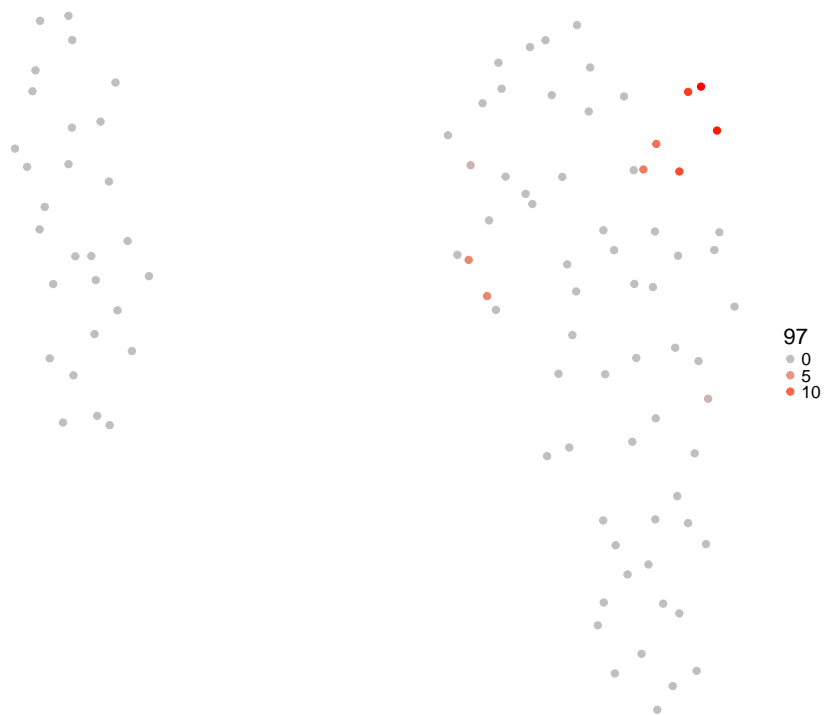
UMAP colored by IGF2 expression



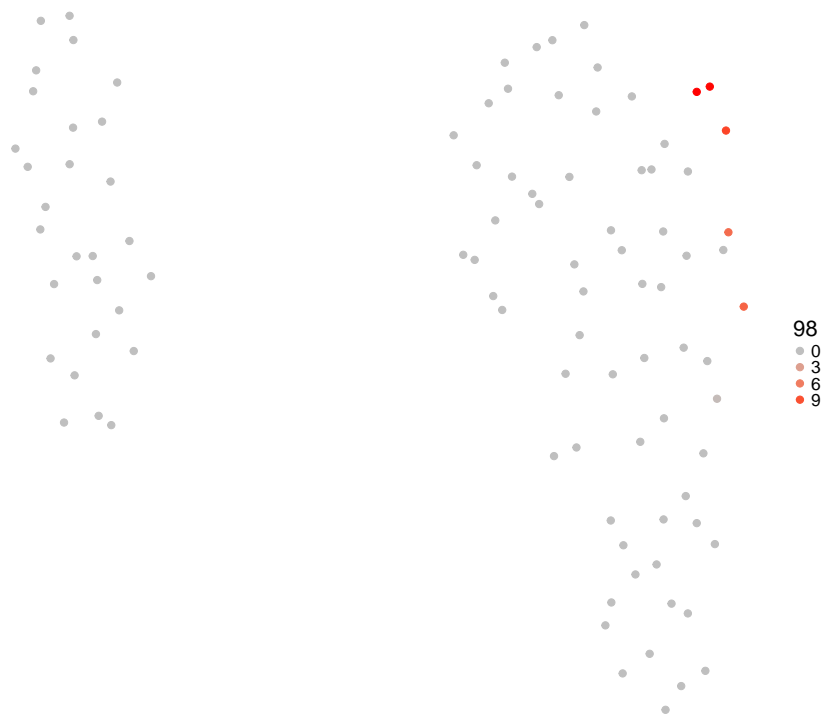
UMAP colored by COL1A1 expression



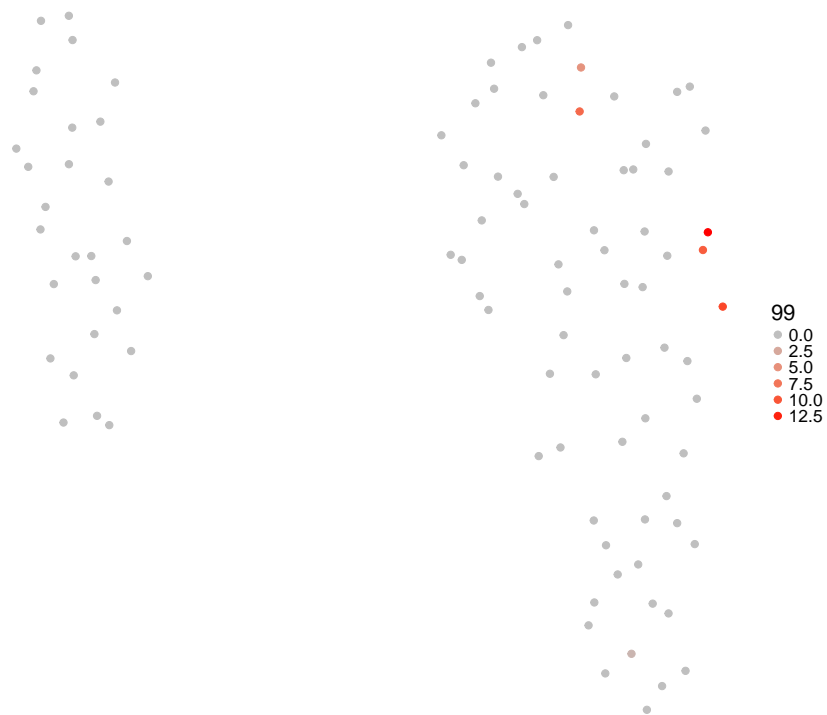
UMAP colored by CD36 expression



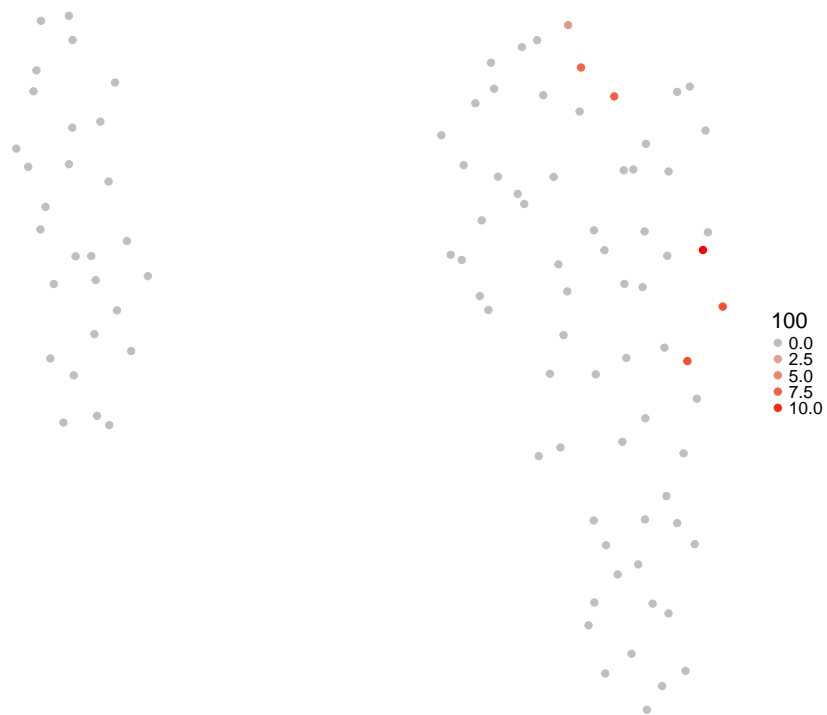
UMAP colored by FLT4 expression



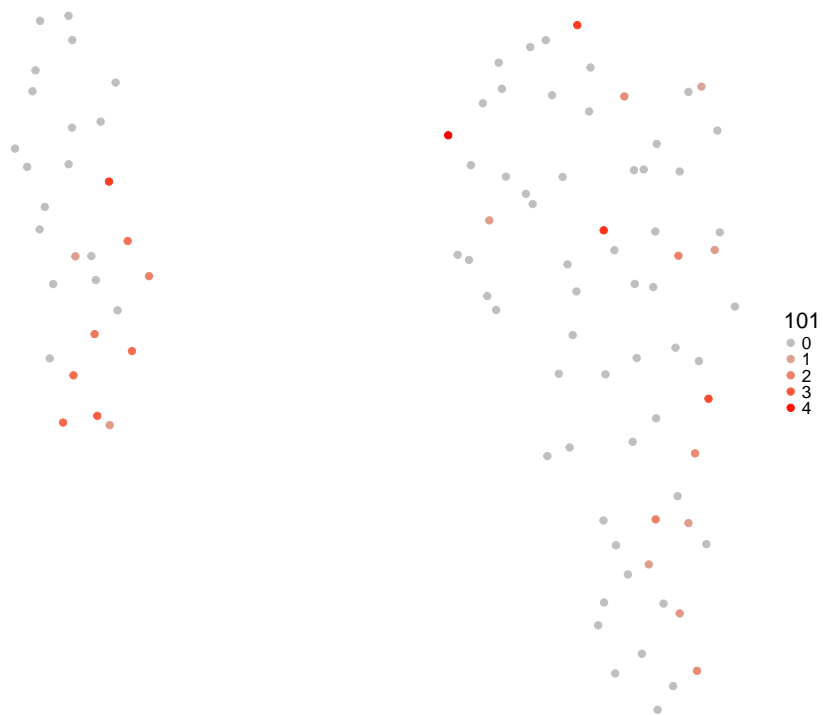
UMAP colored by PDPN expression



UMAP colored by IL7 expression

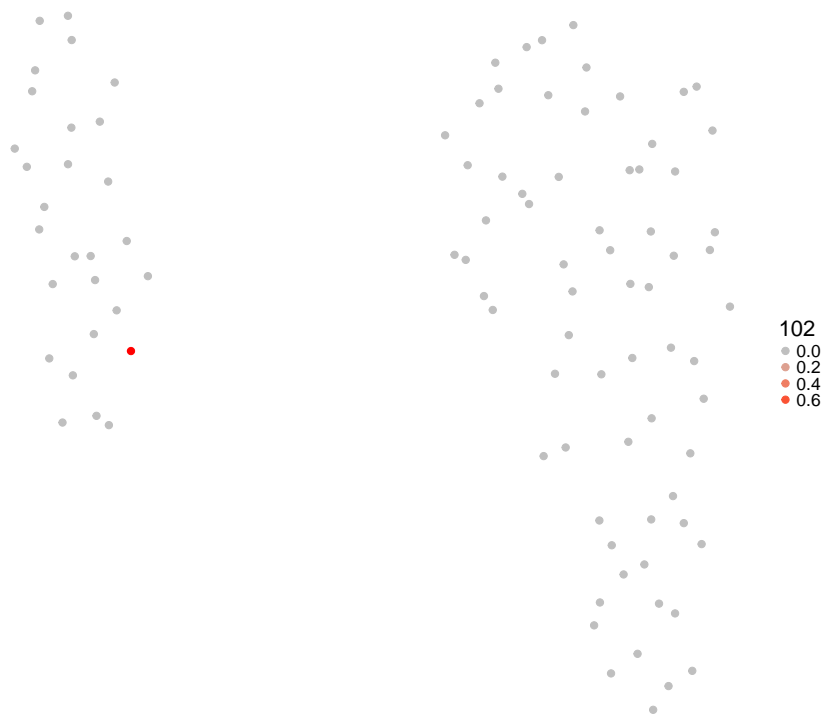


UMAP colored by MMP9 expression

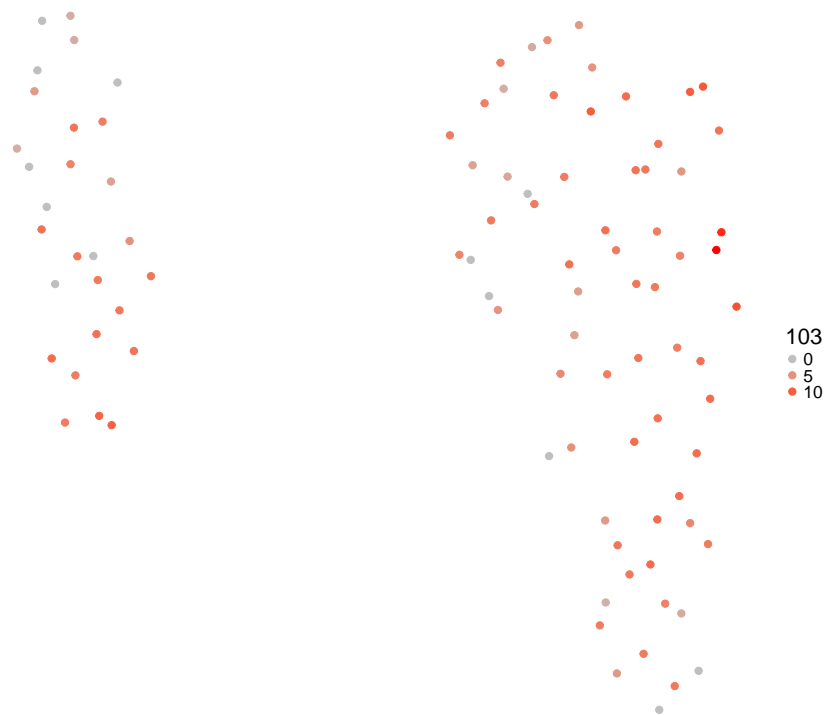




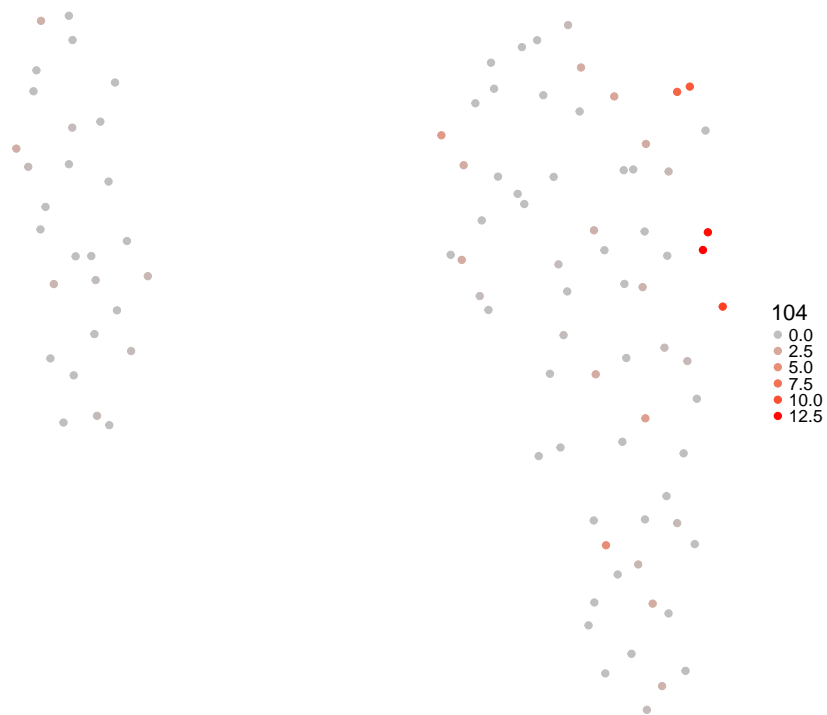
UMAP colored by MMP2 expression



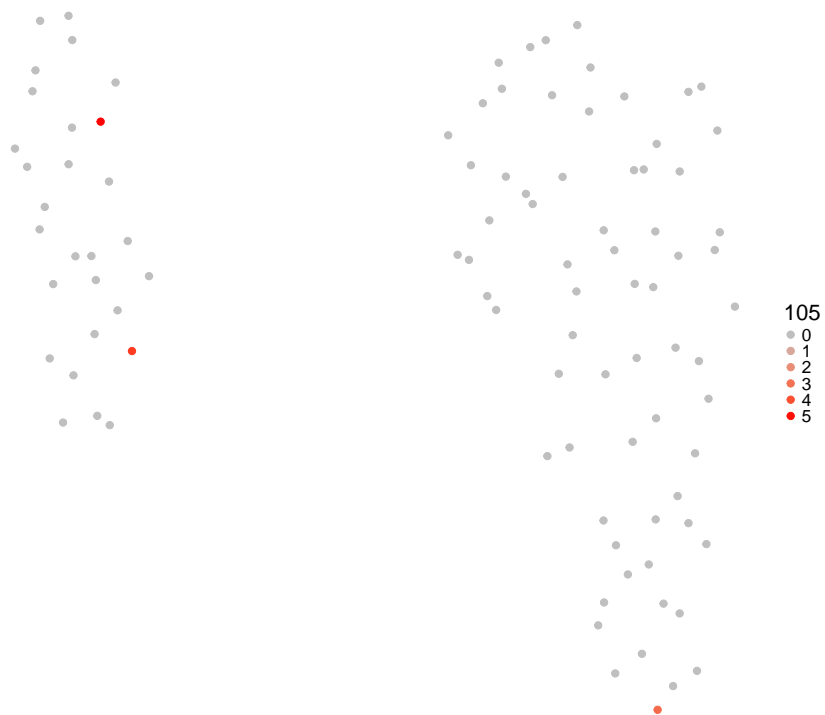
UMAP colored by CD14 expression



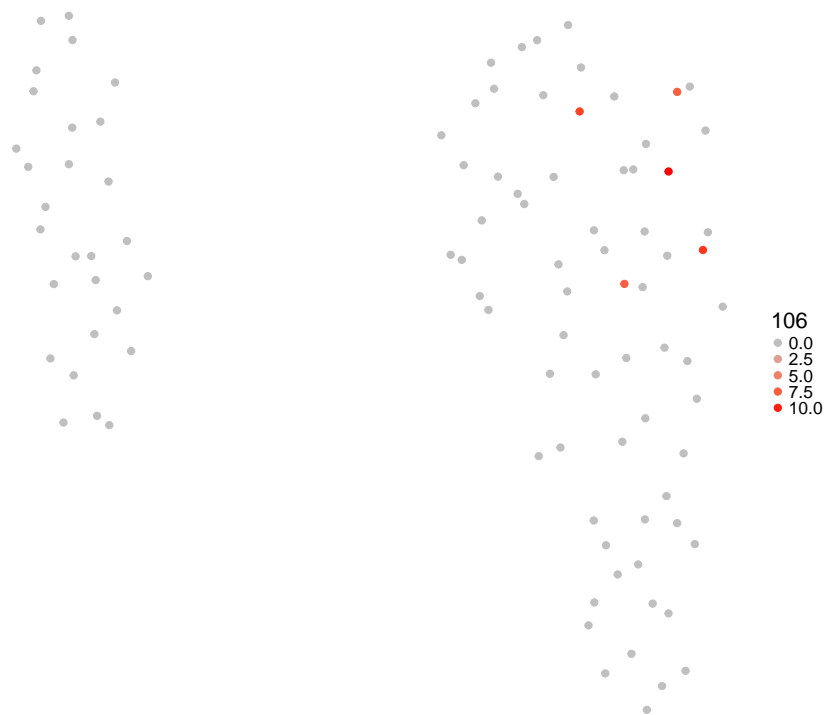
UMAP colored by IGF1 expression



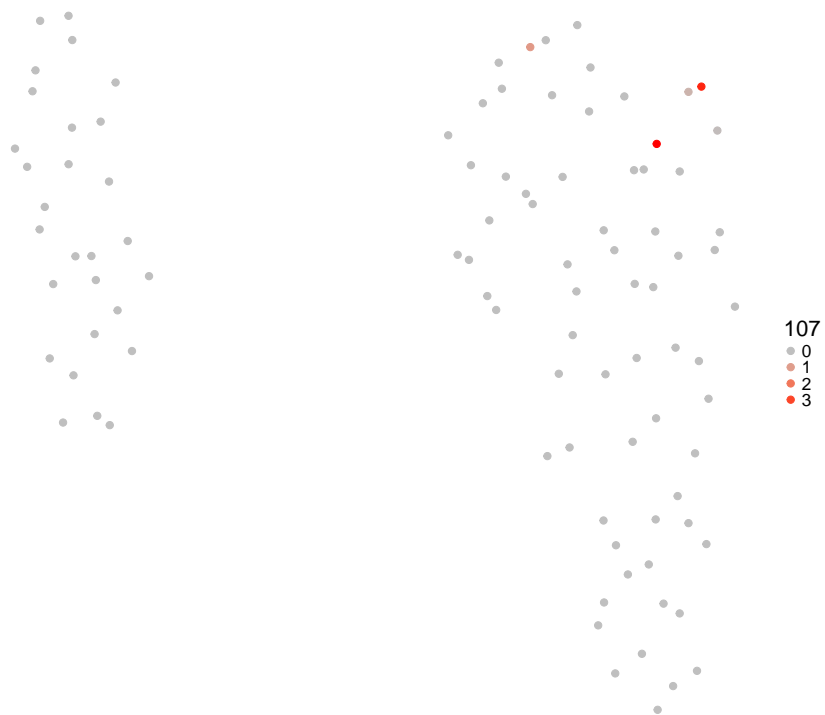
UMAP colored by ZEB2 expression



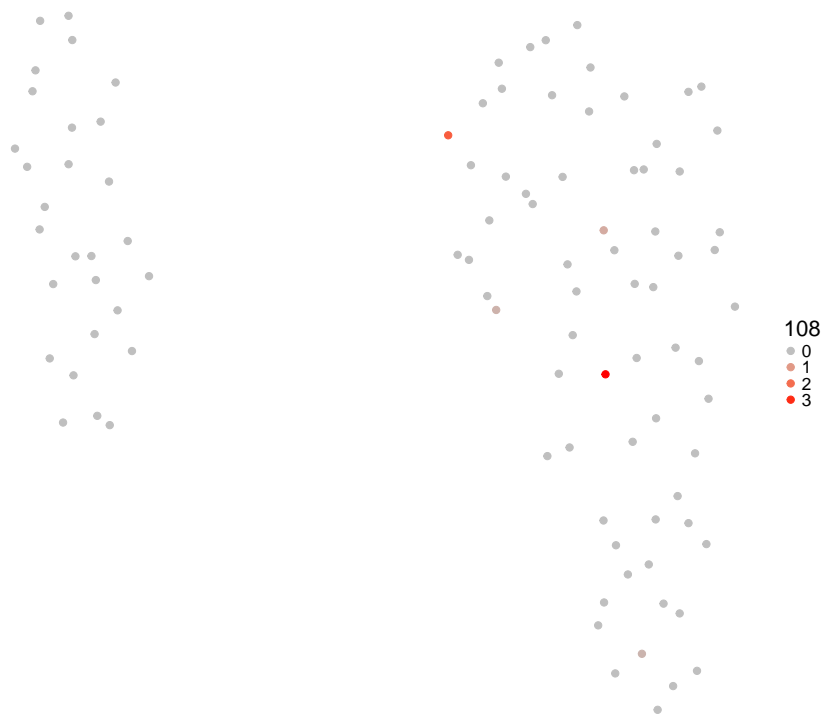
UMAP colored by FGR expression



