

## Test

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character(0)
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[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] "Predicted number of rows after removing duplicate genes, per cell: 18432"
[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"
[31] "CD3E" "cd4" "CD4" "cd40" "Cd44"
[36] "CD44" "CD74" "cd80" "CD80" "CD83"
[41] "cd86" "CD86" "cd8a" "CD8A" "Ceacam1"
[46] "CLEC7A" "COL11A1" "COL1A1" "COL1A2" "CSF1"
[51] "CSF1R" "CSF2RA" "CSF2RB" "ctla4" "Cxcl10"
[56] "CXCL13" "Cxcr3" "Cxcr4" "DES" "EGFR"
[61] "FAP" "FCGR1" "FGFR1" "FGFR3" "FGR"
[66] "FLT4" "foxp3" "Fyn" "gapdh" "gata4"
[71] "GCG" "GFAP" "GHRL" "GM13889" "gsk3a"
[76] "gsk3b" "H2-AA" "H2-DMA" "HIF1A" "Hpvt"
[81] "IAPP" "icam1" "ICAM1" "ICAM2" "Icos"
[86] "ICOSL" "Ifi44" "Ifi44l" "Ifit1" "Ifit3"
[91] "ifng" "IFNG" "Ifngr1" "IGF1" "IGF2"
[96] "IL-21" "il10" "il12b" "Il12rb" "il17A"
[101] "Il18r1" "IL1A" "IL1B" "il1r2" "il2"
[106] "il25" "IL27" "Il27r" "il2ra" "il3"
[111] "IL34" "il4" "il4ra" "il5" "il5ra"
[116] "il6" "il7" "il7r" "INS1" "INS2"
[121] "Irf1" "Irf2" "Irf4" "Irf7" "Isg15"
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[126] "ITGAX"      "ITGB1"      "Jak1"      "Jak2"      "KDR"
[131] "KLF5"      "LCK"      "LEPR"      "Ly6e"      "LY75"
[136] "Map2k6"    "Mapk8"      "MMP1A"     "MMP2"     "MMP3"
[141] "MMP9"      "Mx1"      "NFATC1"    "nfkb1"    "NLRP3"
[146] "Nur77"     "Oas1b"     "Oas2"     "Oas1l"    "Pd1"
[151] "PDGFA"     "PDGFB"     "PDGFRB"   "Pdl-1"    "PDPN"
[156] "PECAM1"    "ppara"     "pparg"     "ppargc1a" "PPY"
[161] "pten"      "PTGS2"     "PTK2"     "Rsad2"    "RSP01"
[166] "SELE"      "SFRP1"     "Socs3"     "SPP1"     "SST"
[171] "Stat1"     "Stat3"     "Stat4"     "Stat5"    "Tbx21"
[176] "TEK"      "TGFB1"     "Tgfbr2"    "TIMP1"    "TIMP2"
[181] "TLR3"      "TLR4"     "TLR7"     "TLR9"     "TNC"
[186] "tnf"      "Tnfaip3"   "tnfrsf1a"  "tnfrsf1b" "TNFSF11"
[191] "Traf2"     "Vav1"     "VCAM1"     "VEGFA"    "VEGFB"
[196] "WNT2B"     "WNT4"     "Zap70"     "ZAP70"    "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] "CD3E"        "cd4"       "CD4"      "cd40"      "Cd44"
 [36] "CD44"        "CD74"      "cd80"     "CD80"      "CD83"
 [41] "cd86"        "CD86"      "cd8a"     "CD8A"      "Ceacam1"
 [46] "CLEC7A"      "COL11A1"   "COL1A1"   "COL1A2"    "CSF1"
 [51] "CSF1R"       "CSF2RA"    "CSF2RB"   "ctla4"     "Cxcl10"
 [56] "CXCL13"      "Cxcr3"     "Cxcr4"    "DES"       "EGFR"
 [61] "FAP"         "FCGR1"     "FGFR1"    "FGFR3"     "FGR"
 [66] "FLT4"        "foxp3"     "Fyn"      "gapdh"     "gata4"
 [71] "GCG"         "GFAP"      "GHRL"     "GM13889"   "gsk3a"
 [76] "gsk3b"       "H2-AA"     "H2-DMA"   "HIF1A"     "HpRT"
 [81] "IAPP"        "icam1"     "ICAM1"    "ICAM2"     "Icos"
 [86] "ICOSL"       "Ifi44"     "Ifi44l"   "Ifit1"     "Ifit3"
 [91] "ifng"        "IFNG"      "Ifngr1"   "IGF1"      "IGF2"
 [96] "IL-21"       "il10"      "il12b"    "Il12rb"    "il17A"
[101] "Il18r1"      "IL1A"     "IL1B"     "il1r2"     "il2"
[106] "il25"        "IL27"     "IL27r"    "il2ra"     "il3"
[111] "IL34"        "il4"      "il4ra"    "il5"       "il5ra"
[116] "il6"         "il7"      "il7r"     "INS1"      "INS2"
[121] "Irf1"        "Irf2"     "Irf4"     "Irf7"      "Isg15"
[126] "ITGAX"      "ITGB1"     "Jak1"     "Jak2"     "KDR"
[131] "KLF5"      "LCK"      "LEPR"     "Ly6e"     "LY75"
[136] "Map2k6"    "Mapk8"     "MMP1A"     "MMP2"     "MMP3"

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[141] "MMP9"      "Mx1"      "NFATC1"   "nfkb1"    "NLRP3"
[146] "Nur77"     "Oas1b"    "Oas2"     "Oas1l"    "Pd1"
[151] "PDGFA"     "PDGFB"    "PDGFRB"   "Pd1-1"    "PDPN"
[156] "PECAM1"    "ppara"    "pparg"     "ppargc1a" "PPY"
[161] "pten"      "PTGS2"    "PTK2"      "Rsad2"    "RSP01"
[166] "SELE"      "SFRP1"    "Socs3"     "SPP1"     "SST"
[171] "Stat1"     "Stat3"    "Stat4"     "Stat5"    "Tbx21"
[176] "TEK"       "TGFB1"    "Tgfbr2"    "TIMP1"    "TIMP2"
[181] "TLR3"      "TLR4"     "TLR7"      "TLR9"     "TNC"
[186] "tnf"       "Tnfaip3"  "tnfrsf1a"  "tnfrsf1b" "TNFSF11"
[191] "Traf2"     "Vav1"     "VCAM1"     "VEGFA"    "VEGFB"
[196] "WNT2B"     "WNT4"     "Zap70"     "ZAP70"    "Zeb2"

[1] "The first column you'll pull is: 9"
[1] "The last column you'll pull is: 200"
  [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"      "CD3E"        "CD4"
 [25] "CD4"        "CD40"       "CD44"        "CD44"      "CD74"        "CD80"
 [31] "CD80"       "CD83"       "CD86"        "CD86"      "CD8A"        "CD8A"
 [37] "Ceacam1"   "CLEC7A"     "COL11A1"     "COL1A1"    "COL1A2"      "CSF1"
 [43] "CSF1R"     "CSF2RA"     "CSF2RB"     "CTLA4"     "CXCL10"      "CXCL13"
 [49] "CXCR3"     "CXCR4"     "DES"         "EGFR"      "FAP"         "FCGR1"
 [55] "FGFR1"     "FGFR3"     "FGR"         "FLT4"      "FOXP3"       "FYN"
 [61] "gapdh"     "gata4"     "GCG"         "GFAP"      "GHRL"        "GM13889"
 [67] "gsk3a"     "gsk3b"     "H2-AA"       "H2-DMA"    "HIF1A"       "Hprt"
 [73] "IAPP"      "ICAM1"     "ICAM1"       "ICAM2"     "ICOS"        "ICOSL"
 [79] "IFI44"     "IFI44L"    "IFIT1"       "IFIT3"     "IFNG"        "IFNG"
 [85] "IFNGR1"    "IGF1"      "IGF2"        "IL-21"     "IL10"        "IL12B"
 [91] "IL12RB"    "IL17A"     "IL18R1"     "IL1A"      "IL1B"        "IL1R2"
 [97] "IL12"      "IL25"      "IL27"        "IL27R"     "IL2RA"       "IL3"
[103] "IL34"      "IL4"       "IL4RA"      "IL5"       "IL5RA"       "IL6"
[109] "IL7"       "IL7R"      "INS1"       "INS2"      "IRF1"        "IRF2"
[115] "IRF4"      "IRF7"      "ISG15"      "ITGAX"     "ITGB1"       "JAK1"
[121] "JAK2"      "KDR"       "KLF5"       "LCK"       "LEPR"        "LY6E"
[127] "LY75"     "MAP2K6"    "MAPK8"      "MMP1A"     "MMP2"        "MMP3"
[133] "MMP9"     "Mx1"      "NFATC1"     "nfkb1"    "NLRP3"       "Nur77"
[139] "Oas1b"     "Oas2"     "Oas1l"     "Pd1"      "PDGFA"       "PDGFB"
[145] "PDGFRB"    "Pd1-1"    "PDPN"      "PECAM1"    "ppara"       "pparg"
[151] "ppargc1a"  "PPY"      "pten"      "PTGS2"    "PTK2"        "Rsad2"
[157] "RSP01"     "SELE"     "SFRP1"     "Socs3"     "SPP1"        "SST"
[163] "Stat1"     "Stat3"    "Stat4"     "Stat5"    "Tbx21"       "TEK"
[169] "TGFB1"     "Tgfbr2"    "TIMP1"     "TIMP2"    "TLR3"        "TLR4"
[175] "TLR7"      "TLR9"     "TNC"       "tnf"       "Tnfaip3"     "tnfrsf1a"
[181] "tnfrsf1b"  "TNFSF11"  "Traf2"     "Vav1"     "VCAM1"       "VEGFA"
[187] "VEGFB"     "WNT2B"    "WNT4"      "Zap70"     "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"      "CD3E"        "CD4"
 [25] "CD4"        "CD40"       "CD44"        "CD44"      "CD74"        "CD80"
 [31] "CD80"       "CD83"       "CD86"        "CD86"      "CD8A"        "CD8A"
 [37] "Ceacam1"   "CLEC7A"     "COL11A1"     "COL1A1"    "COL1A2"      "CSF1"

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[43]	"CSF1R"	"CSF2RA"	"CSF2RB"	"ctla4"	"Cxc110"	"CXCL13"
[49]	"Cxcr3"	"Cxcr4"	"DES"	"EGFR"	"FAP"	"FCGR1"
[55]	"FGFR1"	"FGFR3"	"FGR"	"FLT4"	"foxp3"	"Fyn"
[61]	"gapdh"	"gata4"	"GCG"	"GFAP"	"GHRL"	"GM13889"
[67]	"gsk3a"	"gsk3b"	"H2-AA"	"H2-DMA"	"HIF1A"	"Hprt"
[73]	"IAPP"	"icam1"	"ICAM1"	"ICAM2"	"Icos"	"ICOSL"
[79]	"Ifi44"	"Ifi44l"	"Ifit1"	"Ifit3"	"ifng"	"IFNG"
[85]	"Ifngr1"	"IGF1"	"IGF2"	"IL-21"	"il10"	"il12b"
[91]	"Il12rb"	"il17A"	"Il18r1"	"IL1A"	"IL1B"	"il1r2"
[97]	"il2"	"il25"	"Il27"	"Il27r"	"il2ra"	"il3"
[103]	"IL34"	"il4"	"il4ra"	"il5"	"il5ra"	"il6"
[109]	"il7"	"il7r"	"INS1"	"INS2"	"Irf1"	"Irf2"
[115]	"Irf4"	"Irf7"	"Isig15"	"ITGAX"	"ITGB1"	"Jak1"
[121]	"Jak2"	"KDR"	"KLF5"	"LCK"	"LEPR"	"Ly6e"
[127]	"LY75"	"Map2k6"	"Mapk8"	"MMP1A"	"MMP2"	"MMP3"
[133]	"MMP9"	"Mx1"	"NFATC1"	"nfkb1"	"NLRP3"	"Nur77"
[139]	"Oas1b"	"Oas2"	"Oas11"	"Pd1"	"PDGFA"	"PDGFB"
[145]	"PDGFRB"	"Pd1-1"	"PDPN"	"PECAM1"	"ppara"	"pparg"
[151]	"ppargc1a"	"PPY"	"pten"	"PTGS2"	"PTK2"	"Rsad2"
[157]	"RSP01"	"SELE"	"SFRP1"	"Socs3"	"SPP1"	"SST"
[163]	"Stat1"	"Stat3"	"Stat4"	"Stat5"	"Tbx21"	"TEK"
[169]	"TGFB1"	"Tgfb2"	"TIMP1"	"TIMP2"	"TLR3"	"TLR4"
[175]	"TLR7"	"TLR9"	"TNC"	"tnf"	"Tnfaip3"	"tnfrsf1a"
[181]	"tnfrsf1b"	"TNFSF11"	"Traf2"	"Vav1"	"VCAM1"	"VEGFA"
[187]	"VEGFB"	"WNT2B"	"WNT4"	"Zap70"	"ZAP70"	"Zeb2"

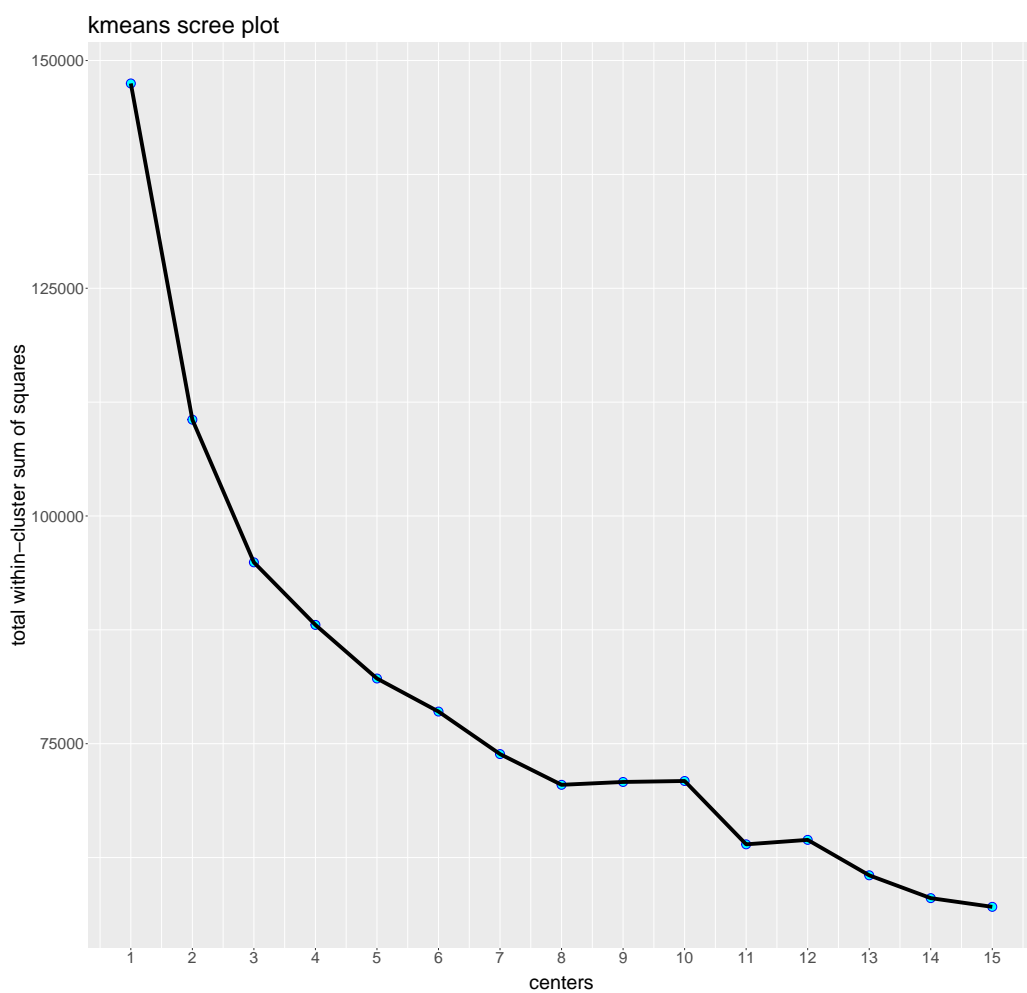
[1] "Column names after searching for the column pattern and after selecting the right columns. The fol.

[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"	"CD3E"	"cd4"
[25]	"CD4"	"cd40"	"Cd44"	"CD44"	"CD74"	"cd80"
[31]	"CD80"	"CD83"	"cd86"	"CD86"	"cd8a"	"CD8A"
[37]	"Ceacam1"	"CLEC7A"	"COL11A1"	"COL1A1"	"COL1A2"	"CSF1"
[43]	"CSF1R"	"CSF2RA"	"CSF2RB"	"ctla4"	"Cxc110"	"CXCL13"
[49]	"Cxcr3"	"Cxcr4"	"DES"	"EGFR"	"FAP"	"FCGR1"
[55]	"FGFR1"	"FGFR3"	"FGR"	"FLT4"	"foxp3"	"Fyn"
[61]	"gapdh"	"gata4"	"GCG"	"GFAP"	"GHRL"	"GM13889"
[67]	"gsk3a"	"gsk3b"	"H2-AA"	"H2-DMA"	"HIF1A"	"Hprt"
[73]	"IAPP"	"icam1"	"ICAM1"	"ICAM2"	"Icos"	"ICOSL"
[79]	"Ifi44"	"Ifi44l"	"Ifit1"	"Ifit3"	"ifng"	"IFNG"
[85]	"Ifngr1"	"IGF1"	"IGF2"	"IL-21"	"il10"	"il12b"
[91]	"Il12rb"	"il17A"	"Il18r1"	"IL1A"	"IL1B"	"il1r2"
[97]	"il2"	"il25"	"Il27"	"Il27r"	"il2ra"	"il3"
[103]	"IL34"	"il4"	"il4ra"	"il5"	"il5ra"	"il6"
[109]	"il7"	"il7r"	"INS1"	"INS2"	"Irf1"	"Irf2"
[115]	"Irf4"	"Irf7"	"Isig15"	"ITGAX"	"ITGB1"	"Jak1"
[121]	"Jak2"	"KDR"	"KLF5"	"LCK"	"LEPR"	"Ly6e"
[127]	"LY75"	"Map2k6"	"Mapk8"	"MMP1A"	"MMP2"	"MMP3"
[133]	"MMP9"	"Mx1"	"NFATC1"	"nfkb1"	"NLRP3"	"Nur77"
[139]	"Oas1b"	"Oas2"	"Oas11"	"Pd1"	"PDGFA"	"PDGFB"
[145]	"PDGFRB"	"Pd1-1"	"PDPN"	"PECAM1"	"ppara"	"pparg"
[151]	"ppargc1a"	"PPY"	"pten"	"PTGS2"	"PTK2"	"Rsad2"
[157]	"RSP01"	"SELE"	"SFRP1"	"Socs3"	"SPP1"	"SST"
[163]	"Stat1"	"Stat3"	"Stat4"	"Stat5"	"Tbx21"	"TEK"

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[169] "TGFB1"      "Tgfb1"      "TIMP1"      "TIMP2"      "TLR3"      "TLR4"
[175] "TLR7"      "TLR9"      "TNC"       "tnf"       "Tnfaip3"   "tnfrsf1a"
[181] "tnfrsf1b"  "TNFSF11"   "Traf2"     "Vav1"     "VCAM1"     "VEGFA"
[187] "VEGFB"     "WNT2B"     "WNT4"     "Zap70"     "ZAP70"     "Zeb2"