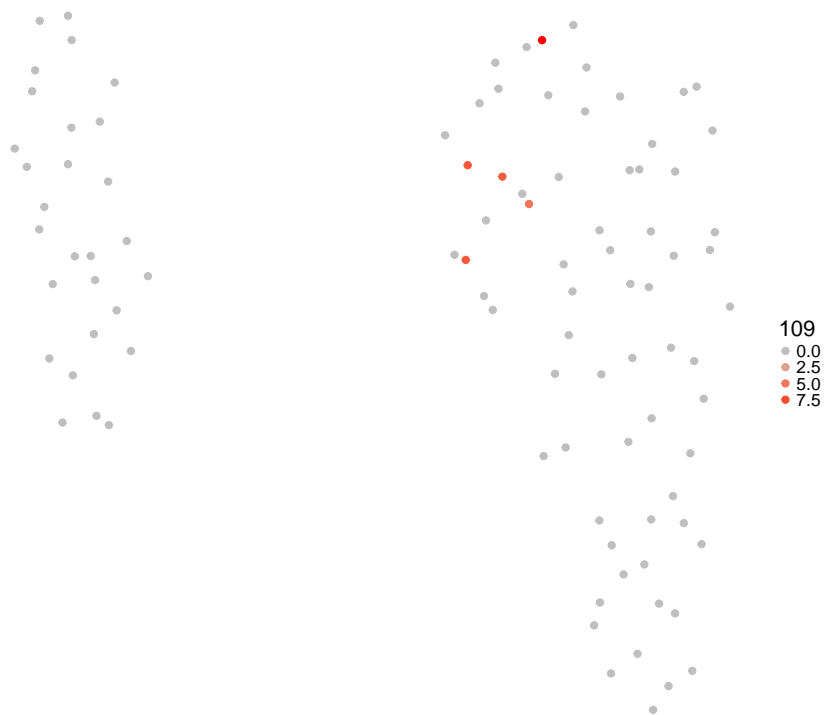
UMAP colored by CEACAM1 expression



UMAP colored by BMP5 expression

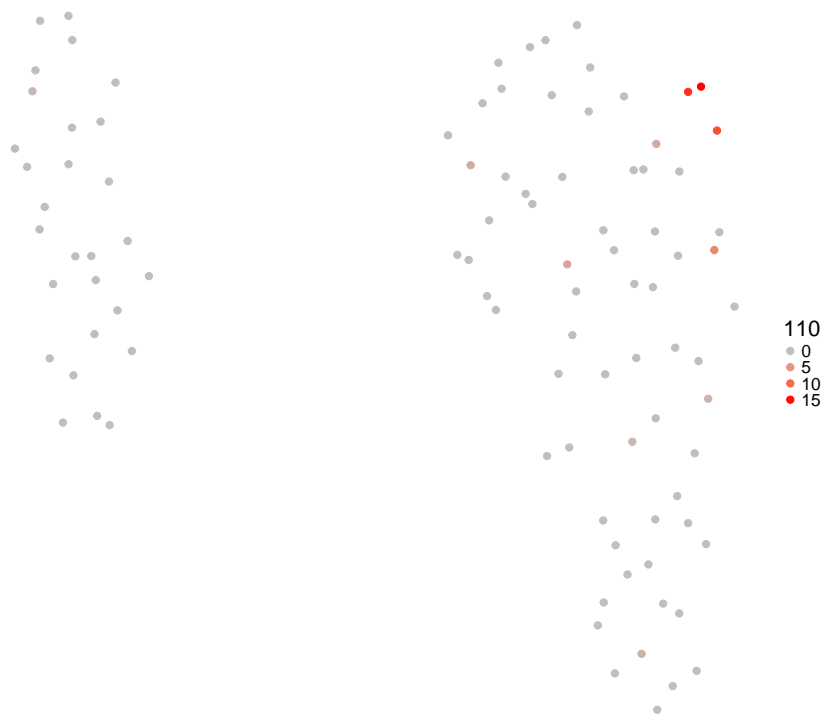


UMAP colored by COL1A2 expression

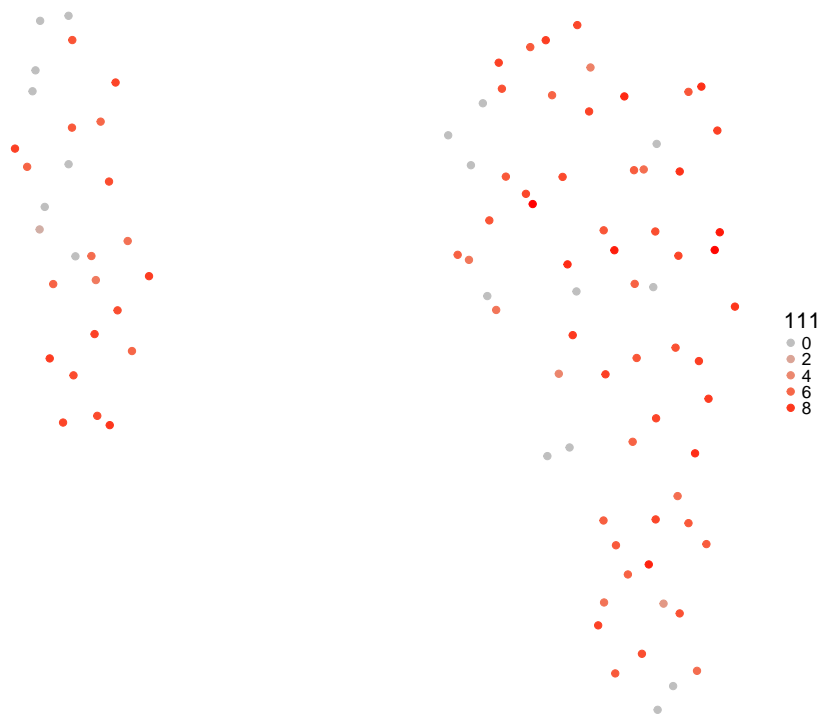




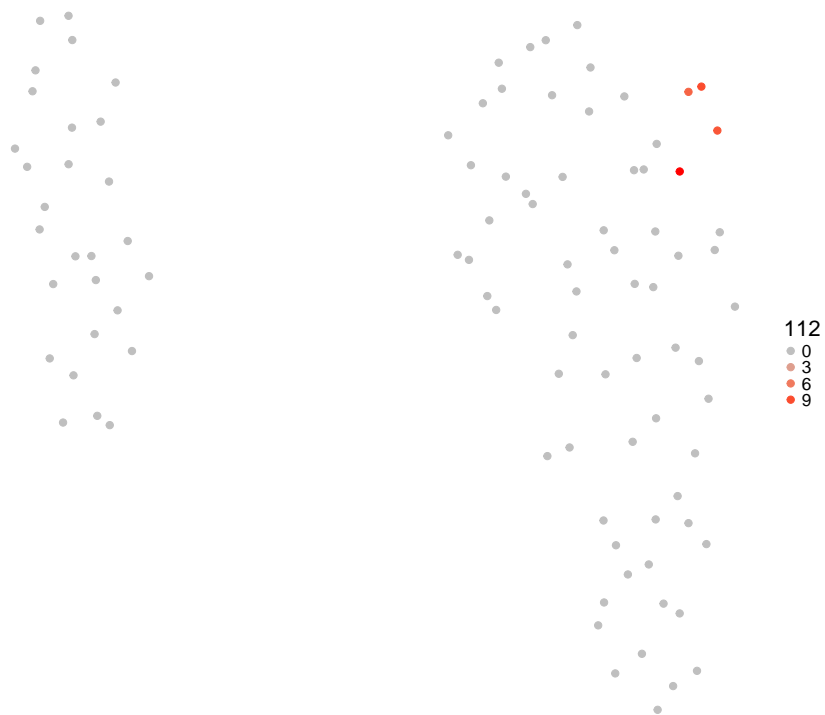
UMAP colored by LEPR expression



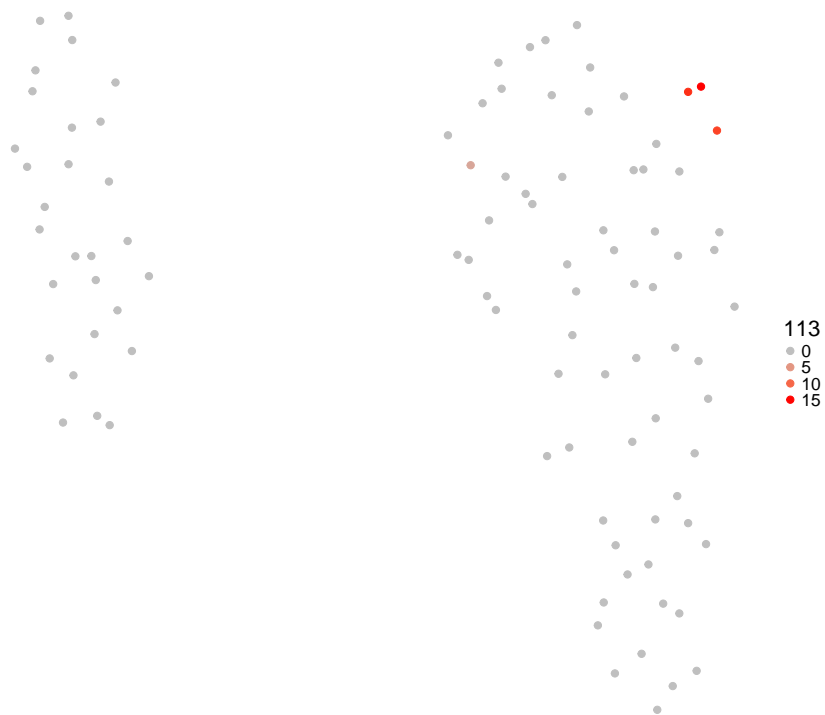
UMAP colored by GHRL expression



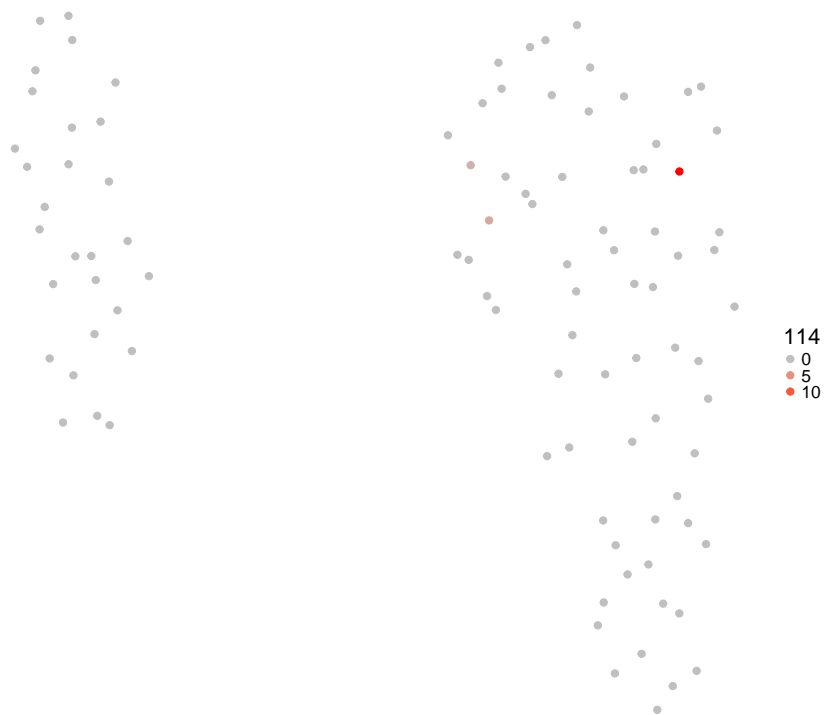
UMAP colored by AIM2 expression



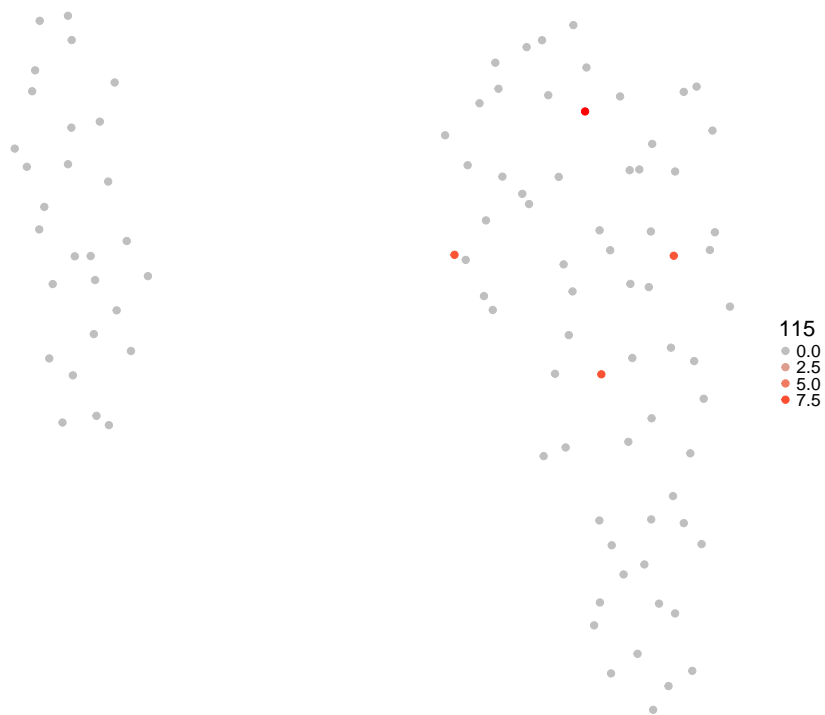
UMAP colored by TEK expression



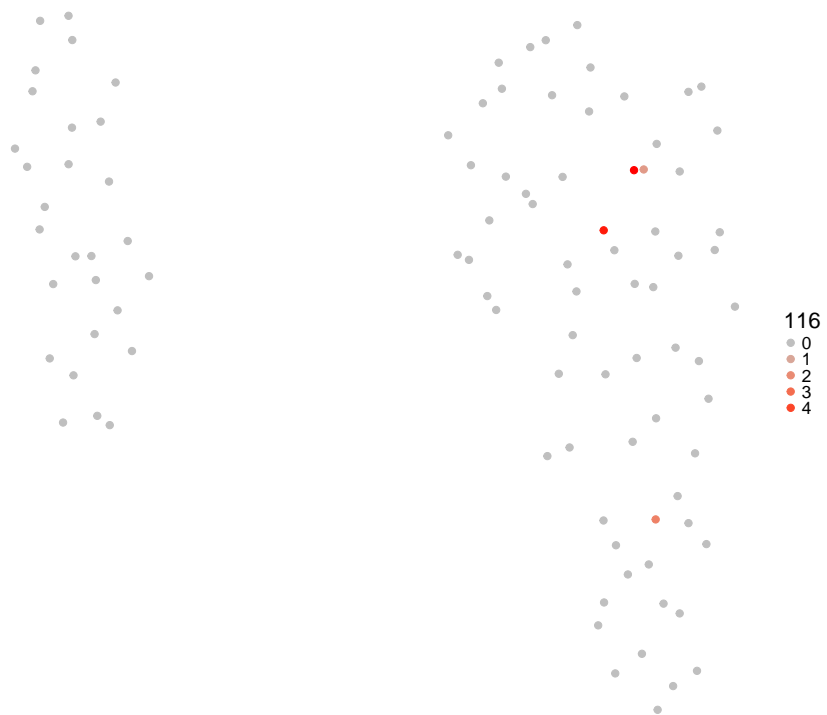
UMAP colored by CD86 expression



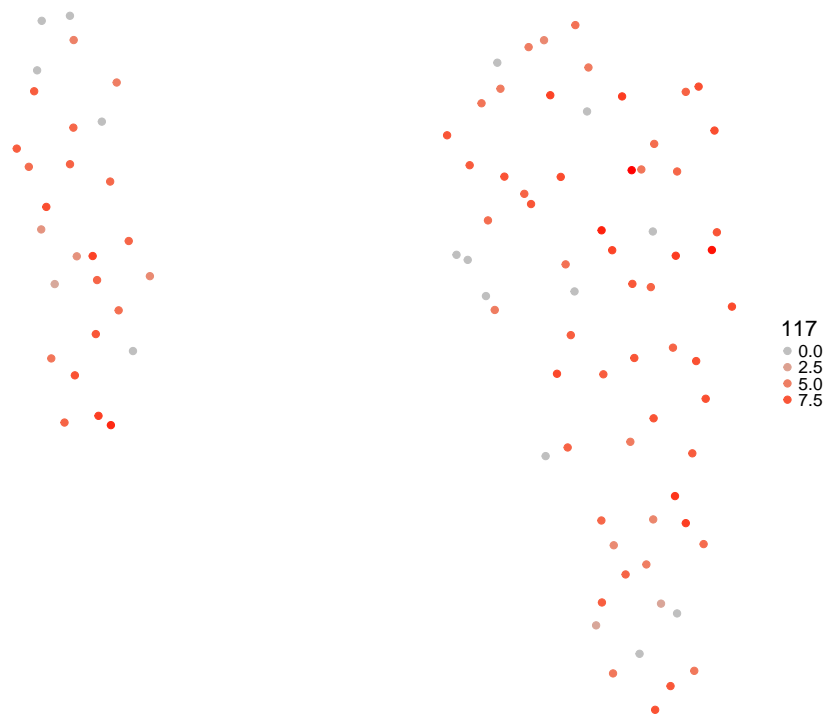
UMAP colored by STAT4 expression



UMAP colored by TNFSF11 expression

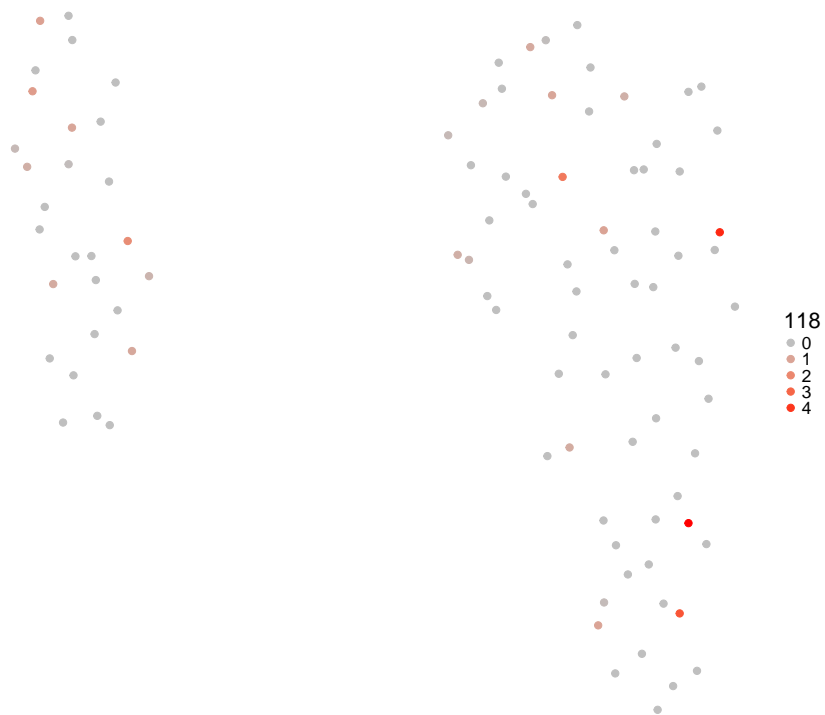


UMAP colored by PTGS2 expression

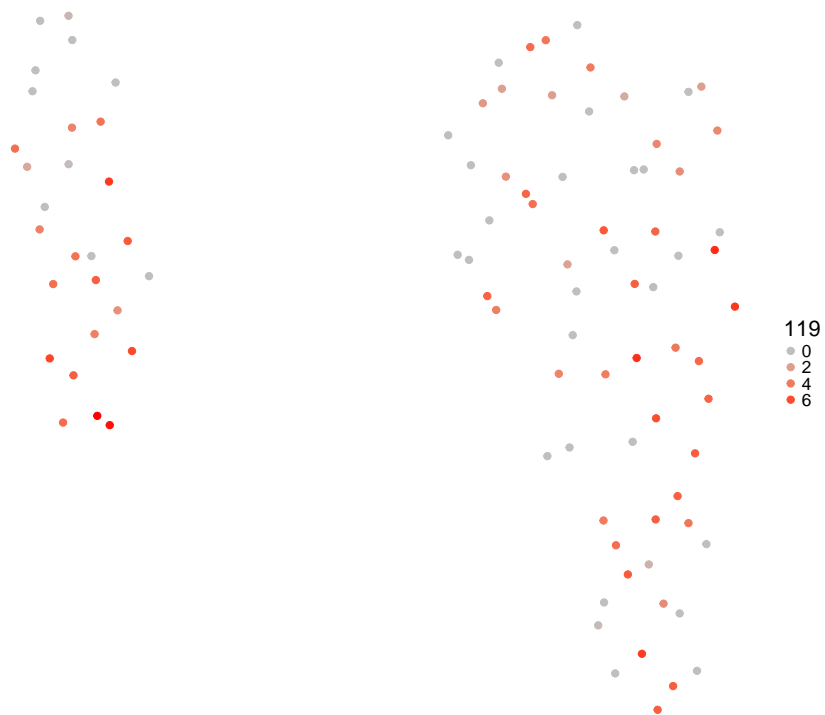




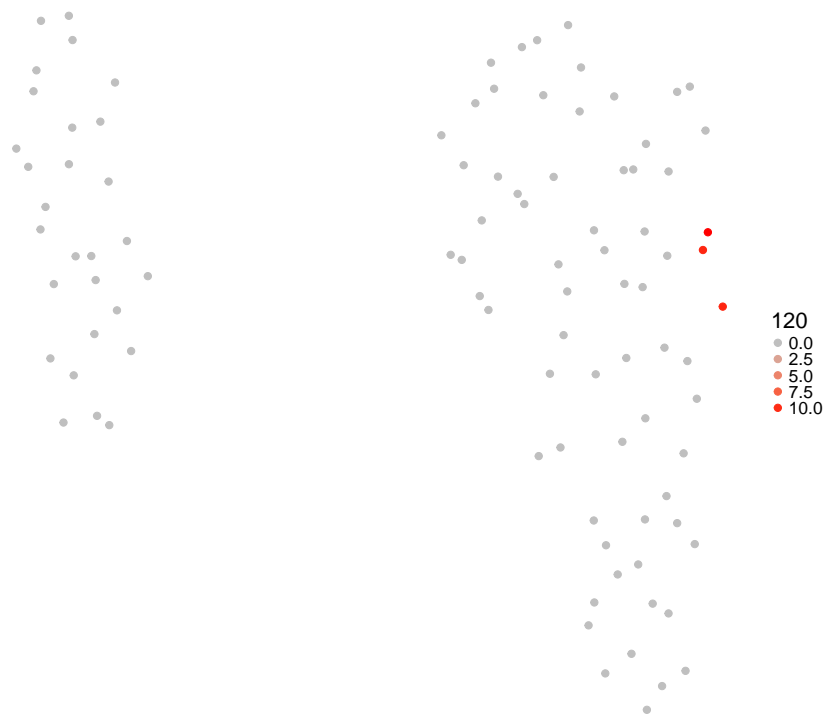