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[1] "Column Names for ctClust are: "
[1] "cellSource"      "probe"          "age"            "patient"
[5] "SPA"            "SPAM"           "SPAMcell"       "cellType"

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[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"	"CD3E"	"cd4"
[33]	"CD4"	"cd40"	"Cd44"	"CD44"
[37]	"CD74"	"cd80"	"CD80"	"CD83"
[41]	"cd86"	"CD86"	"cd8a"	"CD8A"
[45]	"Ceacam1"	"CLEC7A"	"COL11A1"	"COL1A1"
[49]	"COL1A2"	"CSF1"	"CSF1R"	"CSF2RA"
[53]	"CSF2RB"	"ctla4"	"Cxc110"	"CXCL13"
[57]	"Cxcr3"	"Cxcr4"	"DES"	"EGFR"
[61]	"FAP"	"FCGR1"	"FGFR1"	"FGFR3"
[65]	"FGR"	"FLT4"	"foxp3"	"Fyn"
[69]	"gapdh"	"gata4"	"GCG"	"GFAP"
[73]	"GHRL"	"GM13889"	"gsk3a"	"gsk3b"
[77]	"H2.AA"	"H2.DMA"	"HIF1A"	"Hprt"
[81]	"IAPP"	"icam1"	"ICAM1"	"ICAM2"
[85]	"Icos"	"ICOSL"	"Ifi44"	"Ifi441"
[89]	"Ifit1"	"Ifit3"	"ifng"	"IFNG"
[93]	"Ifngr1"	"IGF1"	"IGF2"	"IL.21"
[97]	"il10"	"il12b"	"Il12rb"	"il17A"
[101]	"Il18r1"	"IL1A"	"IL1B"	"il1r2"
[105]	"il2"	"il25"	"Il27"	"Il27r"
[109]	"il2ra"	"il3"	"IL34"	"il4"
[113]	"il4ra"	"il5"	"il5ra"	"il6"
[117]	"il7"	"il7r"	"INS1"	"INS2"
[121]	"Irf1"	"Irf2"	"Irf4"	"Irf7"
[125]	"Isg15"	"ITGAX"	"ITGB1"	"Jak1"
[129]	"Jak2"	"KDR"	"KLF5"	"LCK"
[133]	"LEPR"	"Ly6e"	"LY75"	"Map2k6"
[137]	"Mapk8"	"MMP1A"	"MMP2"	"MMP3"
[141]	"MMP9"	"Mx1"	"NFATC1"	"nfkb1"
[145]	"NLRP3"	"Nur77"	"Oas1b"	"Oas2"
[149]	"Oas11"	"Pd1"	"PDGFA"	"PDGFB"
[153]	"PDGFRB"	"Pdl.1"	"PDPN"	"PECAM1"
[157]	"ppara"	"pparg"	"ppargc1a"	"PPY"
[161]	"pten"	"PTGS2"	"PTK2"	"Rsad2"
[165]	"RSP01"	"SELE"	"SFRP1"	"Socs3"
[169]	"SPP1"	"SST"	"Stat1"	"Stat3"
[173]	"Stat4"	"Stat5"	"Tbx21"	"TEK"
[177]	"TGFB1"	"Tgfbr2"	"TIMP1"	"TIMP2"
[181]	"TLR3"	"TLR4"	"TLR7"	"TLR9"
[185]	"TNC"	"tnf"	"Tnfaip3"	"tnfrsf1a"
[189]	"tnfrsf1b"	"TNFSF11"	"Traf2"	"Vav1"
[193]	"VCAM1"	"VEGFA"	"VEGFB"	"WNT2B"
[197]	"WNT4"	"Zap70"	"ZAP70"	"Zeb2"
[201]	"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"	"CD3E"
[33]	"cd4"	"CD4"	"cd40"	"Cd44"
[37]	"CD44"	"CD74"	"cd80"	"CD80"
[41]	"CD83"	"cd86"	"CD86"	"cd8a"
[45]	"CD8A"	"Ceacam1"	"CLEC7A"	"COL11A1"
[49]	"COL1A1"	"COL1A2"	"CSF1"	"CSF1R"
[53]	"CSF2RA"	"CSF2RB"	"ctla4"	"Cxc110"
[57]	"CXCL13"	"Cxcr3"	"Cxcr4"	"DES"
[61]	"EGFR"	"FAP"	"FCGR1"	"FGFR1"
[65]	"FGFR3"	"FGR"	"FLT4"	"foxp3"
[69]	"Fyn"	"gapdh"	"gata4"	"GCG"
[73]	"GFAP"	"GHRL"	"GM13889"	"gsk3a"
[77]	"gsk3b"	"H2.AA"	"H2.DMA"	"HIF1A"
[81]	"Hprt"	"IAPP"	"icam1"	"ICAM1"
[85]	"ICAM2"	"Icos"	"ICOSL"	"Ifi44"
[89]	"Ifi441"	"Ifit1"	"Ifit3"	"ifng"
[93]	"IFNG"	"Ifngr1"	"IGF1"	"IGF2"
[97]	"IL.21"	"il10"	"il12b"	"Il12rb"
[101]	"il17A"	"Il18r1"	"IL1A"	"IL1B"
[105]	"il1r2"	"il2"	"il25"	"Il27"
[109]	"Il27r"	"il2ra"	"il3"	"IL34"
[113]	"il4"	"il4ra"	"il5"	"il5ra"
[117]	"il6"	"il7"	"il7r"	"INS1"
[121]	"INS2"	"Irf1"	"Irf2"	"Irf4"
[125]	"Irf7"	"Isg15"	"ITGAX"	"ITGB1"
[129]	"Jak1"	"Jak2"	"KDR"	"KLF5"
[133]	"LCK"	"LEPR"	"Ly6e"	"LY75"
[137]	"Map2k6"	"Mapk8"	"MMP1A"	"MMP2"
[141]	"MMP3"	"MMP9"	"Mx1"	"NFATC1"
[145]	"nfkb1"	"NLRP3"	"Nur77"	"Oas1b"
[149]	"Oas2"	"Oas11"	"Pd1"	"PDGFA"
[153]	"PDGFB"	"PDGFRB"	"Pd1.1"	"PDPN"
[157]	"PECAM1"	"ppara"	"pparg"	"ppargc1a"
[161]	"PPY"	"pten"	"PTGS2"	"PTK2"
[165]	"Rsad2"	"RSP01"	"SELE"	"SFRP1"
[169]	"Socs3"	"SPP1"	"SST"	"Stat1"
[173]	"Stat3"	"Stat4"	"Stat5"	"Tbx21"
[177]	"TEK"	"TGFB1"	"Tgfbr2"	"TIMP1"
[181]	"TIMP2"	"TLR3"	"TLR4"	"TLR7"
[185]	"TLR9"	"TNC"	"tnf"	"Tnfaip3"
[189]	"tnfrsf1a"	"tnfrsf1b"	"TNFSF11"	"Traf2"
[193]	"Vav1"	"VCAM1"	"VEGFA"	"VEGFB"
[197]	"WNT2B"	"WNT4"	"Zap70"	"ZAP70"
[201]	"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"

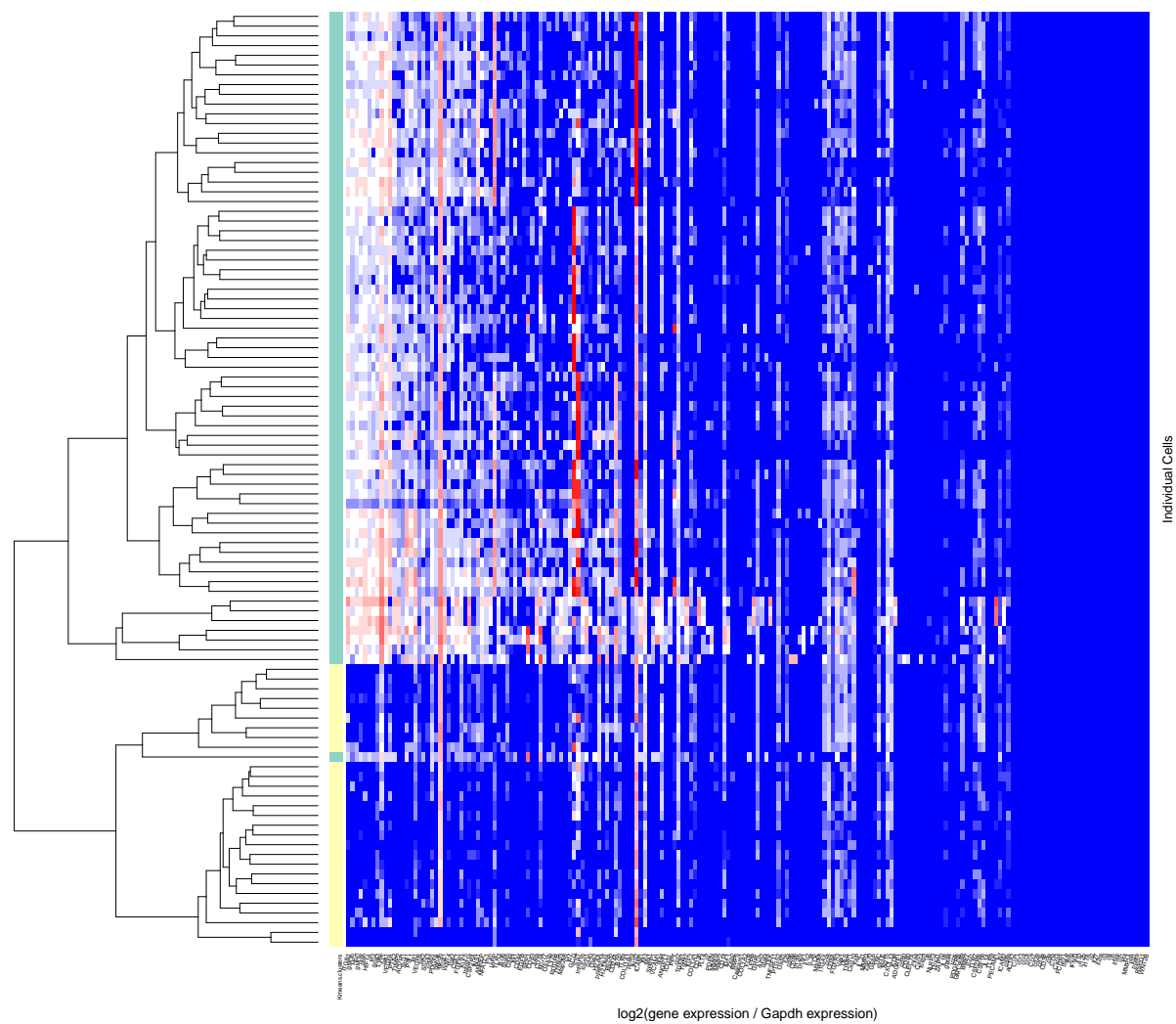
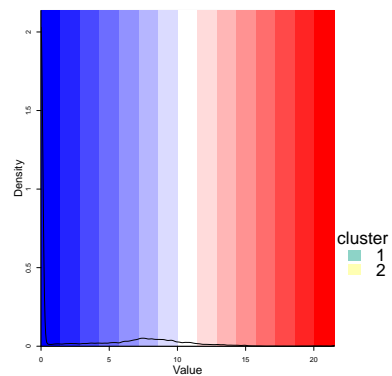
[13]	"Aim2"	"ANGPT1"	"ANPEP"	"Bcl2"
[17]	"Bcl6"	"BMP5"	"BMP7"	"Ccr1"
[21]	"ccr2"	"ccr3"	"ccr4"	"ccr5"
[25]	"ccr6"	"Ccr7"	"CD14"	"CD24A"
[29]	"cd28"	"CD36"	"cd3e"	"CD3E"
[33]	"cd4"	"CD4"	"cd40"	"Cd44"
[37]	"CD44"	"CD74"	"cd80"	"CD80"
[41]	"CD83"	"cd86"	"CD86"	"cd8a"
[45]	"CD8A"	"Ceacam1"	"CLEC7A"	"COL11A1"
[49]	"COL1A1"	"COL1A2"	"CSF1"	"CSF1R"
[53]	"CSF2RA"	"CSF2RB"	"ctla4"	"Cxc110"
[57]	"CXCL13"	"Cxcr3"	"Cxcr4"	"DES"
[61]	"EGFR"	"FAP"	"FCGR1"	"FGFR1"
[65]	"FGFR3"	"FGR"	"FLT4"	"foxp3"
[69]	"Fyn"	"gapdh"	"gata4"	"GCG"
[73]	"GFAP"	"GHRL"	"GM13889"	"gsk3a"
[77]	"gsk3b"	"H2. AA"	"H2. DMA"	"HIF1A"
[81]	"Hprt"	"IAPP"	"icam1"	"ICAM1"
[85]	"ICAM2"	"Icos"	"ICOSL"	"Ifi44"
[89]	"Ifi441"	"Ifit1"	"Ifit3"	"ifng"
[93]	"IFNG"	"Ifngr1"	"IGF1"	"IGF2"
[97]	"IL.21"	"il10"	"il12b"	"Il12rb"
[101]	"il17A"	"Il18r1"	"IL1A"	"IL1B"
[105]	"il1r2"	"il2"	"il25"	"Il27"
[109]	"Il27r"	"il2ra"	"il3"	"IL34"
[113]	"il4"	"il4ra"	"il5"	"il5ra"
[117]	"il6"	"il7"	"il7r"	"INS1"
[121]	"INS2"	"Irf1"	"Irf2"	"Irf4"
[125]	"Irf7"	"Isg15"	"ITGAX"	"ITGB1"
[129]	"Jak1"	"Jak2"	"KDR"	"KLF5"
[133]	"LCK"	"LEPR"	"Ly6e"	"LY75"
[137]	"Map2k6"	"Mapk8"	"MMP1A"	"MMP2"
[141]	"MMP3"	"MMP9"	"Mx1"	"NFATC1"
[145]	"nfkb1"	"NLRP3"	"Nur77"	"Oas1b"
[149]	"Oas2"	"Oas11"	"Pd1"	"PDGFA"
[153]	"PDGFB"	"PDGFRB"	"Pd1.1"	"PDPN"
[157]	"PECAM1"	"ppara"	"pparg"	"ppargc1a"
[161]	"PPY"	"pten"	"PTGS2"	"PTK2"
[165]	"Rsad2"	"RSP01"	"SELE"	"SFRP1"
[169]	"Socs3"	"SPP1"	"SST"	"Stat1"
[173]	"Stat3"	"Stat4"	"Stat5"	"Tbx21"
[177]	"TEK"	"TGFB1"	"Tgfbr2"	"TIMP1"
[181]	"TIMP2"	"TLR3"	"TLR4"	"TLR7"
[185]	"TLR9"	"TNC"	"tnf"	"Tnfaip3"
[189]	"tnfrsf1a"	"tnfrsf1b"	"TNFSF11"	"Traf2"
[193]	"Vav1"	"VCAM1"	"VEGFA"	"VEGFB"
[197]	"WNT2B"	"WNT4"	"Zap70"	"ZAP70"
[201]	"Zeb2"			

[1]	119	68	72	67	153	71	114	164	126	120	186	155	172	2	163	146	113	187
[19]	121	160	136	143	61	85	189	183	42	55	123	180	44	111	6	135	60	73
[37]	173	8	166	27	81	28	52	161	32	105	29	138	139	127	144	179	128	116
[55]	63	162	181	74	26	140	69	151	70	156	19	7	174	39	150	112	75	82
[73]	134	159	185	79	5	78	152	12	169	170	87	40	21	58	109	147	133	131
[91]	18	86	192	9	37	41	57	125	65	4	165	168	182	154	141	98	33	34