UMAP colored by OASL1 expression



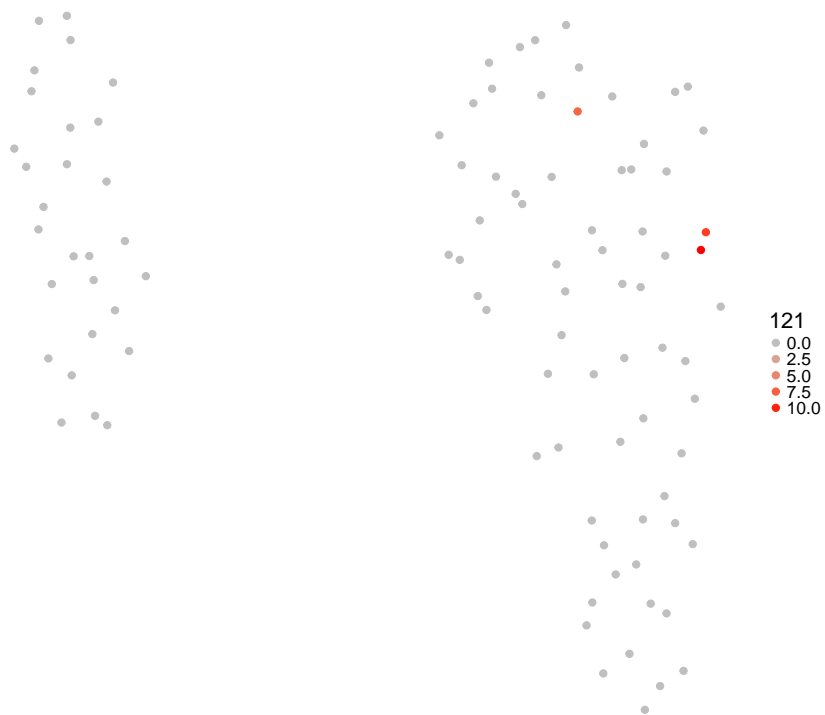
UMAP colored by IL25 expression



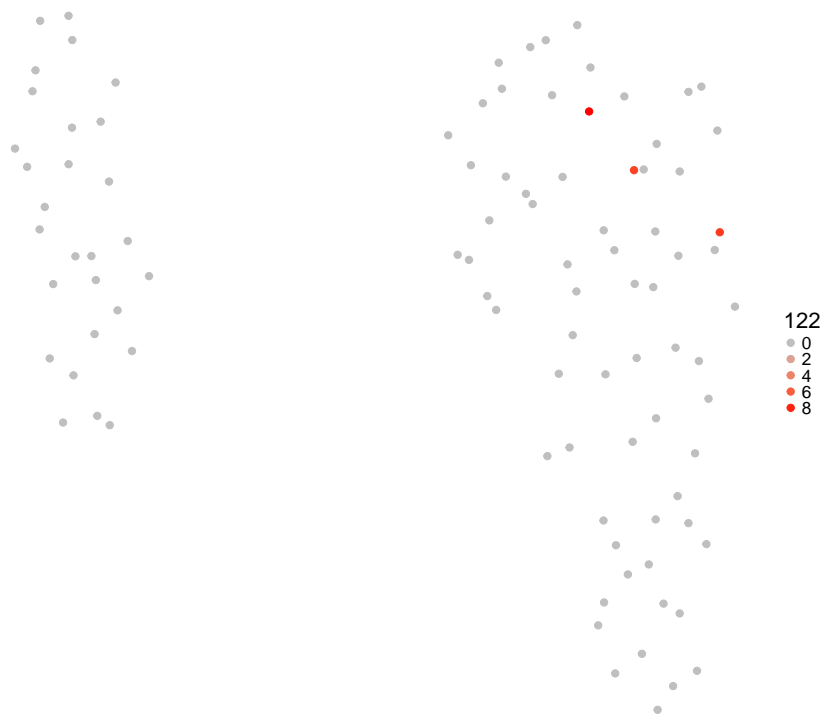
UMAP colored by IL18R1 expression



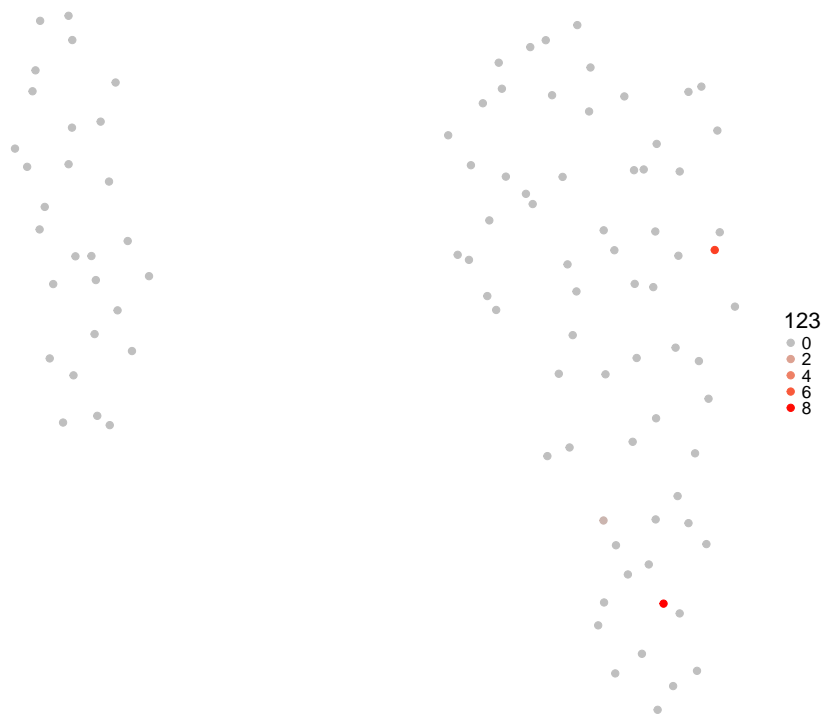
UMAP colored by IL34 expression



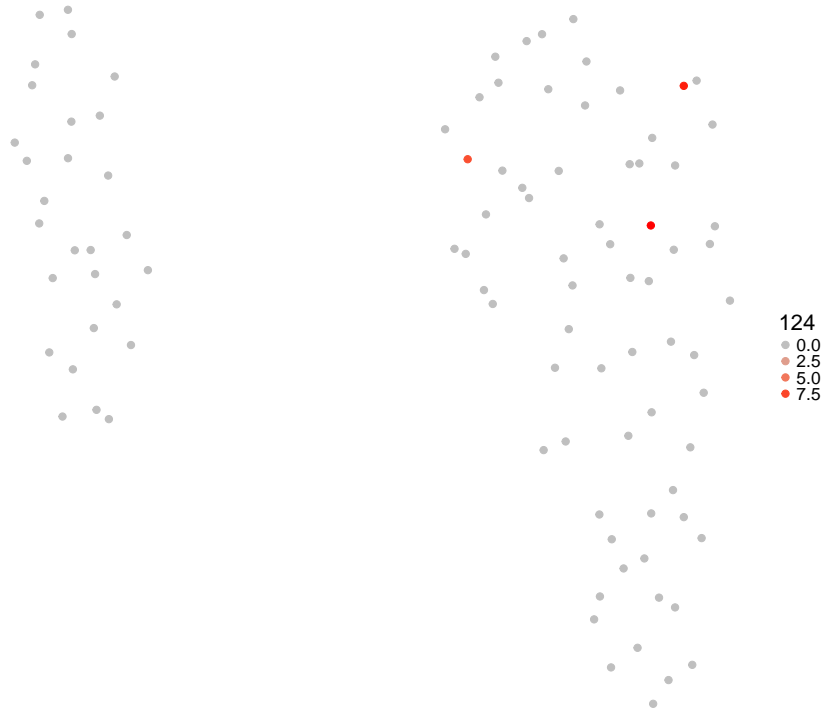
UMAP colored by IL12RB expression



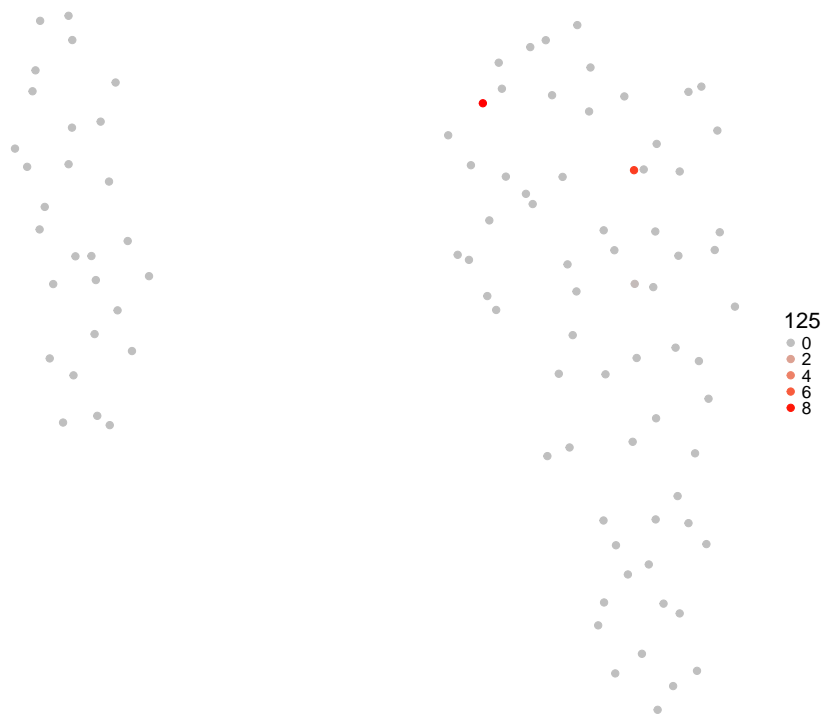
UMAP colored by LCK expression



UMAP colored by MAPK8 expression

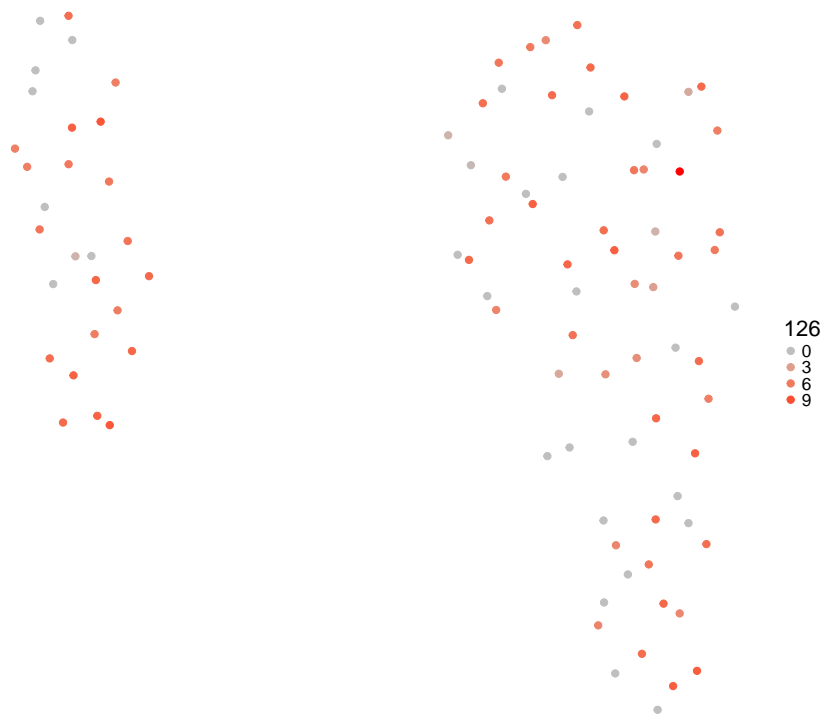


UMAP colored by IL1R2 expression

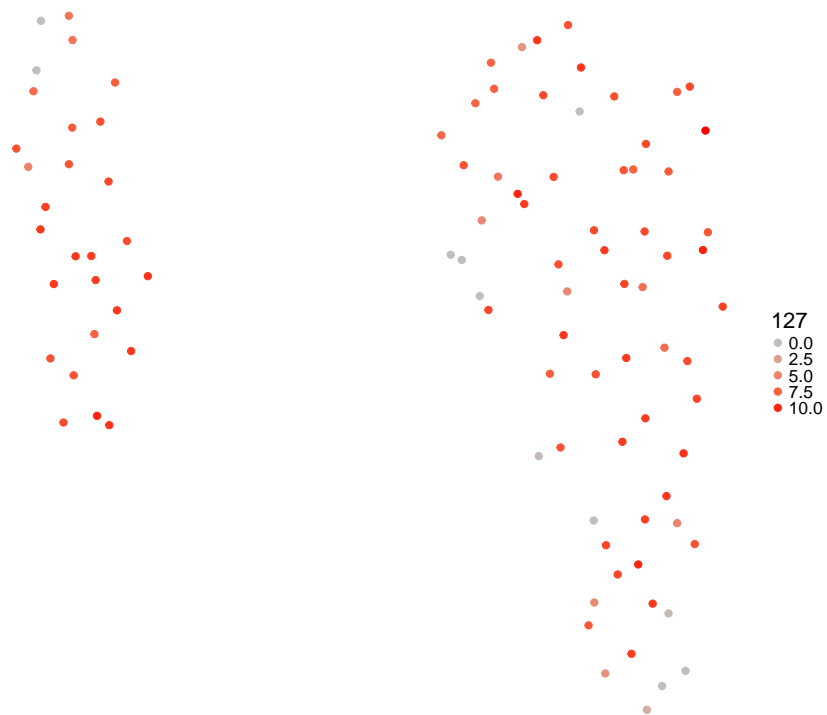




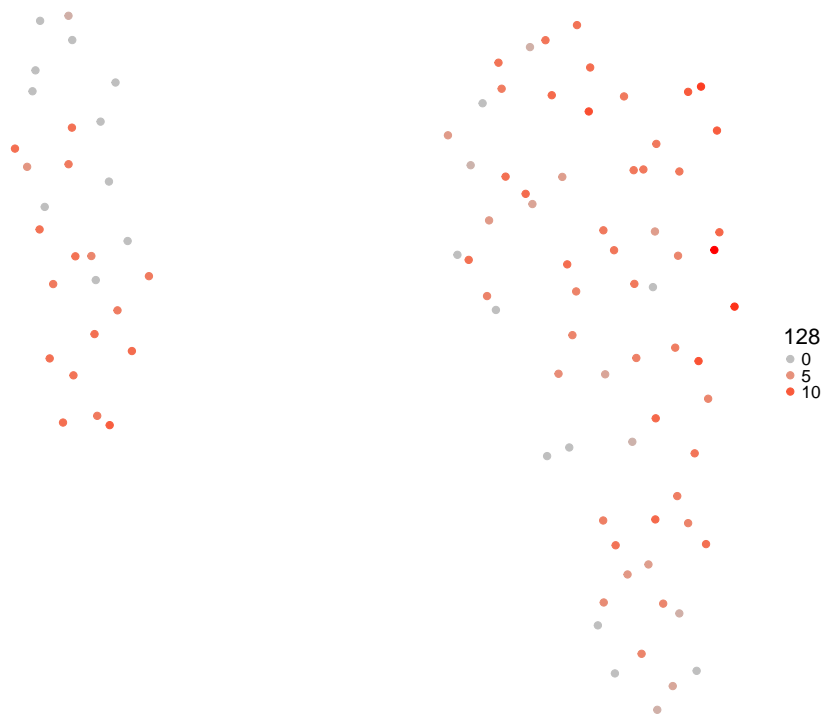
UMAP colored by ITGAX expression



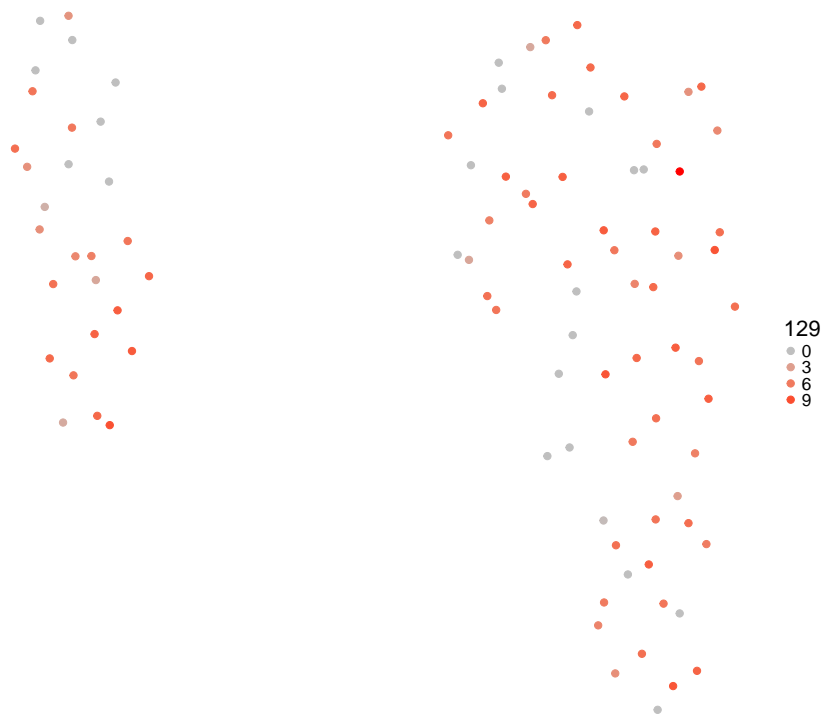
UMAP colored by CCR6 expression



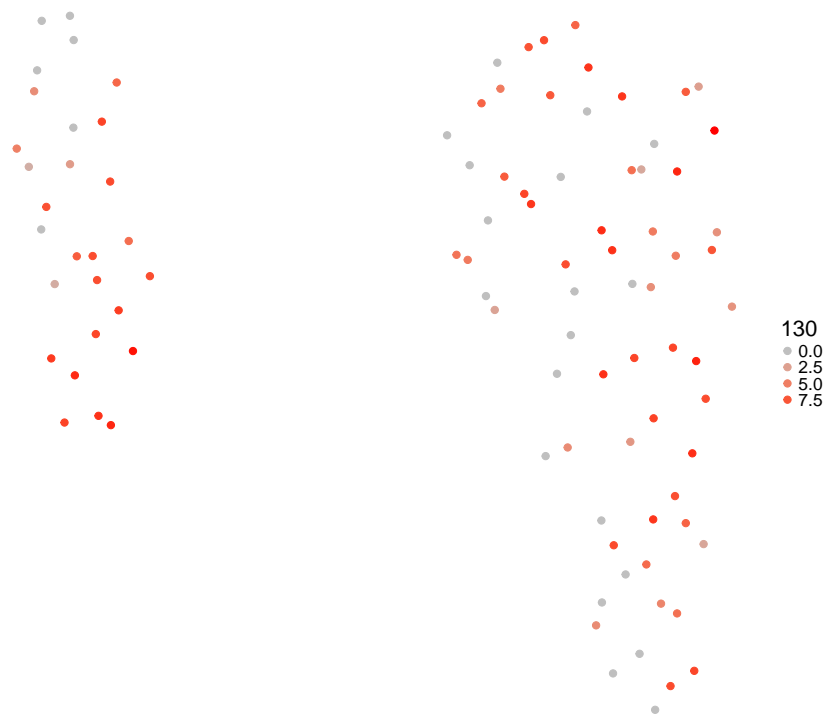
UMAP colored by FGFR3 expression



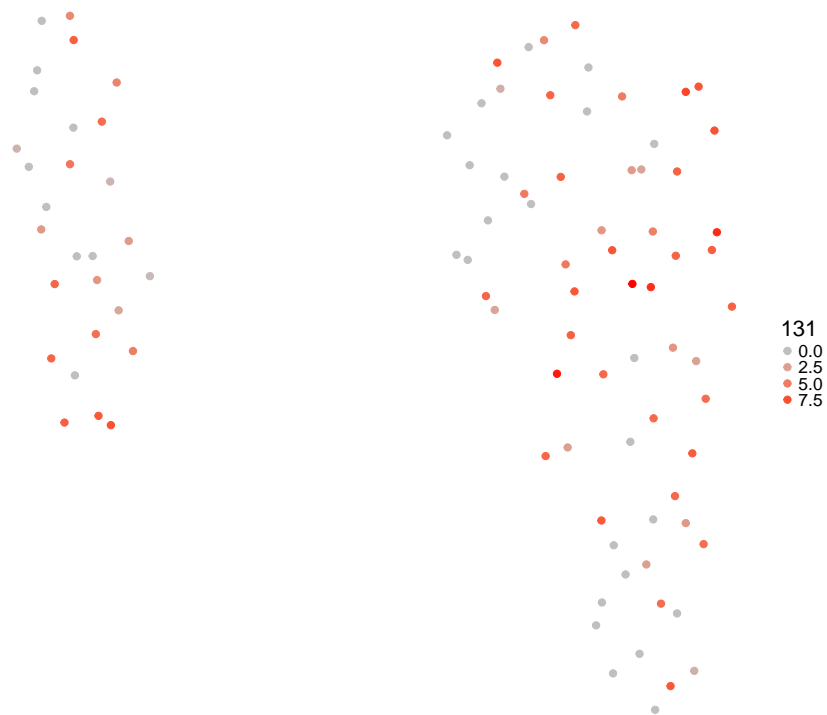
UMAP colored by VAV1 expression