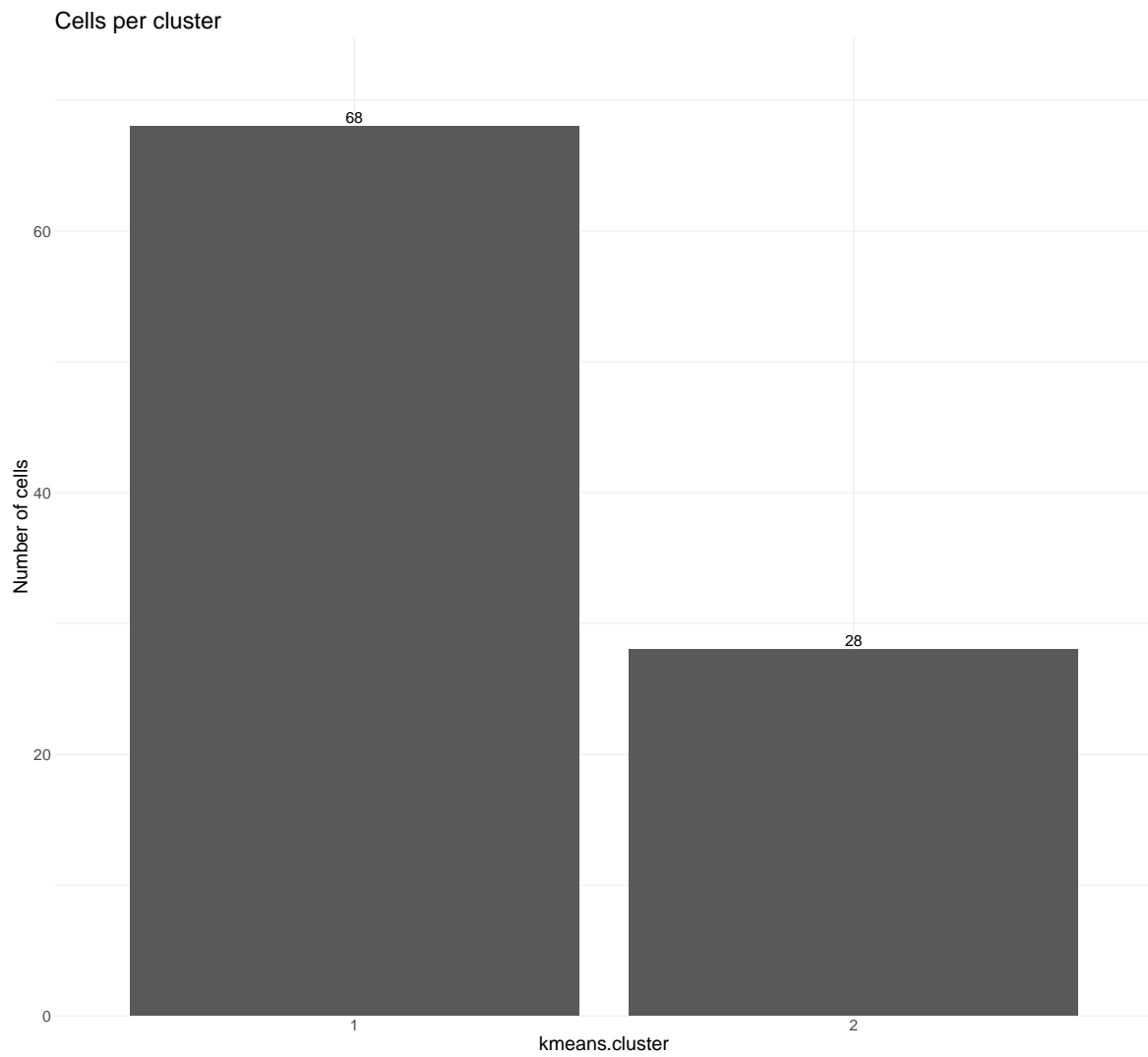
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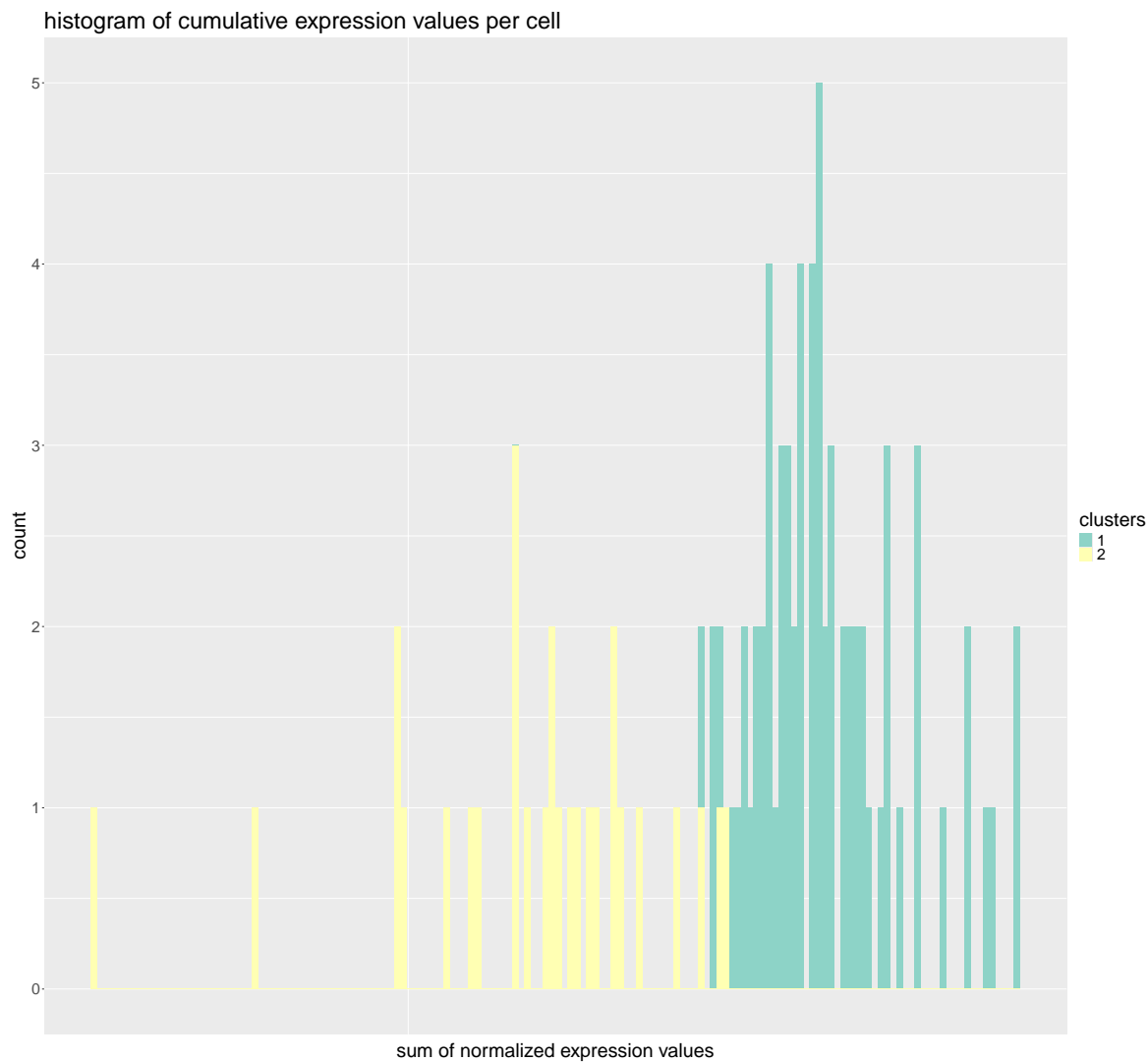
[109]  91  93  96 103 124 129 118  16  36  56 184  51 171  47  53  88 132 190
[127]  64 177 158 117  48 122   3  30  31  38  46  49  59 108 137 167 191  95
[145]  62  77 145  66  10 100 175  45  43  94 176 148 178  76  35   1  11  13
[163]  14  15  17  20  22  23  24  25  50  54  80  83  84  89  90  92  97  99
[181] 101 102 104 106 107 110 115 130 142 149 157 188
[1] "Length of pvals is 192"
      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 ITGB1. The last gene is: WNT2B"
chr [1:96, 1] "#FFFFB3" "#FFFFB3" "#FFFFB3" "#FFFFB3" "#FFFFB3" "#FFFFB3" ...
- attr(*, "dimnames")=List of 2
..$ : NULL
..$ : chr "Kmeans.clusters"

```



Cells per Cluster	n_cells
cluster_1	68
cluster_2	28





```
[1] "Column Names are: "
[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"	"CD44"	"EGFR"
[53]	"SPP1"	"CD83"	"il4ra"	"CD74"
[57]	"Nur77"	"Oas1b"	"LY75"	"PDGFB"
[61]	"Tnfaip3"	"Map2k6"	"Irf7"	"GCG"
[65]	"SST"	"tnfrsf1b"	"icam1"	"cd40"
[69]	"Oas2"	"H2.AA"	"ppargc1a"	"H2.DMA"
[73]	"Rsad2"	"CD24A"	"Bcl2"	"TLR4"
[77]	"COL11A1"	"pparg"	"INS2"	"ICAM1"
[81]	"Ifit3"	"Mx1"	"SFRP1"	"VCAM1"
[85]	"Ifi44"	"ANGPT1"	"ICOSL"	"PPY"
[89]	"ccr2"	"TGFB1"	"Tgfbr2"	"IGF2"
[93]	"COL1A1"	"CD36"	"FLT4"	"il7"
[97]	"PDPN"	"MMP9"	"MMP2"	"CD14"
[101]	"IGF1"	"Zeb2"	"BMP5"	"Ceacam1"
[105]	"COL1A2"	"FGR"	"LEPR"	"GHRL"
[109]	"Aim2"	"Stat4"	"TEK"	"TNFSF11"
[113]	"PTGS2"	"Oas1l"	"il25"	"cd86"
[117]	"CD86"	"Il12rb"	"Il18r1"	"il1r2"
[121]	"IL34"	"LCK"	"Mapk8"	"ITGAX"
[125]	"ccr6"	"CD8A"	"FGFR3"	"Vav1"
[129]	"DES"	"TIMP1"	"Cxc110"	"FAP"
[133]	"IL.21"	"MMP3"	"Zap70"	"GFAP"
[137]	"TNC"	"SELE"	"Isg15"	"CXCL13"
[141]	"KDR"	"ADGRE1"	"cd80"	"CD80"
[145]	"CLEC7A"	"ctla4"	"Cxcr3"	"foxp3"
[149]	"il6"	"NLRP3"	"Tbx21"	"ZAP70"
[153]	"IL1B"	"gata4"	"Icos"	"PDGFRB"
[157]	"GM13889"	"BMP7"	"Il27r"	"TLR7"
[161]	"CSF2RB"	"CSF1R"	"IL1A"	"TLR9"
[165]	"PECAM1"	"tnf"	"ICAM2"	"cd8a"
[169]	"ACTA2"	"Ccr1"	"ccr3"	"ccr4"
[173]	"ccr5"	"Ccr7"	"cd28"	"cd3e"
[177]	"CD3E"	"cd4"	"CD4"	"Cxcr4"
[181]	"FCGR1"	"Ifi44l"	"ifng"	"IFNG"
[185]	"il10"	"il12b"	"il17A"	"il2"
[189]	"Il27"	"il2ra"	"il3"	"il4"
[193]	"il5"	"il5ra"	"il7r"	"Irf4"
[197]	"MMP1A"	"Pd1"	"ppara"	"RSP01"
[201]	"WNT2B"			

[1] TRUE

[1] FALSE

[1] TRUE

[1] FALSE

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

[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"	"ITGB1"	"gsk3b"	"Hpvt"

[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"	"CD44"	"EGFR"
[53]	"SPP1"	"CD83"	"il4ra"	"CD74"
[57]	"Nur77"	"Oas1b"	"LY75"	"PDGFB"
[61]	"Tnfaip3"	"Map2k6"	"Irf7"	"GCG"
[65]	"SST"	"tnfrsf1b"	"icam1"	"cd40"
[69]	"Oas2"	"H2.AA"	"ppargc1a"	"H2.DMA"
[73]	"Rsad2"	"CD24A"	"Bcl2"	"TLR4"
[77]	"COL11A1"	"pparg"	"INS2"	"ICAM1"
[81]	"Ifit3"	"Mx1"	"SFRP1"	"VCAM1"
[85]	"Ifi44"	"ANGPT1"	"ICOSL"	"PPY"
[89]	"ccr2"	"TGFB1"	"Tgfbr2"	"IGF2"
[93]	"COL1A1"	"CD36"	"FLT4"	"il7"
[97]	"PDPN"	"MMP9"	"MMP2"	"CD14"
[101]	"IGF1"	"Zeb2"	"BMP5"	"Ceacam1"
[105]	"COL1A2"	"FGR"	"LEPR"	"GHRL"
[109]	"Aim2"	"Stat4"	"TEK"	"TNFSF11"
[113]	"PTGS2"	"Oas11"	"il25"	"cd86"
[117]	"CD86"	"Il12rb"	"Il18r1"	"il1r2"
[121]	"IL34"	"LCK"	"Mapk8"	"ITGAX"
[125]	"ccr6"	"CD8A"	"FGFR3"	"Vav1"
[129]	"DES"	"TIMP1"	"Cxc110"	"FAP"
[133]	"IL.21"	"MMP3"	"Zap70"	"GFAP"
[137]	"TNC"	"SELE"	"Isg15"	"CXCL13"
[141]	"KDR"	"ADGRE1"	"cd80"	"CD80"
[145]	"CLEC7A"	"ctla4"	"Cxcr3"	"foxp3"
[149]	"il6"	"NLRP3"	"Tbx21"	"ZAP70"
[153]	"IL1B"	"gata4"	"Icos"	"PDGFRB"
[157]	"GM13889"	"BMP7"	"Il27r"	"TLR7"
[161]	"CSF2RB"	"CSF1R"	"IL1A"	"TLR9"
[165]	"PECAM1"	"tnf"	"ICAM2"	"cd8a"
[169]	"ACTA2"	"Ccr1"	"ccr3"	"ccr4"
[173]	"ccr5"	"Ccr7"	"cd28"	"cd3e"
[177]	"CD3E"	"cd4"	"CD4"	"Cxcr4"
[181]	"FCGR1"	"Ifi441"	"ifng"	"IFNG"
[185]	"il10"	"il12b"	"il17A"	"il2"
[189]	"Il27"	"il2ra"	"il3"	"il4"
[193]	"il5"	"il5ra"	"il7r"	"Irf4"
[197]	"MMP1A"	"Pd1"	"ppara"	"RSP01"
[201]	"WNT2B"			