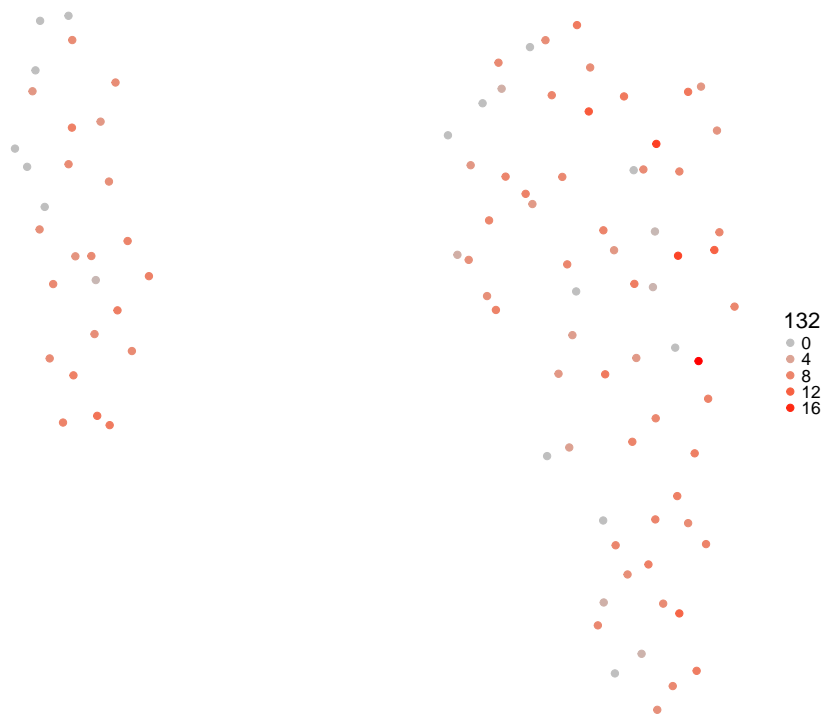
UMAP colored by DES expression



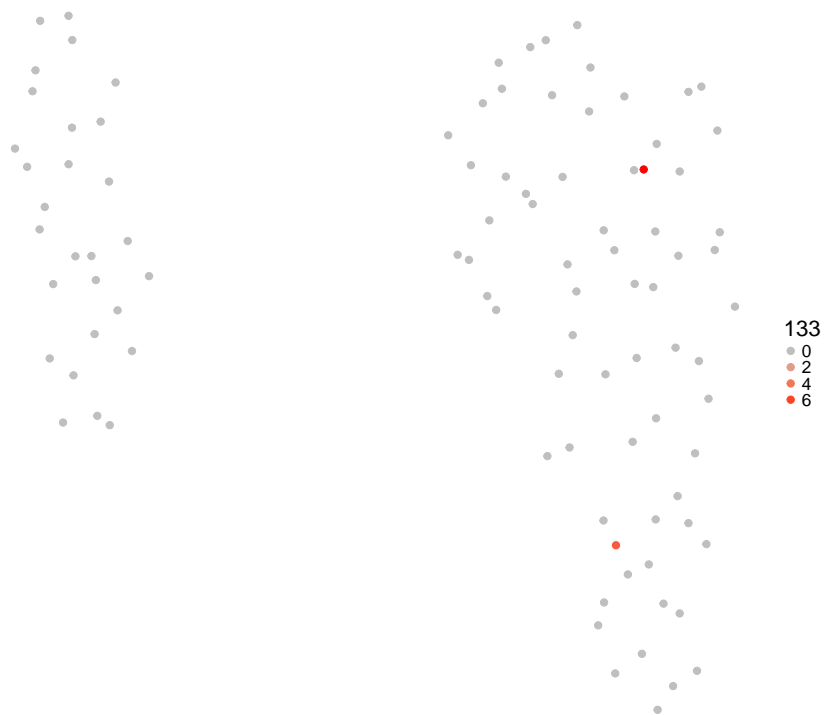
UMAP colored by TIMP1 expression



UMAP colored by CXCL10 expression

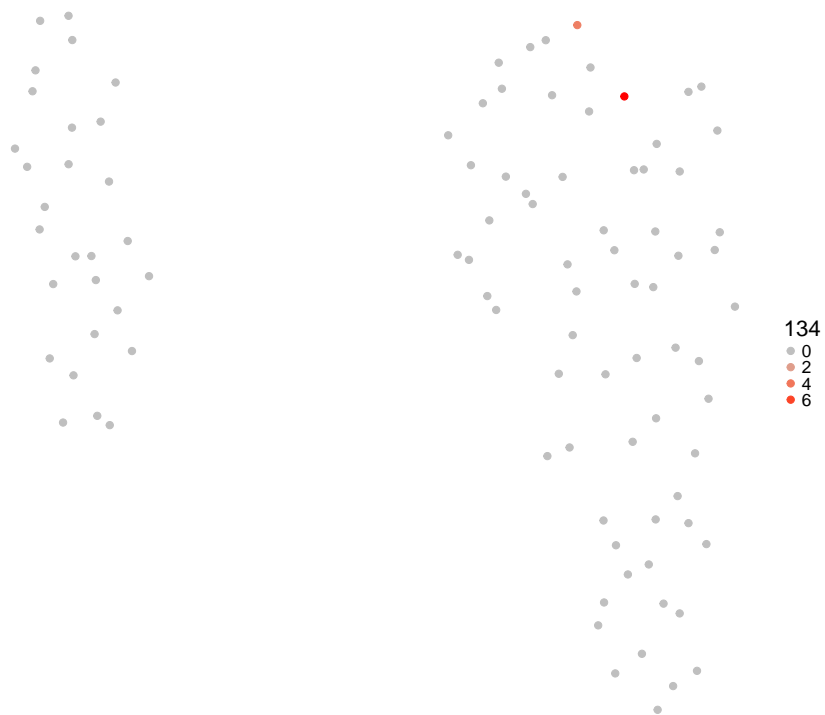


UMAP colored by FAP expression

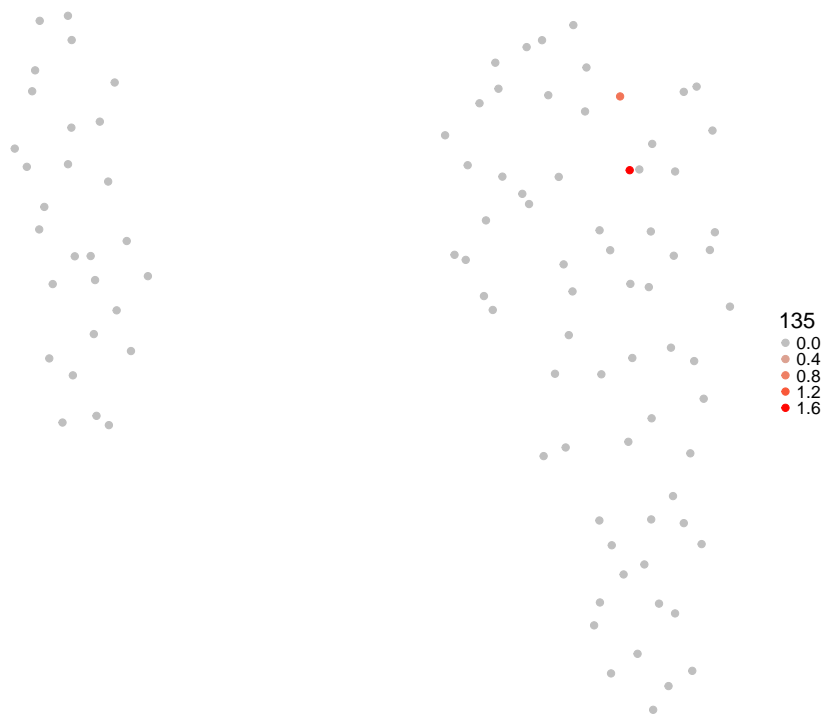




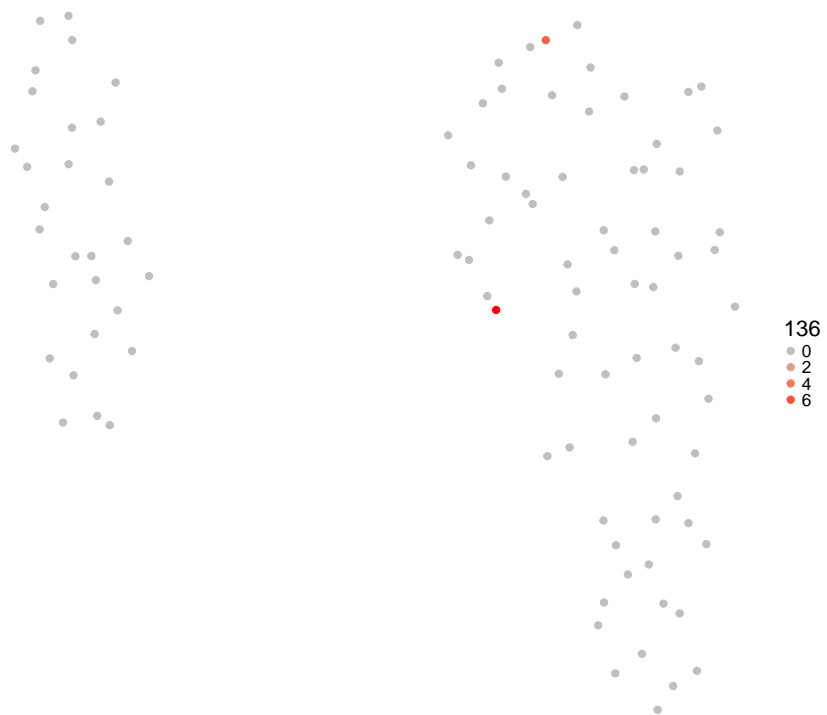
UMAP colored by IL-21 expression



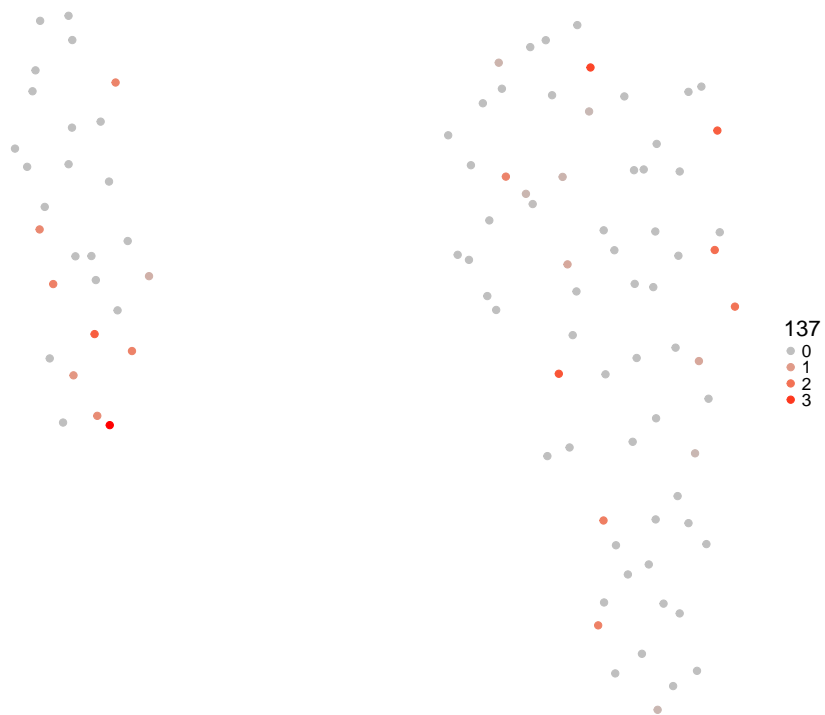
UMAP colored by MMP3 expression



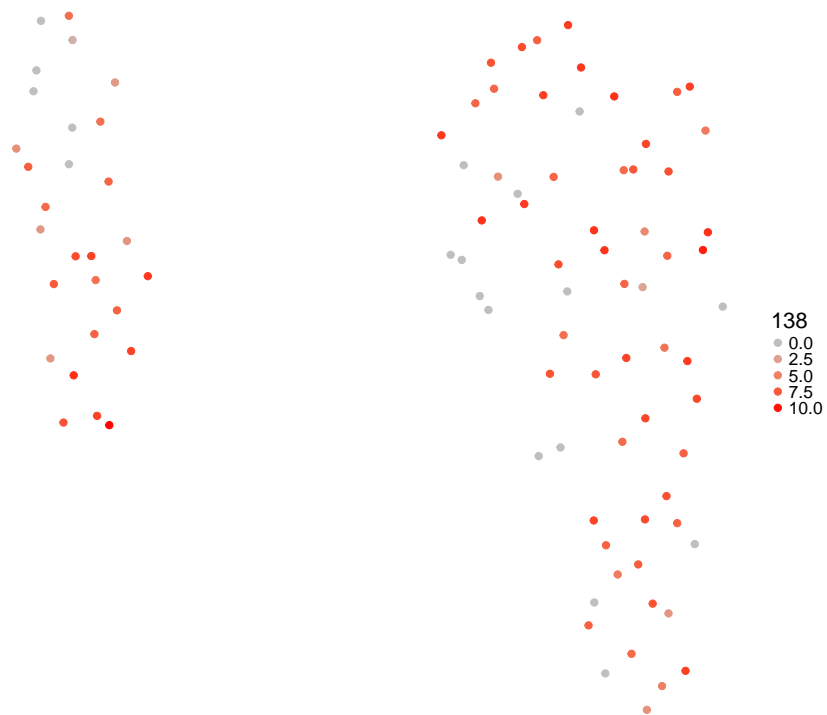
UMAP colored by ZAP70 expression



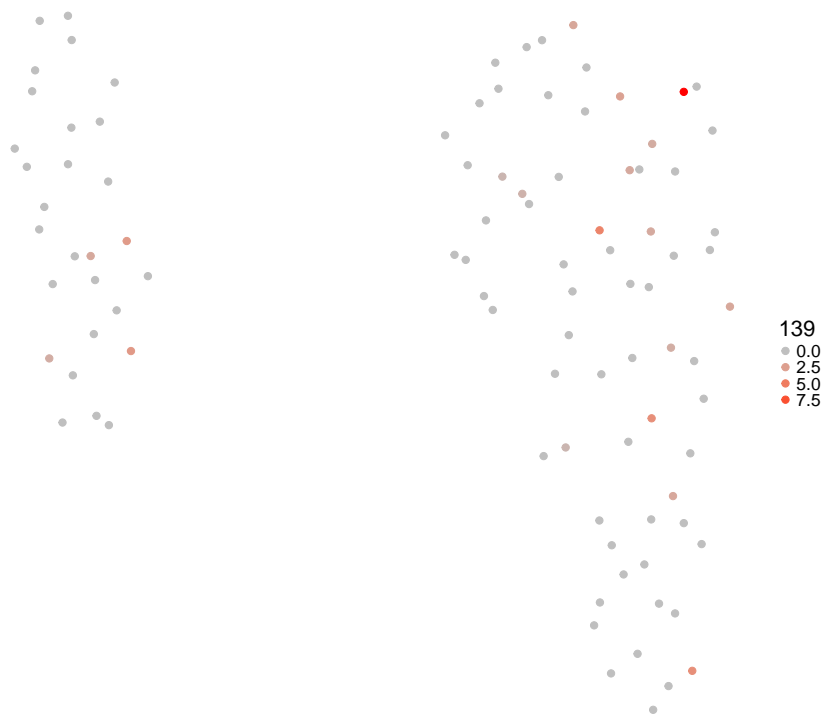
UMAP colored by GFAP expression



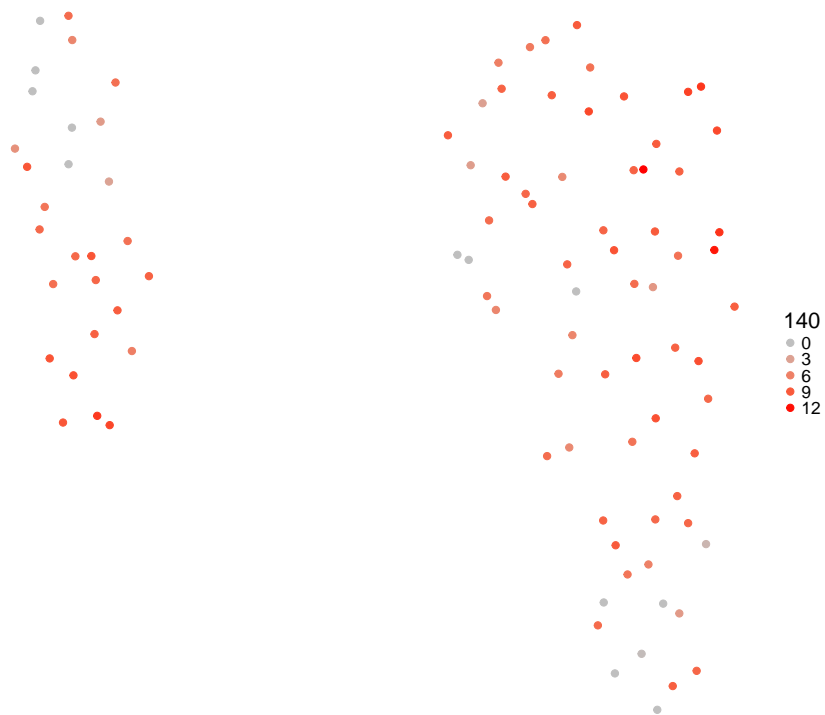
UMAP colored by TNC expression



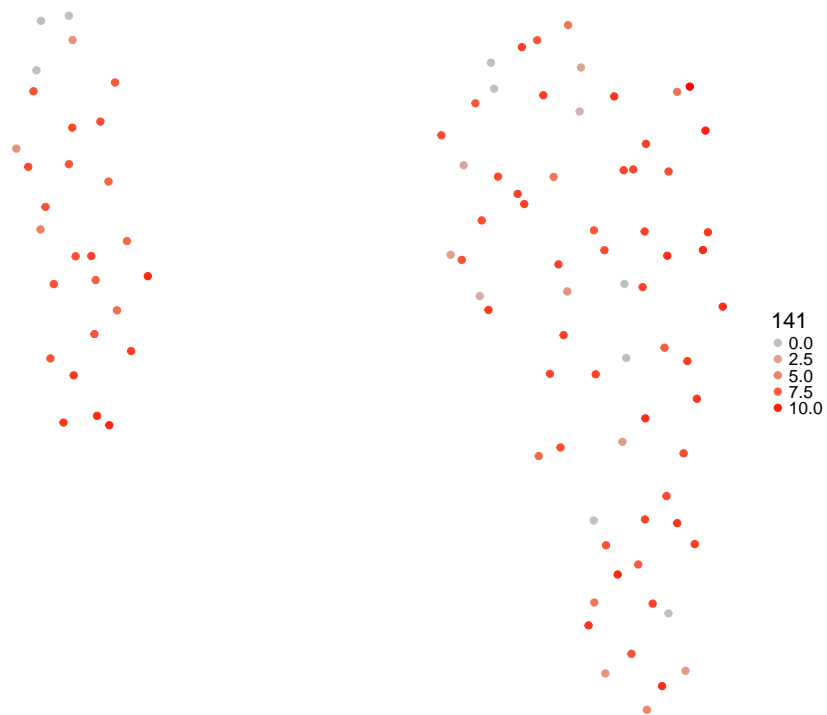
UMAP colored by SELE expression



UMAP colored by ISG15 expression

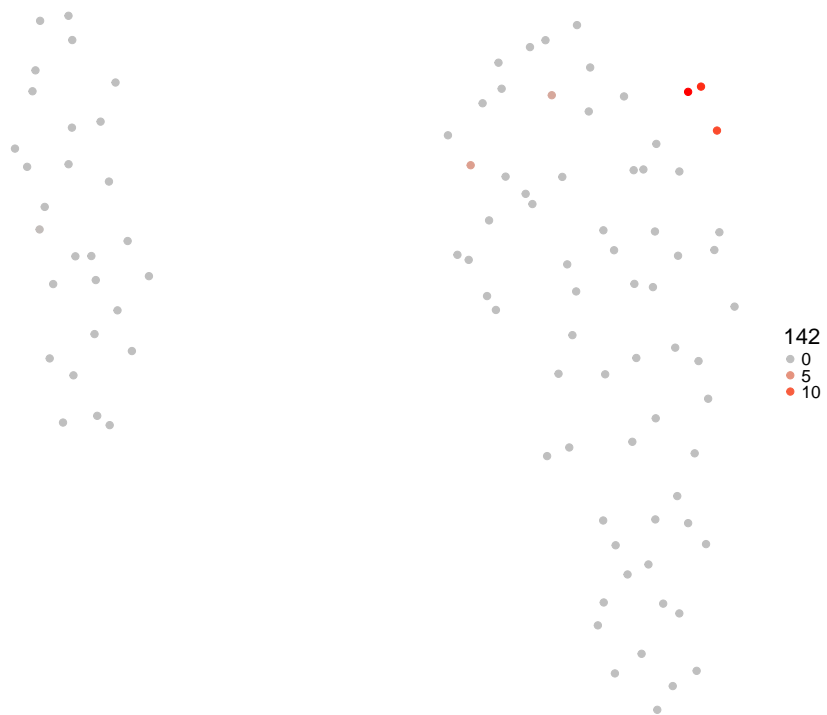


UMAP colored by CXCL13 expression

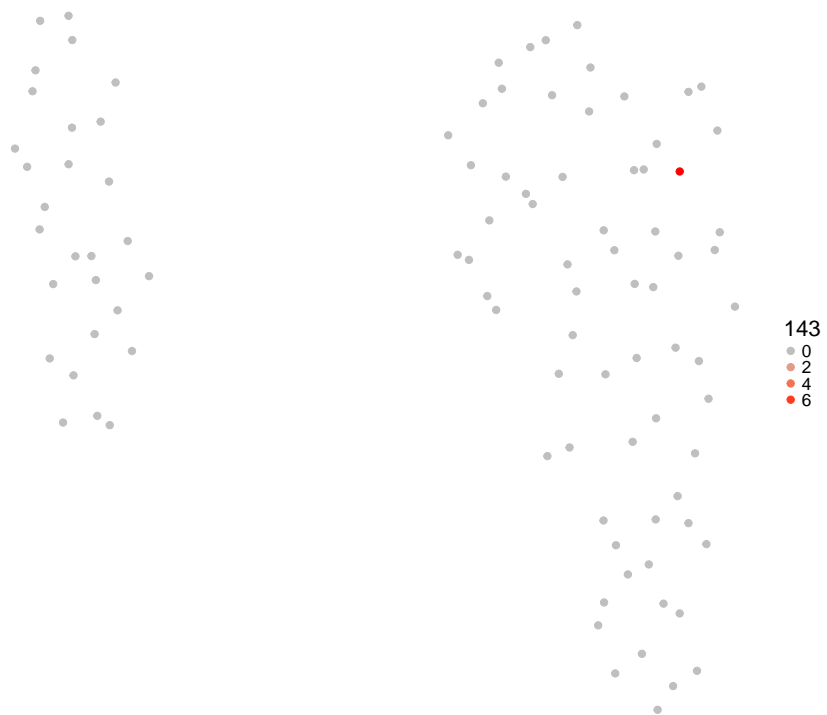