[1] "Which genes are dashed in the panel? IL-21 Pd1-1"

[1] "Test 1 is FALSE"

[1] "Test 2 is FALSE"

[1] "Test1and2 is FALSE"

[1] "Test3 is FALSE"

[1] "The first column you'll pull is: ITGB1"

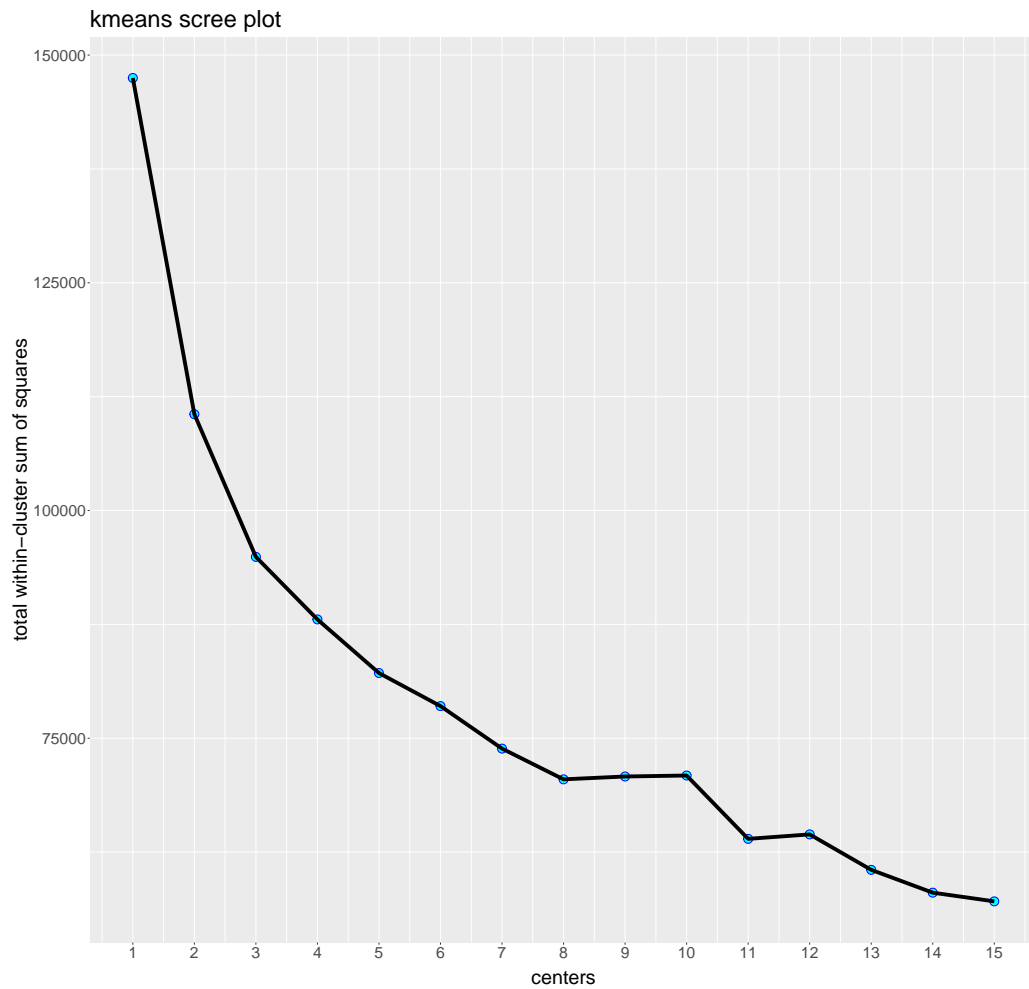
```

[1] "The last column you'll pull is: WNT2B"
[1] "ITGB1"      "gsk3b"      "Hprt"       "gsk3a"      "pten"       "HIF1A"
[7] "Irf2"       "Stat3"      "Ly6e"      "Jak1"       "VEGFA"      "PTK2"
[13] "TIMP2"      "ACVR1"      "Stat1"      "Pdl-1"      "Irf1"       "VEGFB"
[19] "Jak2"       "Socs3"      "nfkb1"     "PDGFA"      "gapdh"      "Ifngr1"
[25] "WNT4"       "Traf2"      "CSF1"      "FGFR1"      "KLF5"       "tnfrsf1a"
[31] "CSF2RA"     "INS1"      "ANPEP"     "NFATC1"     "Fyn"        "IAPP"
[37] "TLR3"       "Bcl6"      "Stat5"     "Cd44"       "Ifit1"      "CD44"
[43] "EGFR"       "SPP1"      "CD83"      "il4ra"      "CD74"       "Nur77"
[49] "Oas1b"      "LY75"      "PDGFB"     "Tnfaip3"    "Map2k6"     "Irf7"
[55] "GCG"        "SST"       "tnfrsf1b"  "icam1"      "cd40"       "Oas2"
[61] "H2.AA"      "ppargc1a"  "H2.DMA"    "Rsad2"      "CD24A"      "Bcl2"
[67] "TLR4"       "COL11A1"   "pparg"     "INS2"      "ICAM1"      "Ifit3"
[73] "Mx1"        "SFRP1"     "VCAM1"     "Ifi44"      "ANGPT1"     "ICOSL"
[79] "PPY"        "ccr2"      "TGFB1"     "Tgfbr2"     "IGF2"       "COL1A1"
[85] "CD36"       "FLT4"      "il7"       "PDPN"       "MMP9"       "MMP2"
[91] "CD14"       "IGF1"      "Zeb2"      "BMP5"       "Ceacam1"    "COL1A2"
[97] "FGR"        "LEPR"      "GHRL"      "Aim2"       "Stat4"      "TEK"
[103] "TNFSF11"    "PTGS2"     "Oas11"     "il25"       "cd86"       "CD86"
[109] "Il12rb"     "Il18r1"    "il1r2"     "IL34"       "LCK"        "Mapk8"
[115] "ITGAX"      "ccr6"      "CD8A"      "FGFR3"      "Vav1"       "DES"
[121] "TIMP1"      "Cxc110"    "FAP"       "IL-21"      "MMP3"       "Zap70"
[127] "GFAP"       "TNC"       "SELE"      "Isg15"      "CXCL13"     "KDR"
[133] "ADGRE1"     "cd80"      "CD80"      "CLEC7A"     "ctla4"      "Cxcr3"
[139] "foxp3"      "il6"       "NLRP3"     "Tbx21"      "ZAP70"      "IL1B"
[145] "gata4"      "Icos"      "PDGFRB"    "GM13889"    "BMP7"       "Il127r"
[151] "TLR7"       "CSF2RB"    "CSF1R"     "IL1A"       "TLR9"       "PECAM1"
[157] "tnf"        "ICAM2"     "cd8a"      "ACTA2"      "Ccr1"       "ccr3"
[163] "ccr4"       "ccr5"      "Ccr7"      "cd28"       "cd3e"       "CD3E"
[169] "cd4"        "CD4"       "Cxcr4"     "FCGR1"      "Ifi441"     "ifng"
[175] "IFNG"       "il10"      "il12b"     "il17A"      "il2"        "Il127"
[181] "il2ra"      "il3"       "il4"       "il5"        "il5ra"      "il7r"
[187] "Irf4"       "MMP1A"     "Pd1"       "ppara"      "RSP01"      "WNT2B"

[1] "PanelNumber equals: 1 . Columns to be sent for kmeans testing: ITGB1 and WNT2B"
[1] "Column names after searching for the column pattern and after selecting the right columns. The fol
[1] "ITGB1"      "gsk3b"      "Hprt"       "gsk3a"      "pten"       "HIF1A"
[7] "Irf2"       "Stat3"      "Ly6e"      "Jak1"       "VEGFA"      "PTK2"
[13] "TIMP2"      "ACVR1"      "Stat1"      "Pdl-1"      "Irf1"       "VEGFB"
[19] "Jak2"       "Socs3"      "nfkb1"     "PDGFA"      "gapdh"      "Ifngr1"
[25] "WNT4"       "Traf2"      "CSF1"      "FGFR1"      "KLF5"       "tnfrsf1a"
[31] "CSF2RA"     "INS1"      "ANPEP"     "NFATC1"     "Fyn"        "IAPP"
[37] "TLR3"       "Bcl6"      "Stat5"     "Cd44"       "Ifit1"      "CD44"
[43] "EGFR"       "SPP1"      "CD83"      "il4ra"      "CD74"       "Nur77"
[49] "Oas1b"      "LY75"      "PDGFB"     "Tnfaip3"    "Map2k6"     "Irf7"
[55] "GCG"        "SST"       "tnfrsf1b"  "icam1"      "cd40"       "Oas2"
[61] "H2.AA"      "ppargc1a"  "H2.DMA"    "Rsad2"      "CD24A"      "Bcl2"
[67] "TLR4"       "COL11A1"   "pparg"     "INS2"      "ICAM1"      "Ifit3"
[73] "Mx1"        "SFRP1"     "VCAM1"     "Ifi44"      "ANGPT1"     "ICOSL"
[79] "PPY"        "ccr2"      "TGFB1"     "Tgfbr2"     "IGF2"       "COL1A1"
[85] "CD36"       "FLT4"      "il7"       "PDPN"       "MMP9"       "MMP2"
[91] "CD14"       "IGF1"      "Zeb2"      "BMP5"       "Ceacam1"    "COL1A2"
[97] "FGR"        "LEPR"      "GHRL"      "Aim2"       "Stat4"      "TEK"
[103] "TNFSF11"    "PTGS2"     "Oas11"     "il25"       "cd86"       "CD86"
[109] "Il12rb"     "Il18r1"    "il1r2"     "IL34"       "LCK"        "Mapk8"

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[115]	"ITGAX"	"CCR6"	"CD8A"	"FGFR3"	"Vav1"	"DES"