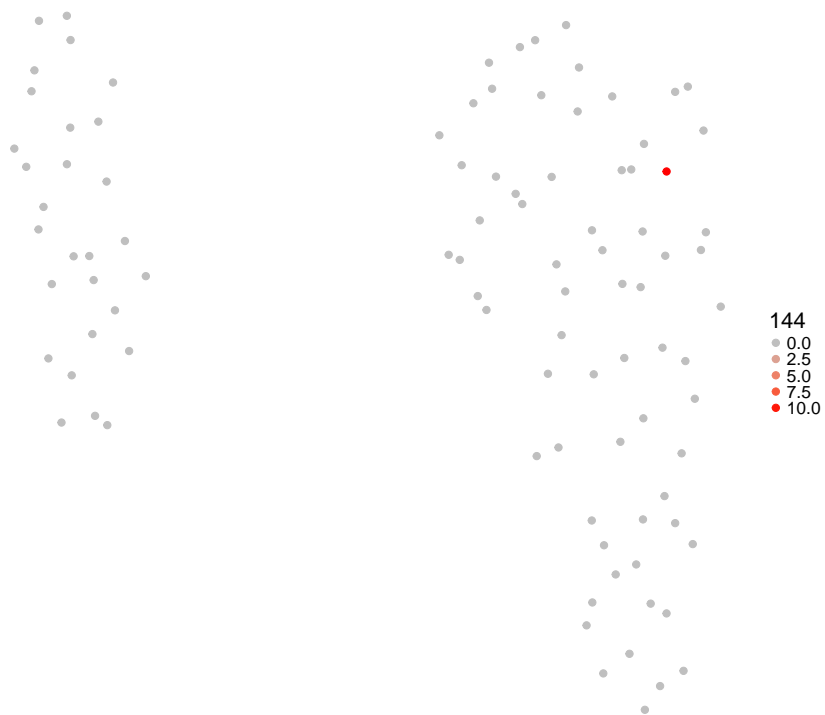
UMAP colored by KDR expression



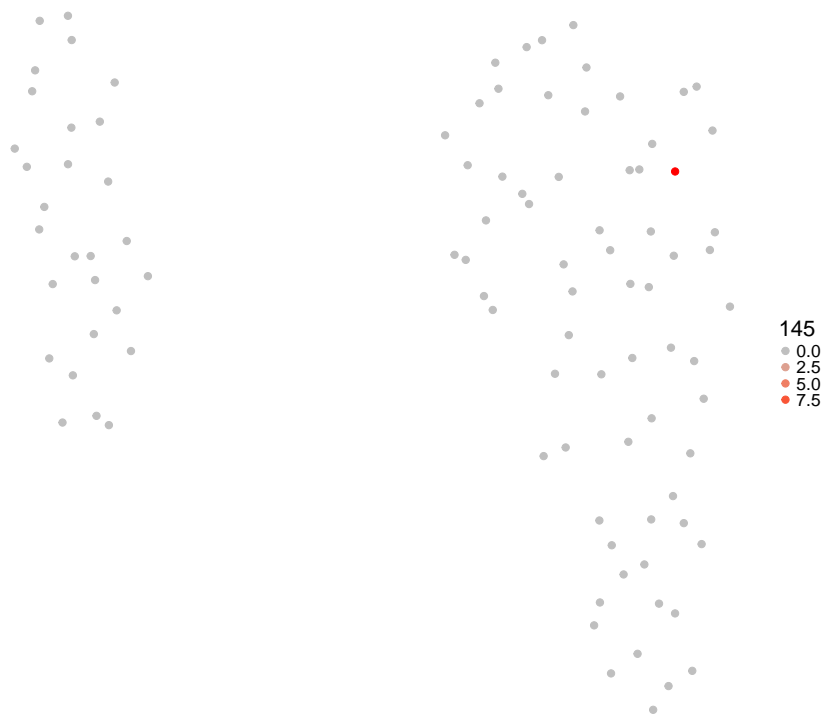
UMAP colored by ADGRE1 expression



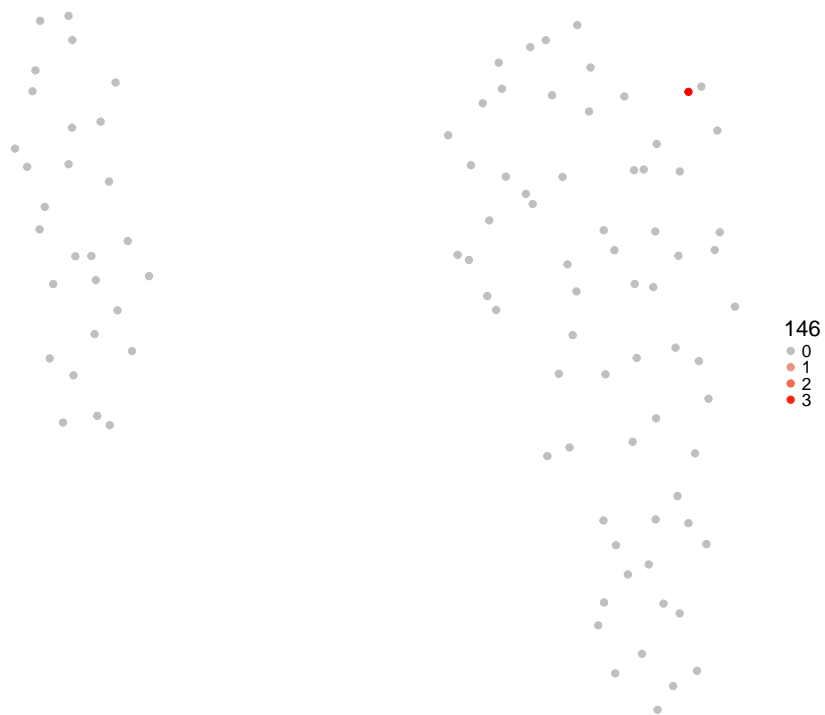
UMAP colored by CD80 expression



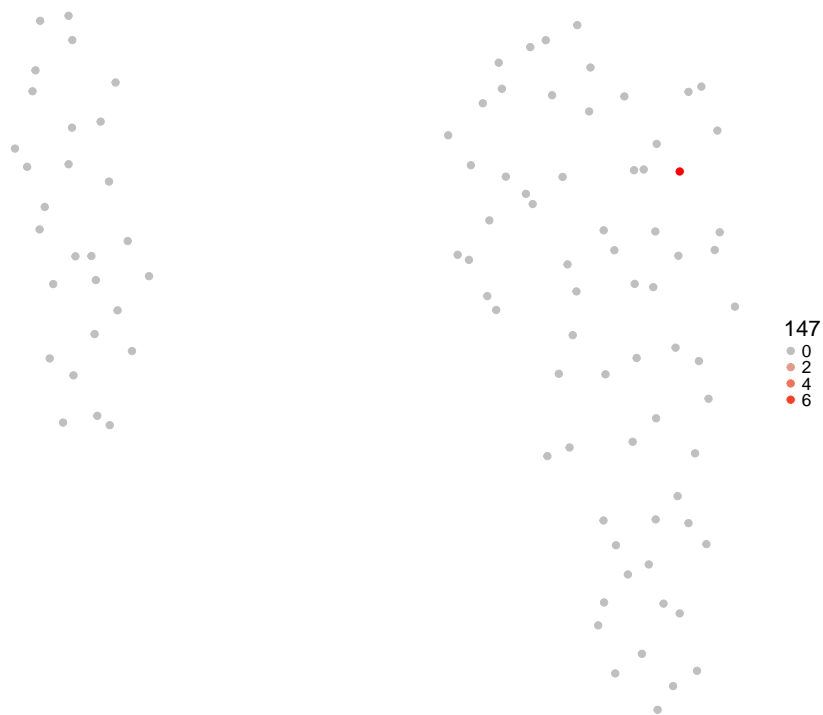
UMAP colored by CXCR3 expression



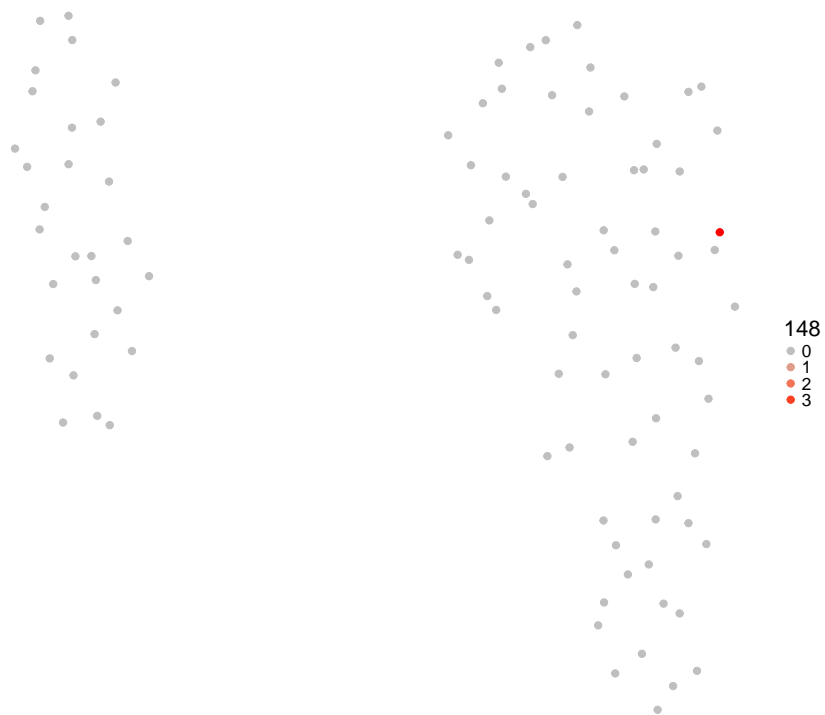
UMAP colored by IL6 expression



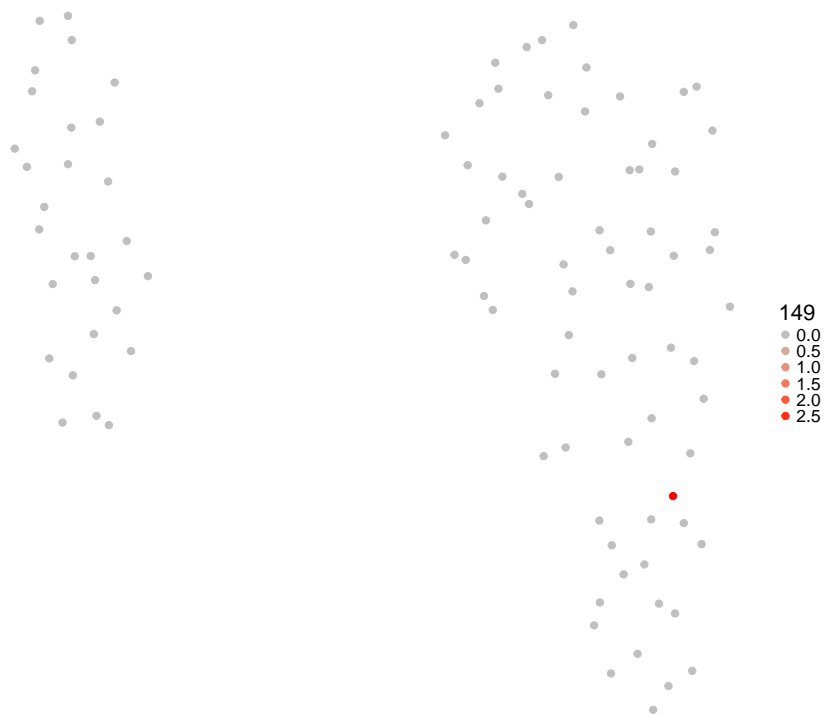
UMAP colored by NLRP3 expression



UMAP colored by TBX21 expression

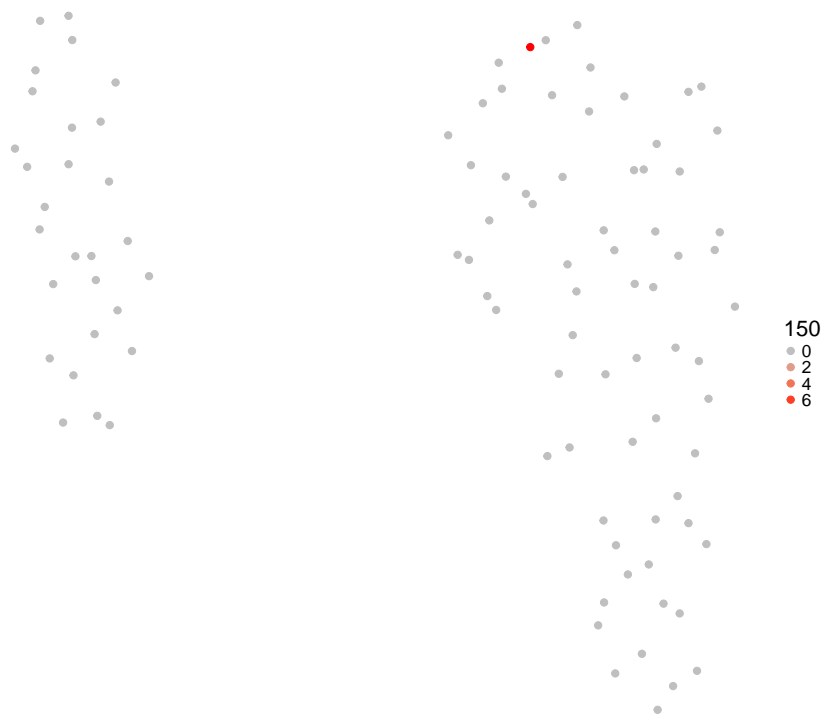


UMAP colored by CLEC7A expression

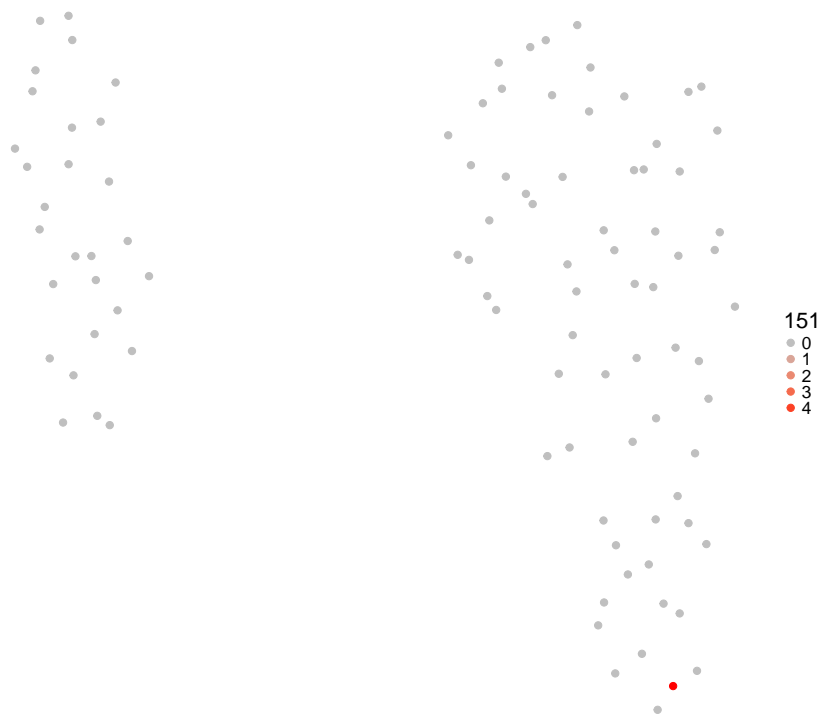




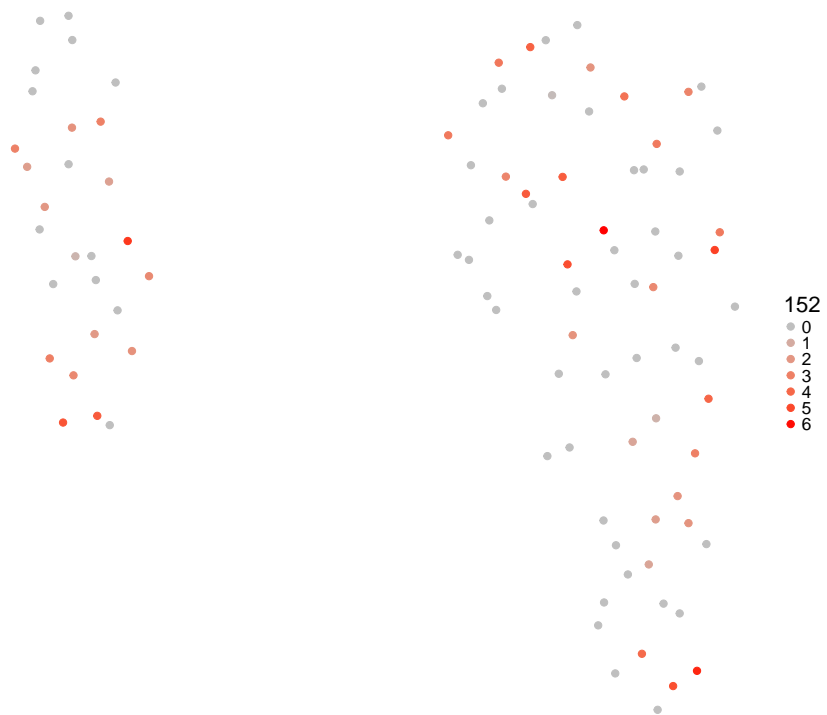
UMAP colored by CTLA4 expression



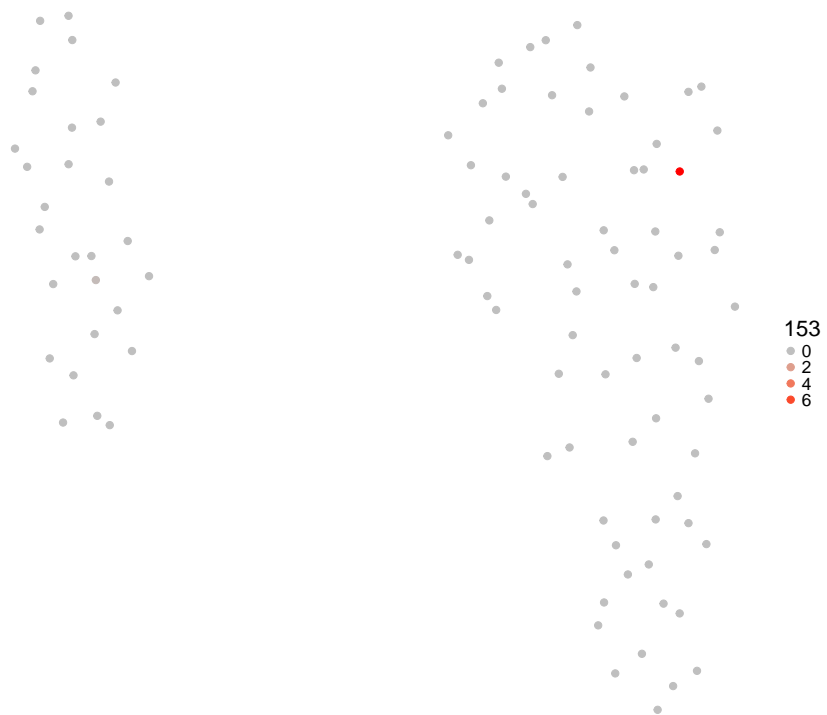
UMAP colored by FOXP3 expression



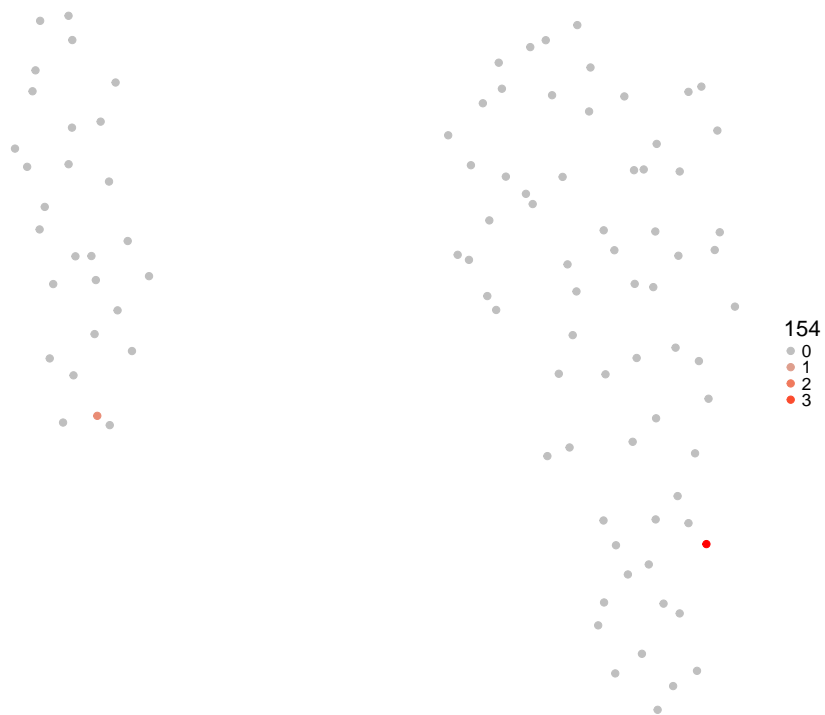
UMAP colored by IL1B expression



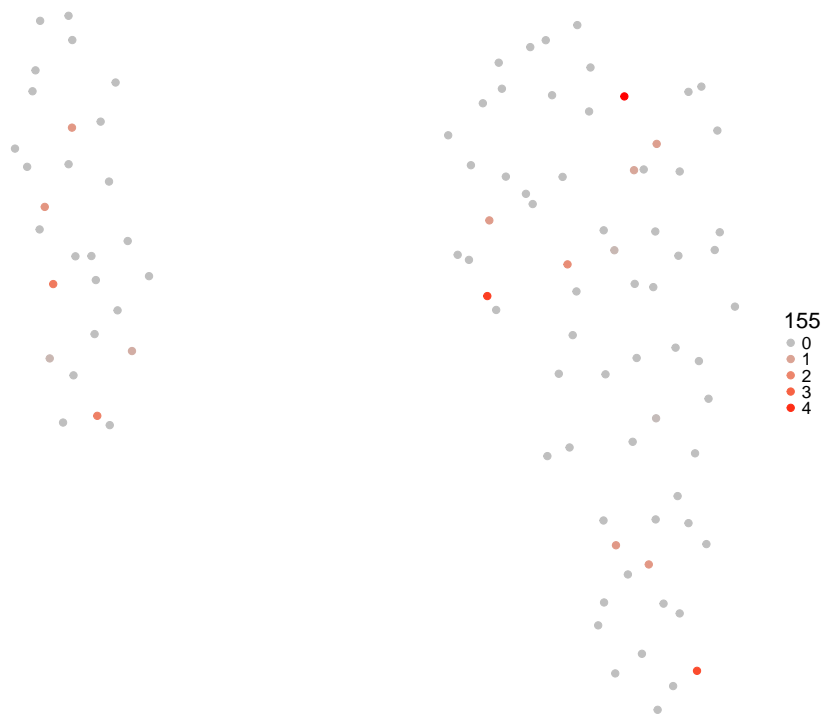