[121]	"TIMP1"	"CXC110"	"FAP"	"IL-21"	"MMP3"	"Zap70"
[127]	"GFAP"	"TNC"	"SELE"	"ISG15"	"CXCL13"	"KDR"
[133]	"ADGRE1"	"CD80"	"CD80"	"CLEC7A"	"CTLA4"	"CXCR3"
[139]	"FOXP3"	"IL6"	"NLRP3"	"TBX21"	"ZAP70"	"IL1B"
[145]	"GATA4"	"ICOS"	"PDGFRB"	"GM13889"	"BMP7"	"IL27r"
[151]	"TLR7"	"CSF2RB"	"CSF1R"	"IL1A"	"TLR9"	"PECAM1"
[157]	"TNF"	"ICAM2"	"CD8A"	"ACTA2"	"CCR1"	"CCR3"
[163]	"CCR4"	"CCR5"	"CCR7"	"CD28"	"CD3E"	"CD3E"
[169]	"CD4"	"CD4"	"CXCR4"	"FCGR1"	"IFI441"	"IFNG"
[175]	"IFNG"	"IL10"	"IL12b"	"IL17A"	"IL12"	"IL27"
[181]	"IL2RA"	"IL3"	"IL4"	"IL5"	"IL5RA"	"IL7r"
[187]	"IRF4"	"MMP1A"	"PD1"	"PPARA"	"RSP01"	"WNT2B"



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[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" "ITGB1"           "gsk3b"           "Hprt"
[13] "gsk3a"           "pten"            "HIF1A"           "Irf2"
[17] "Stat3"           "Ly6e"            "Jak1"            "VEGFA"
[21] "PTK2"           "TIMP2"           "ACVR1"           "Stat1"
[25] "Pdl-1"          "Irf1"            "VEGFB"           "Jak2"
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[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"	"CD44"	"EGFR"
[53]	"SPP1"	"CD83"	"il4ra"	"CD74"
[57]	"Nur77"	"Oas1b"	"LY75"	"PDGFB"
[61]	"Tnfaip3"	"Map2k6"	"Irf7"	"GCG"
[65]	"SST"	"tnfrsf1b"	"icam1"	"cd40"
[69]	"Oas2"	"H2.AA"	"ppargc1a"	"H2.DMA"
[73]	"Rsad2"	"CD24A"	"Bcl2"	"TLR4"
[77]	"COL11A1"	"pparg"	"INS2"	"ICAM1"
[81]	"Ifit3"	"Mx1"	"SFRP1"	"VCAM1"
[85]	"Ifi44"	"ANGPT1"	"ICOSL"	"PPY"
[89]	"ccr2"	"TGFB1"	"Tgfbr2"	"IGF2"
[93]	"COL1A1"	"CD36"	"FLT4"	"il7"
[97]	"PDPN"	"MMP9"	"MMP2"	"CD14"
[101]	"IGF1"	"Zeb2"	"BMP5"	"Ceacam1"
[105]	"COL1A2"	"FGR"	"LEPR"	"GHRL"
[109]	"Aim2"	"Stat4"	"TEK"	"TNFSF11"
[113]	"PTGS2"	"Oas11"	"il25"	"cd86"
[117]	"CD86"	"Il12rb"	"Il18r1"	"il1r2"
[121]	"IL34"	"LCK"	"Mapk8"	"ITGAX"
[125]	"CCR6"	"CD8A"	"FGFR3"	"Vav1"
[129]	"DES"	"TIMP1"	"Cxc110"	"FAP"
[133]	"IL-21"	"MMP3"	"Zap70"	"GFAP"
[137]	"TNC"	"SELE"	"Isg15"	"CXCL13"
[141]	"KDR"	"ADGRE1"	"cd80"	"CD80"
[145]	"CLEC7A"	"ctla4"	"Cxcr3"	"foxp3"
[149]	"il6"	"NLRP3"	"Tbx21"	"ZAP70"
[153]	"IL1B"	"gata4"	"Icos"	"PDGFRB"
[157]	"GM13889"	"BMP7"	"Il27r"	"TLR7"
[161]	"CSF2RB"	"CSF1R"	"IL1A"	"TLR9"
[165]	"PECAM1"	"tnf"	"ICAM2"	"cd8a"
[169]	"ACTA2"	"Ccr1"	"CCR3"	"CCR4"
[173]	"CCR5"	"Ccr7"	"cd28"	"cd3e"
[177]	"CD3E"	"cd4"	"CD4"	"Cxcr4"
[181]	"FCGR1"	"Ifi441"	"ifng"	"IFNG"
[185]	"il10"	"il12b"	"il17A"	"il2"
[189]	"Il27"	"il2ra"	"il3"	"il4"
[193]	"il5"	"il5ra"	"il7r"	"Irf4"
[197]	"MMP1A"	"Pd1"	"ppara"	"RSP01"
[201]	"WNT2B"	"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"	"ITGB1"	"gsk3b"	"Hprt"
[13]	"gsk3a"	"pten"	"HIF1A"	"Irf2"
[17]	"Stat3"	"Ly6e"	"Jak1"	"VEGFA"
[21]	"PTK2"	"TIMP2"	"ACVR1"	"Stat1"
[25]	"Pd1-1"	"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"	"CD44"	"EGFR"
[53]	"SPP1"	"CD83"	"il4ra"	"CD74"
[57]	"Nur77"	"Oas1b"	"LY75"	"PDGFB"
[61]	"Tnfaip3"	"Map2k6"	"Irf7"	"GCG"
[65]	"SST"	"tnfrsf1b"	"icam1"	"cd40"
[69]	"Oas2"	"H2.AA"	"ppargc1a"	"H2.DMA"
[73]	"Rsad2"	"CD24A"	"Bcl2"	"TLR4"
[77]	"COL11A1"	"pparg"	"INS2"	"ICAM1"
[81]	"Ifit3"	"Mx1"	"SFRP1"	"VCAM1"
[85]	"Ifi44"	"ANGPT1"	"ICOSL"	"PPY"
[89]	"ccr2"	"TGFB1"	"Tgfbr2"	"IGF2"
[93]	"COL1A1"	"CD36"	"FLT4"	"il7"
[97]	"PDPN"	"MMP9"	"MMP2"	"CD14"
[101]	"IGF1"	"Zeb2"	"BMP5"	"Ceacam1"
[105]	"COL1A2"	"FGR"	"LEPR"	"GHRL"
[109]	"Aim2"	"Stat4"	"TEK"	"TNFSF11"
[113]	"PTGS2"	"Oas11"	"il25"	"cd86"
[117]	"CD86"	"Il12rb"	"Il18r1"	"il1r2"
[121]	"IL34"	"LCK"	"Mapk8"	"ITGAX"
[125]	"ccr6"	"CD8A"	"FGFR3"	"Vav1"
[129]	"DES"	"TIMP1"	"Cxc110"	"FAP"
[133]	"IL-21"	"MMP3"	"Zap70"	"GFAP"
[137]	"TNC"	"SELE"	"Isg15"	"CXCL13"
[141]	"KDR"	"ADGRE1"	"cd80"	"CD80"
[145]	"CLEC7A"	"ctla4"	"Cxcr3"	"foxp3"
[149]	"il6"	"NLRP3"	"Tbx21"	"ZAP70"
[153]	"IL1B"	"gata4"	"Icos"	"PDGFRB"
[157]	"GM13889"	"BMP7"	"Il27r"	"TLR7"
[161]	"CSF2RB"	"CSF1R"	"IL1A"	"TLR9"
[165]	"PECAM1"	"tnf"	"ICAM2"	"cd8a"
[169]	"ACTA2"	"Ccr1"	"ccr3"	"ccr4"
[173]	"ccr5"	"Ccr7"	"cd28"	"cd3e"
[177]	"CD3E"	"cd4"	"CD4"	"Cxcr4"
[181]	"FCGR1"	"Ifi441"	"ifng"	"IFNG"
[185]	"il10"	"il12b"	"il17A"	"il2"
[189]	"Il27"	"il2ra"	"il3"	"il4"
[193]	"il5"	"il5ra"	"il7r"	"Irf4"
[197]	"MMP1A"	"Pd1"	"ppara"	"RSP01"
[201]	"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"	"ITGB1"	"gsk3b"	"Hprt"
[13]	"gsk3a"	"pten"	"HIF1A"	"Irf2"
[17]	"Stat3"	"Ly6e"	"Jak1"	"VEGFA"
[21]	"PTK2"	"TIMP2"	"ACVR1"	"Stat1"
[25]	"Pd1-1"	"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"	"CD44"	"EGFR"														