UMAP colored by ICOS expression



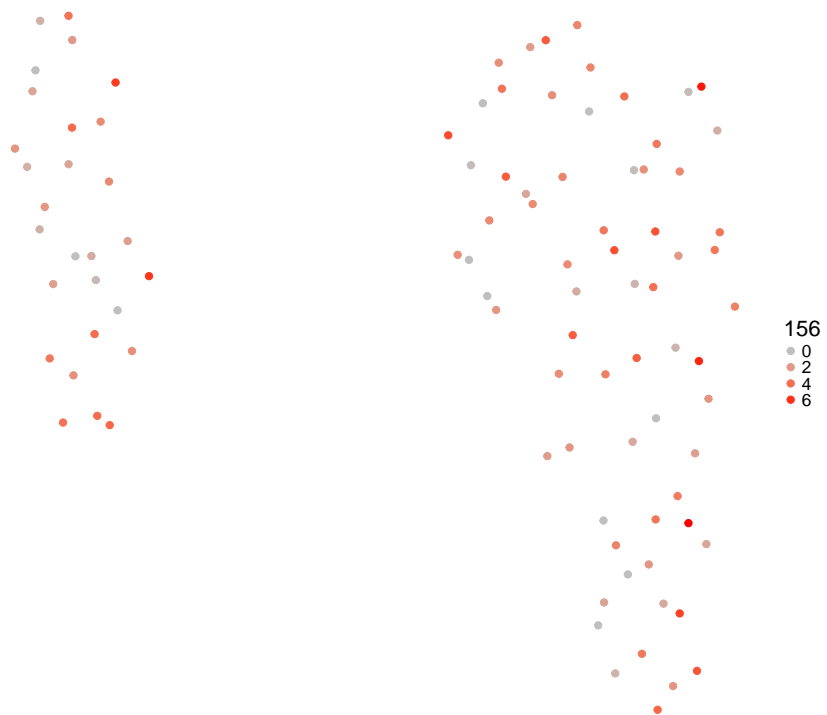
UMAP colored by GATA4 expression



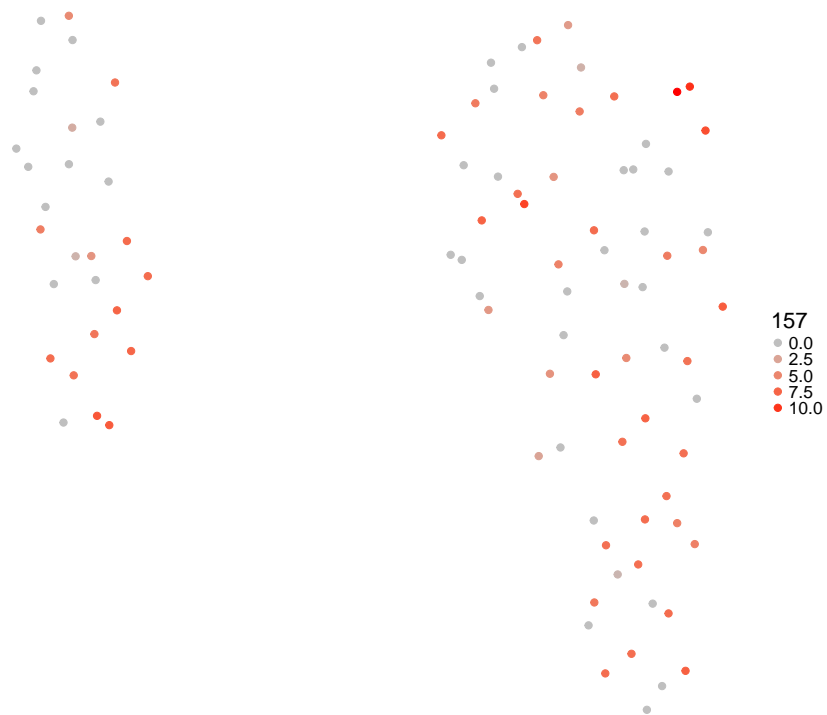
UMAP colored by PDGFRB expression



UMAP colored by CD8A expression

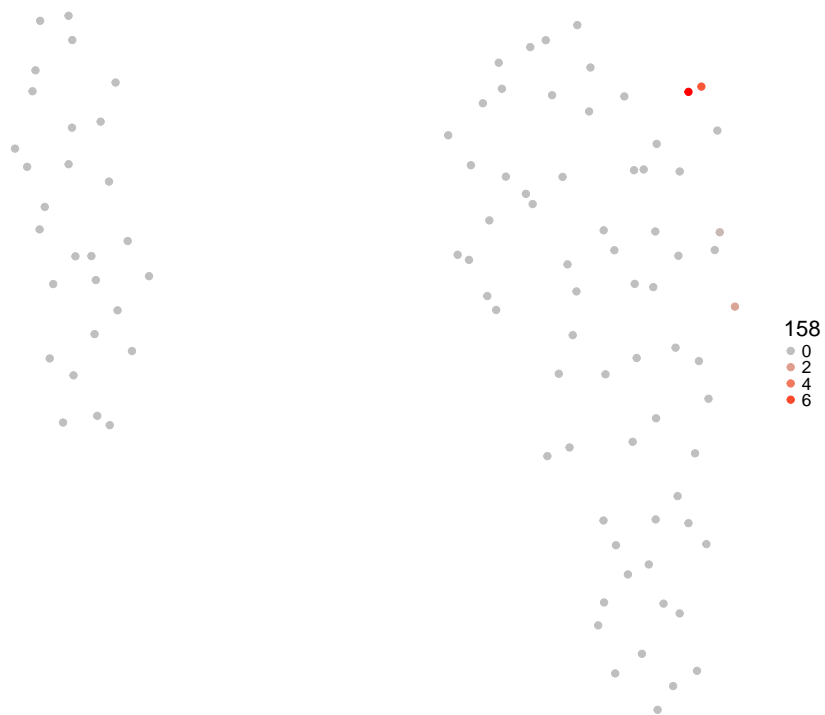


UMAP colored by GM13889 expression

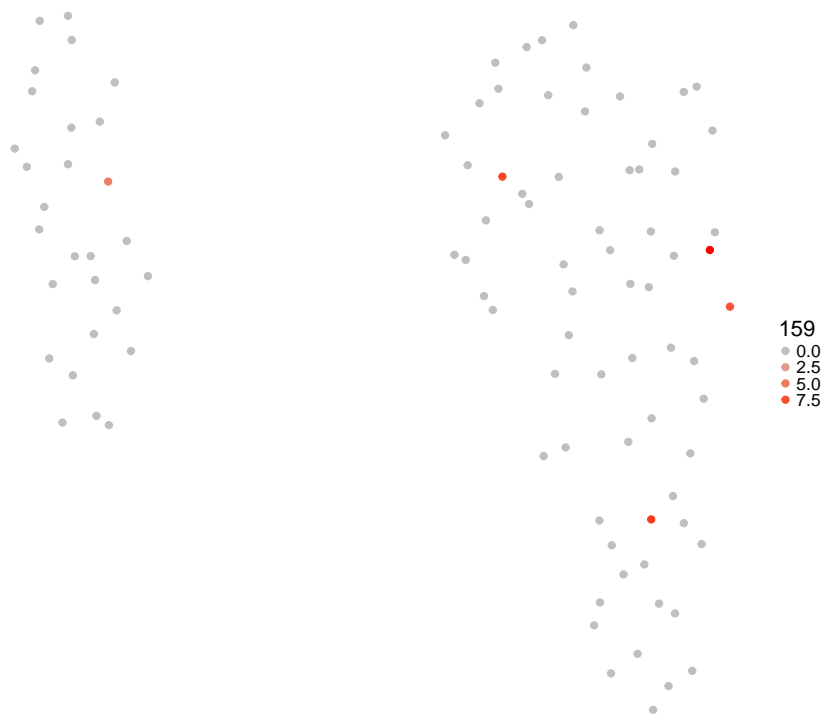




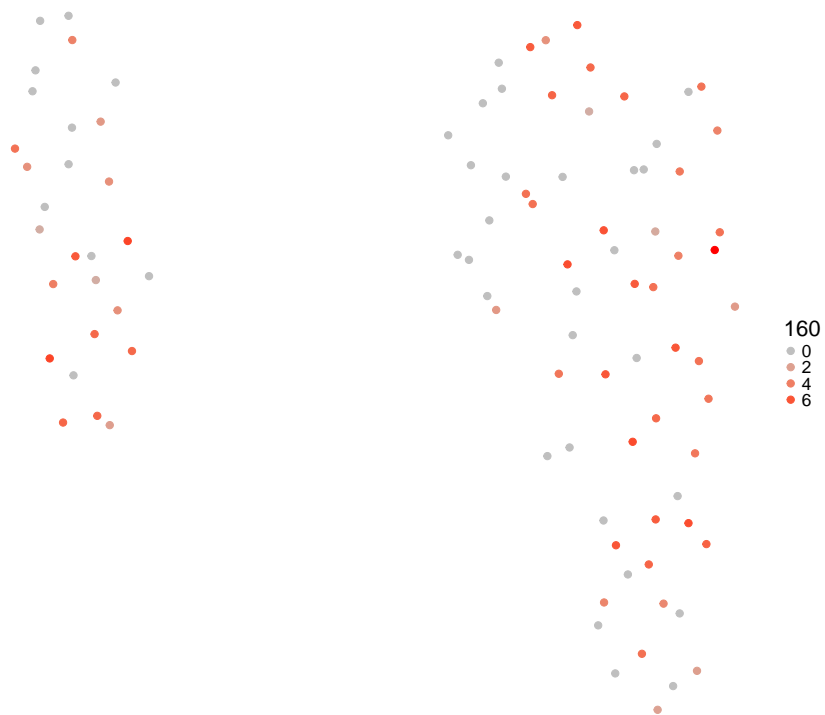
UMAP colored by IL27R expression



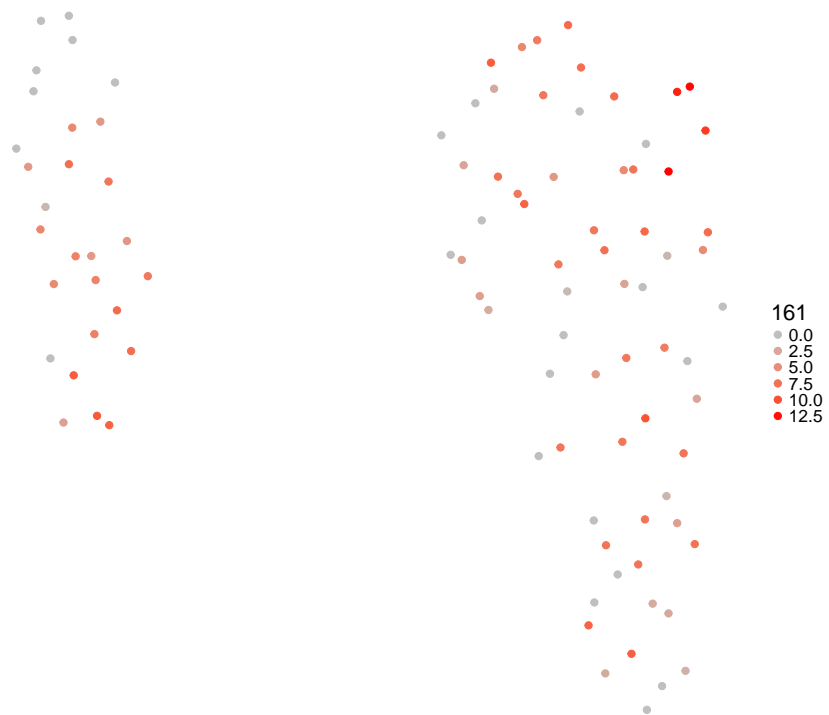
UMAP colored by BMP7 expression



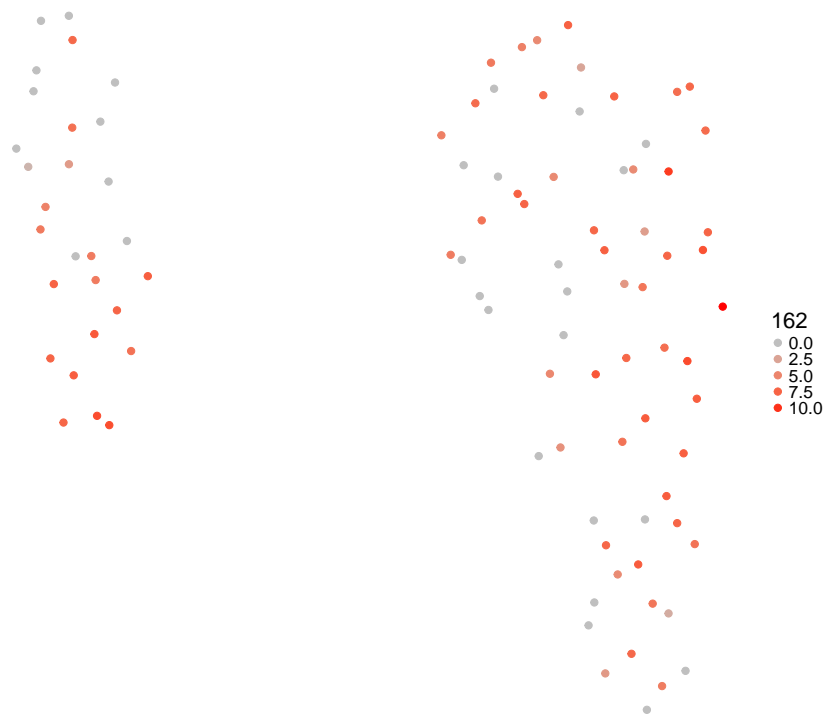
UMAP colored by TLR7 expression



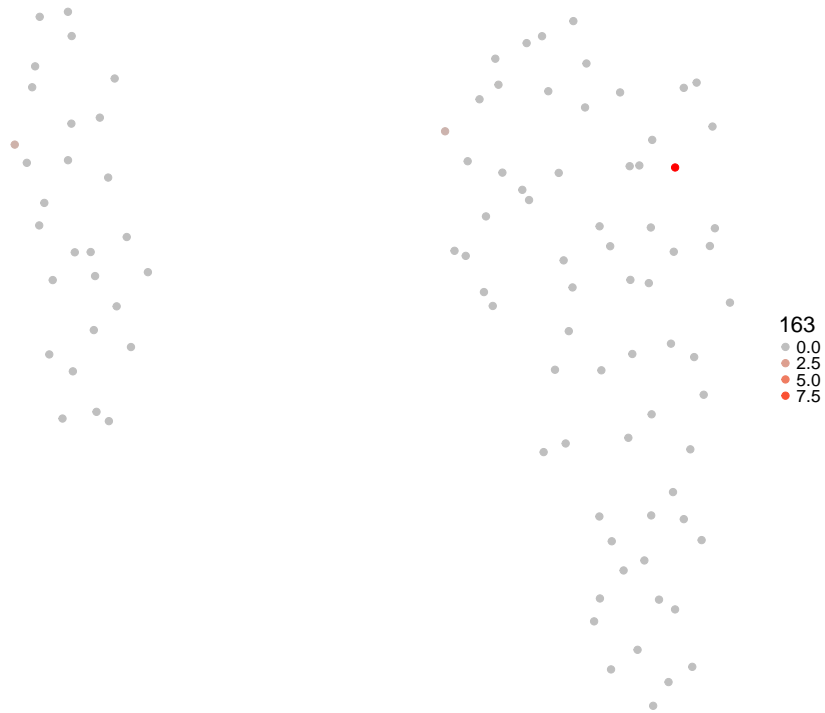
UMAP colored by CSF2RB expression



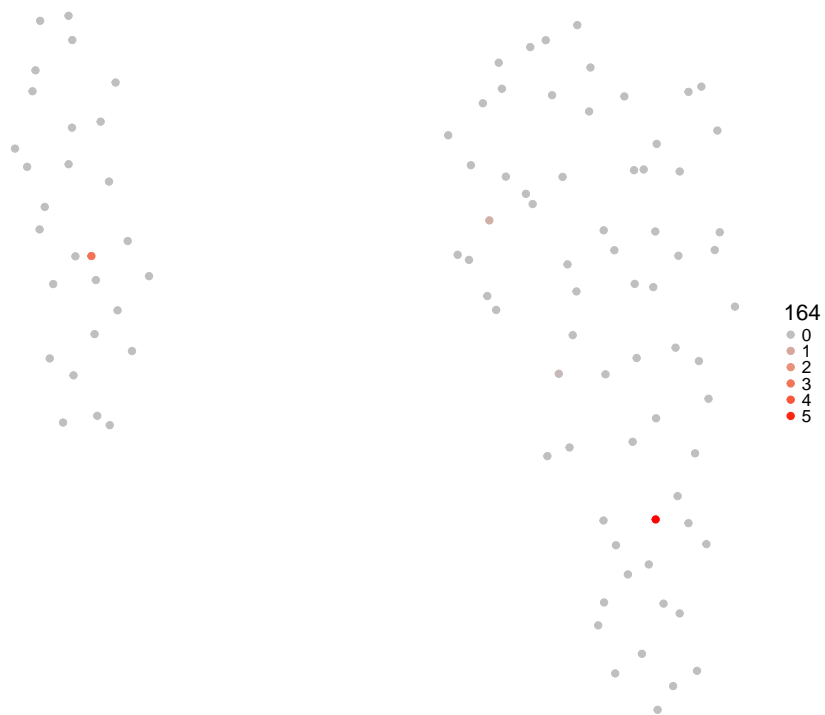
UMAP colored by CSF1R expression



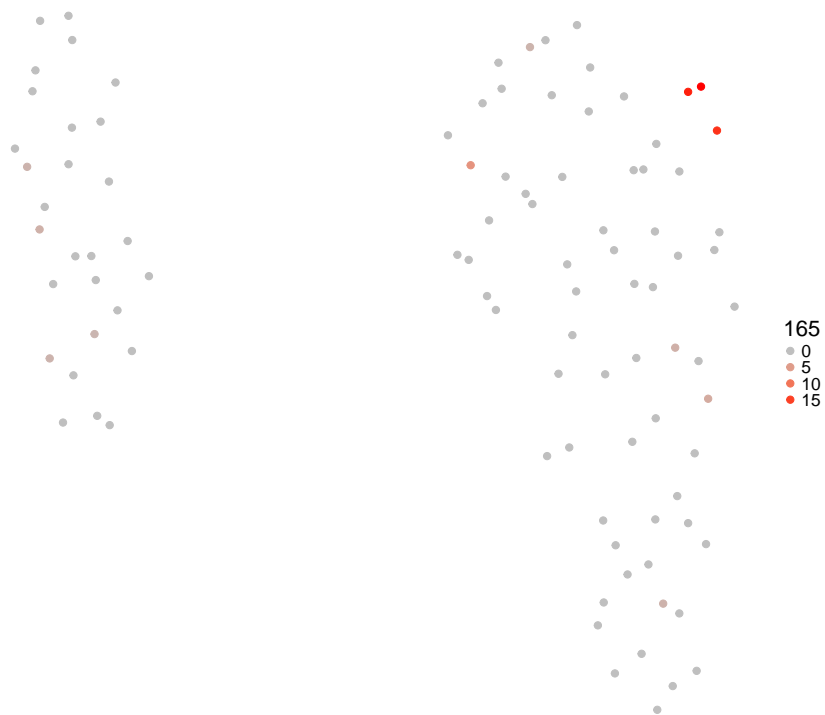
UMAP colored by TLR9 expression



UMAP colored by IL1A expression

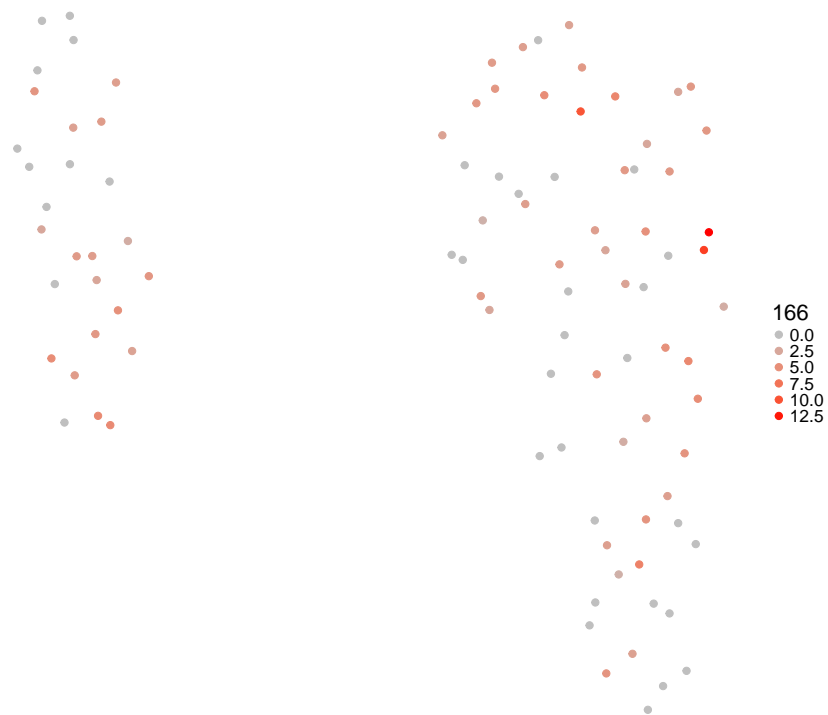


UMAP colored by PECAM1 expression





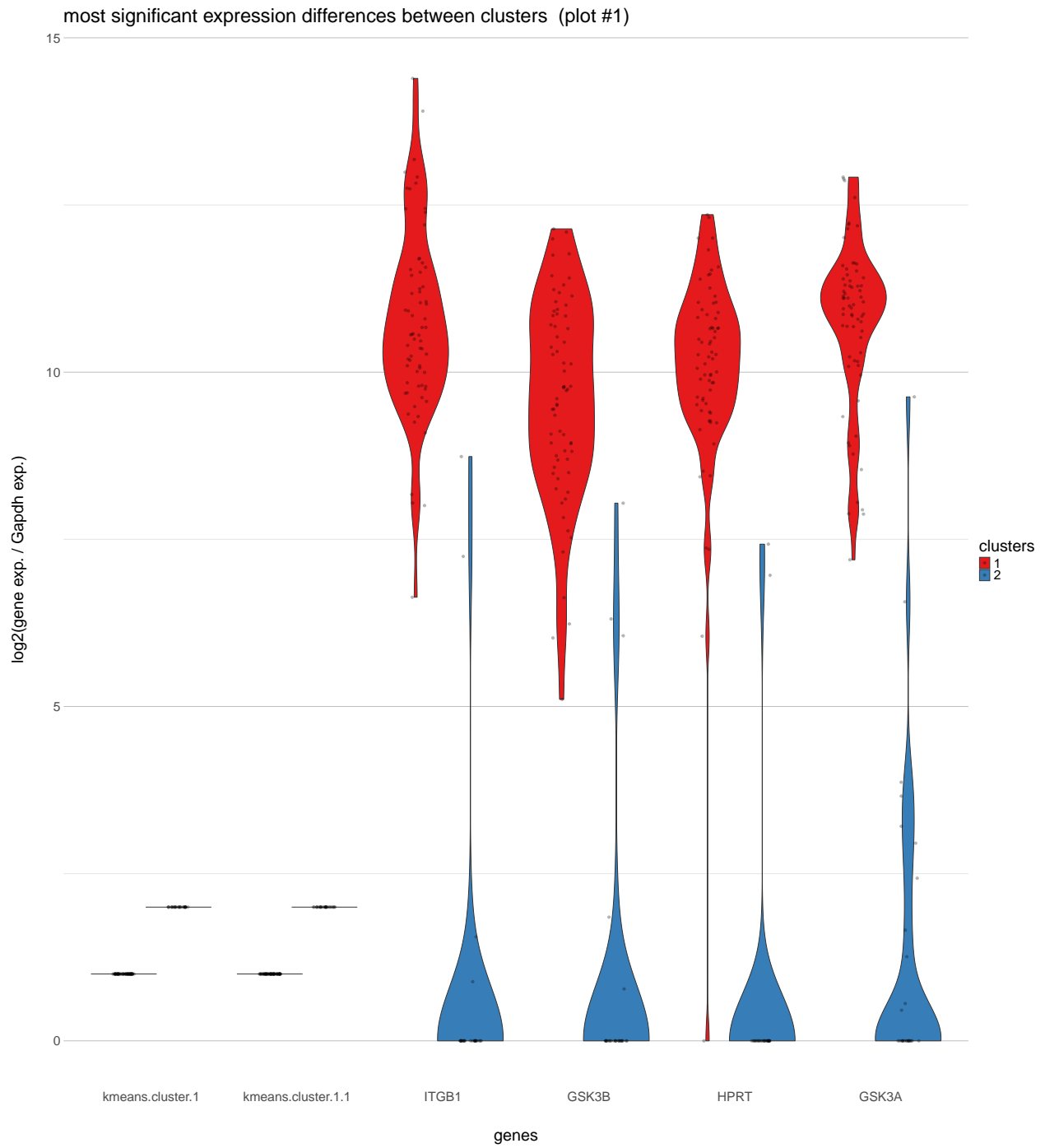
UMAP colored by TNF expression



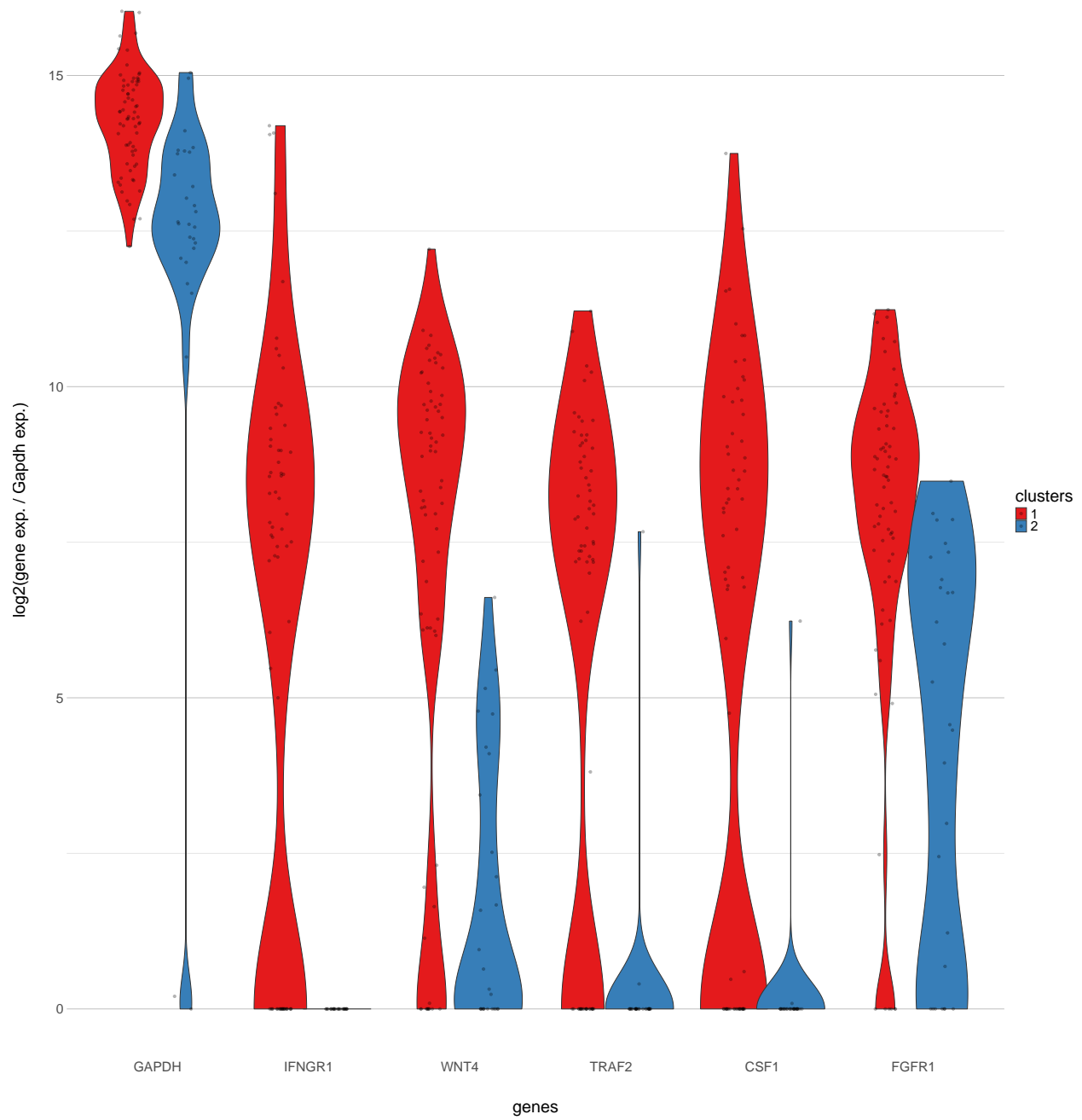
Differentially expressed genes between clusters :

[1] kmeans.cluster.1: 1.466e-20	kmeans.cluster.1.1: 1.466e-20
[3] ITGB1: 7.01e-13	GSK3B: 7.01e-13
[5] HPRT: 7.01e-13	GSK3A: 7.01e-13
[7] PTEN: 7.01e-13	HIF1A: 1.009e-12
[9] IRF2: 1.329e-12	STAT3: 1.56e-12
[11] LY6E: 1.826e-12	JAK1: 1.826e-12
[13] VEGFA: 1.491e-11	PTK2: 1.538e-10

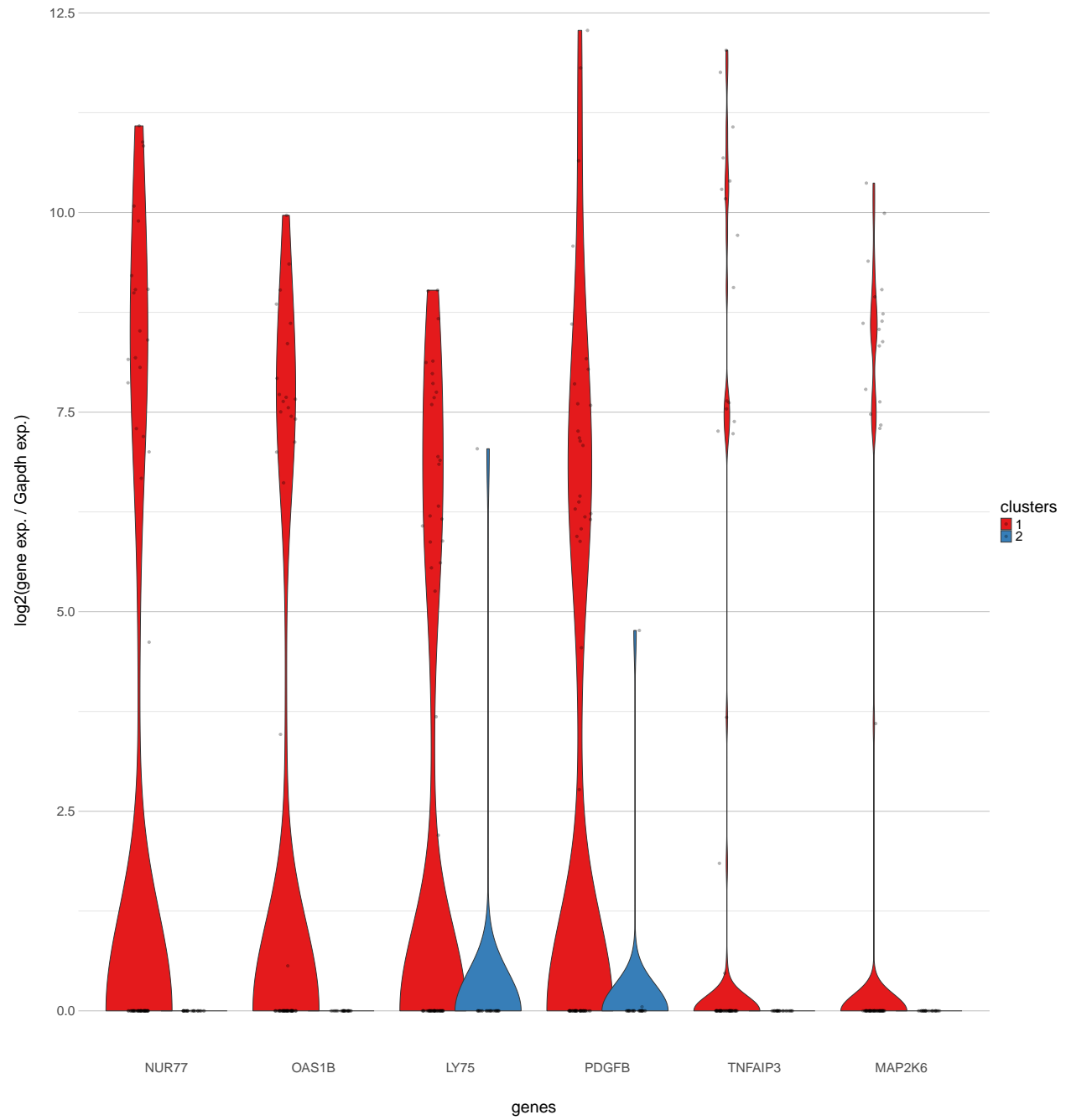
[15] TIMP2: 2.823e-10	ACVR1: 5.137e-10
[17] STAT1: 6.123e-10	PDL-1: 4.332e-09
[19] IRF1: 5.661e-09	VEGFB: 6.428e-09
[21] JAK2: 8.07e-09	SOCS3: 1.589e-08
[23] NFKB1: 2.606e-08	PDGFA: 4.952e-08
[25] GAPDH: 2.153e-07	IFNGR1: 2.153e-07
[27] WNT4: 3.614e-07	TRAF2: 5.464e-07
[29] CSF1: 1.669e-06	FGFR1: 2.544e-06
[31] KLF5: 3.081e-06	TNFRSF1A: 5.83e-06
[33] CSF2RA: 2.013e-05	INS1: 2.216e-05
[35] ANPEP: 2.483e-05	NFATC1: 2.832e-05
[37] FYN: 2.983e-05	IAPP: 0.0001045
[39] TLR3: 0.0001401	BCL6: 0.0001959
[41] STAT5: 0.0002062	CD44: 0.0002062
[43] IFIT1: 0.0002974	EGFR: 0.0008968
[45] SPP1: 0.001482	IL4RA: 0.002443
[47] CD83: 0.002443	CD74: 0.002638
[49] NUR77: 0.004542	OAS1B: 0.004542
[51] LY75: 0.005213	PDGFB: 0.005721
[53] TNFAIP3: 0.00829	MAP2K6: 0.01123
[55] IRF7: 0.0119	GCG: 0.01387
[57] SST: 0.01722	TNFRSF1B: 0.03925
[59] CD40: 0.04639	OAS2: 0.04729



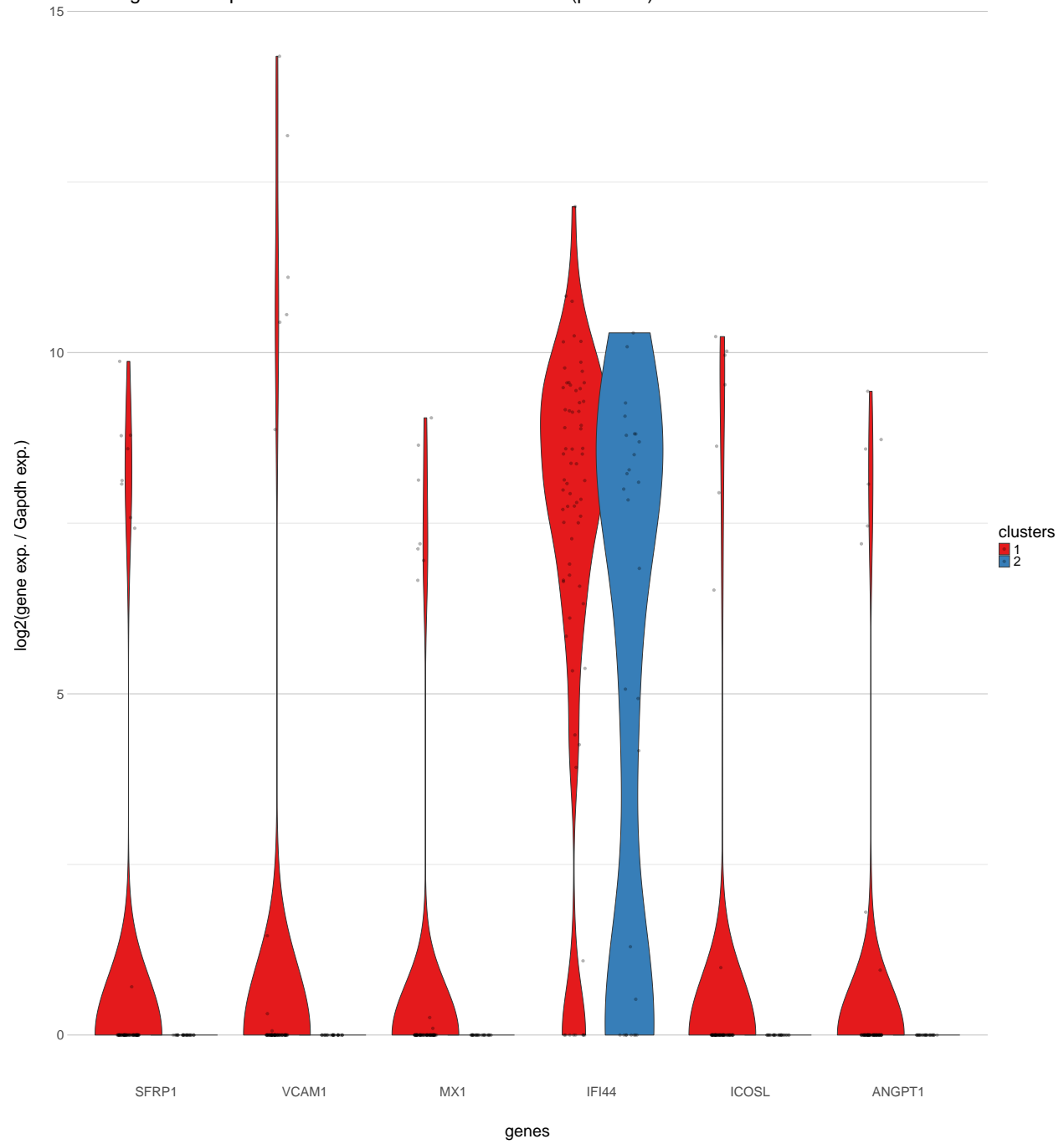
most significant expression differences between clusters (plot #5)



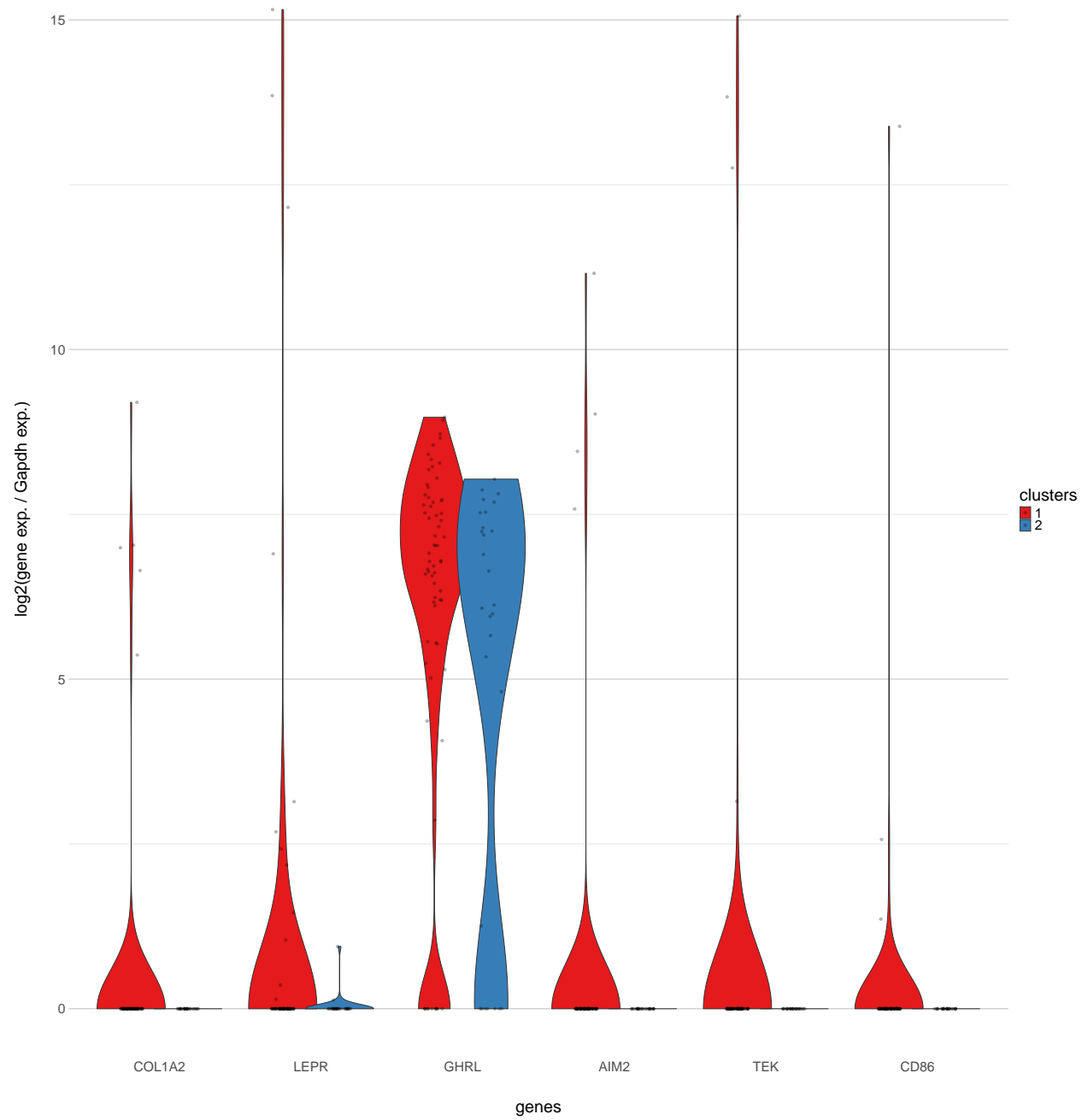
most significant expression differences between clusters (plot #9)



most significant expression differences between clusters (plot #13)



most significant expression differences between clusters (plot #17)



most significant expression differences between clusters (plot #21)