[53]	"SPP1"	"CD83"	"il4ra"	"CD74"														
[57]	"Nur77"	"Oas1b"	"LY75"	"PDGFB"														
[61]	"Tnfaip3"	"Map2k6"	"Irf7"	"GCG"														
[65]	"SST"	"tnfrsf1b"	"icam1"	"cd40"														
[69]	"Oas2"	"H2.AA"	"ppargc1a"	"H2.DMA"														
[73]	"Rsad2"	"CD24A"	"Bcl2"	"TLR4"														
[77]	"COL11A1"	"pparg"	"INS2"	"ICAM1"														
[81]	"Ifit3"	"Mx1"	"SFRP1"	"VCAM1"														
[85]	"Ifi44"	"ANGPT1"	"ICOSL"	"PPY"														
[89]	"ccr2"	"TGFB1"	"Tgfbr2"	"IGF2"														
[93]	"COL1A1"	"CD36"	"FLT4"	"il7"														
[97]	"PDPN"	"MMP9"	"MMP2"	"CD14"														
[101]	"IGF1"	"Zeb2"	"BMP5"	"Ceacam1"														
[105]	"COL1A2"	"FGR"	"LEPR"	"GHRL"														
[109]	"Aim2"	"Stat4"	"TEK"	"TNFSF11"														
[113]	"PTGS2"	"Oas11"	"il25"	"cd86"														
[117]	"CD86"	"Il12rb"	"Il18r1"	"il1r2"														
[121]	"IL34"	"LCK"	"Mapk8"	"ITGAX"														
[125]	"ccr6"	"CD8A"	"FGFR3"	"Vav1"														
[129]	"DES"	"TIMP1"	"Cxc110"	"FAP"														
[133]	"IL-21"	"MMP3"	"Zap70"	"GFAP"														
[137]	"TNC"	"SELE"	"Isg15"	"CXCL13"														
[141]	"KDR"	"ADGRE1"	"cd80"	"CD80"														
[145]	"CLEC7A"	"ctla4"	"Cxcr3"	"foxp3"														
[149]	"il6"	"NLRP3"	"Tbx21"	"ZAP70"														
[153]	"IL1B"	"gata4"	"Icos"	"PDGFRB"														
[157]	"GM13889"	"BMP7"	"Il27r"	"TLR7"														
[161]	"CSF2RB"	"CSF1R"	"IL1A"	"TLR9"														
[165]	"PECAM1"	"tnf"	"ICAM2"	"cd8a"														
[169]	"ACTA2"	"Ccr1"	"ccr3"	"ccr4"														
[173]	"ccr5"	"Ccr7"	"cd28"	"cd3e"														
[177]	"CD3E"	"cd4"	"CD4"	"Cxcr4"														
[181]	"FCGR1"	"Ifi441"	"ifng"	"IFNG"														
[185]	"il10"	"il12b"	"il17A"	"il2"														
[189]	"Il27"	"il2ra"	"il3"	"il4"														
[193]	"il5"	"il5ra"	"il7r"	"Irf4"														
[197]	"MMP1A"	"Pd1"	"ppara"	"RSP01"														
[201]	"WNT2B"																	
[1]	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
[19]	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
[37]	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
[55]	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
[73]	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
[91]	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108
[109]	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126
[127]	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144
[145]	145	146	147	148	149	150	151	152	153	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	184	185	186	187	188	189	190	191	192						

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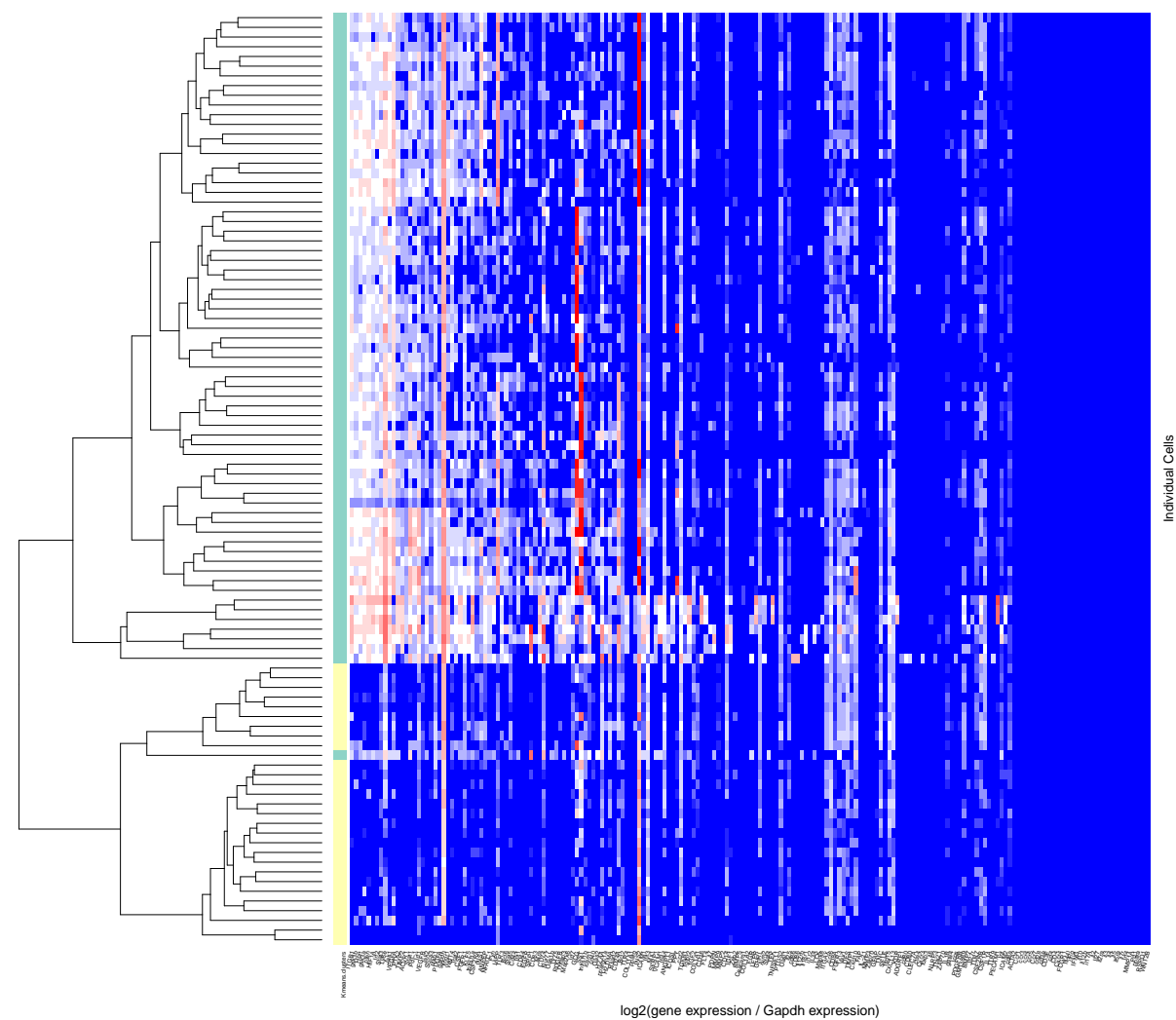
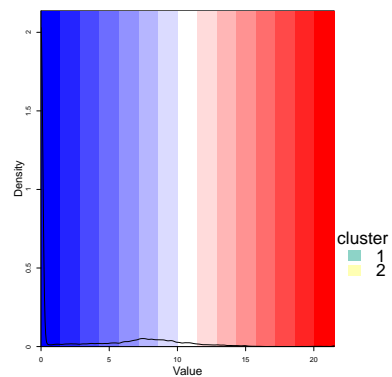
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      "islets" "deepskyblue2"
      [,1]      [,2]
[1,] "islets" "deepskyblue2"
uniqueSources      colorsList
      "tissue"      NA
      [1] "cellSource" "probe" "age" "patient"
      [5] "SPA" "SPAM" "SPAMcell" "cellType"
      [9] "kmeans.cluster" "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" "CD44" "EGFR"
      [53] "SPP1" "CD83" "il4ra" "CD74"
      [57] "Nur77" "Oas1b" "LY75" "PDGFB"
      [61] "Tnfaip3" "Map2k6" "Irf7" "GCG"
      [65] "SST" "tnfrsf1b" "icam1" "cd40"
      [69] "Oas2" "H2.AA" "ppargc1a" "H2.DMA"
      [73] "Rsad2" "CD24A" "Bcl2" "TLR4"
      [77] "COL11A1" "pparg" "INS2" "ICAM1"
      [81] "Ifit3" "Mx1" "SFRP1" "VCAM1"
      [85] "Ifi44" "ANGPT1" "ICOSL" "PPY"
      [89] "ccr2" "TGFB1" "Tgfbr2" "IGF2"
      [93] "COL1A1" "CD36" "FLT4" "il7"
      [97] "PDPN" "MMP9" "MMP2" "CD14"
      [101] "IGF1" "Zeb2" "BMP5" "Ceacam1"
      [105] "COL1A2" "FGR" "LEPR" "GHRL"
      [109] "Aim2" "Stat4" "TEK" "TNFSF11"
      [113] "PTGS2" "Oas11" "il25" "cd86"
      [117] "CD86" "Il12rb" "Il18r1" "il1r2"
      [121] "IL34" "LCK" "Mapk8" "ITGAX"
      [125] "ccr6" "CD8A" "FGFR3" "Vav1"
      [129] "DES" "TIMP1" "Cxc110" "FAP"
      [133] "IL-21" "MMP3" "Zap70" "GFAP"
      [137] "TNC" "SELE" "Isg15" "CXCL13"
      [141] "KDR" "ADGRE1" "cd80" "CD80"
      [145] "CLEC7A" "ctla4" "Cxcr3" "foxp3"
      [149] "il6" "NLRP3" "Tbx21" "ZAP70"
      [153] "IL1B" "gata4" "Icos" "PDGFRB"
      [157] "GM13889" "BMP7" "Il27r" "TLR7"
      [161] "CSF2RB" "CSF1R" "IL1A" "TLR9"
      [165] "PECAM1" "tnf" "ICAM2" "cd8a"
      [169] "ACTA2" "Ccr1" "ccr3" "ccr4"
      [173] "ccr5" "Ccr7" "cd28" "cd3e"
      [177] "CD3E" "cd4" "CD4" "Cxcr4"
      [181] "FCGR1" "Ifi441" "ifng" "IFNG"
      [185] "il10" "il12b" "il17A" "il2"

```

```

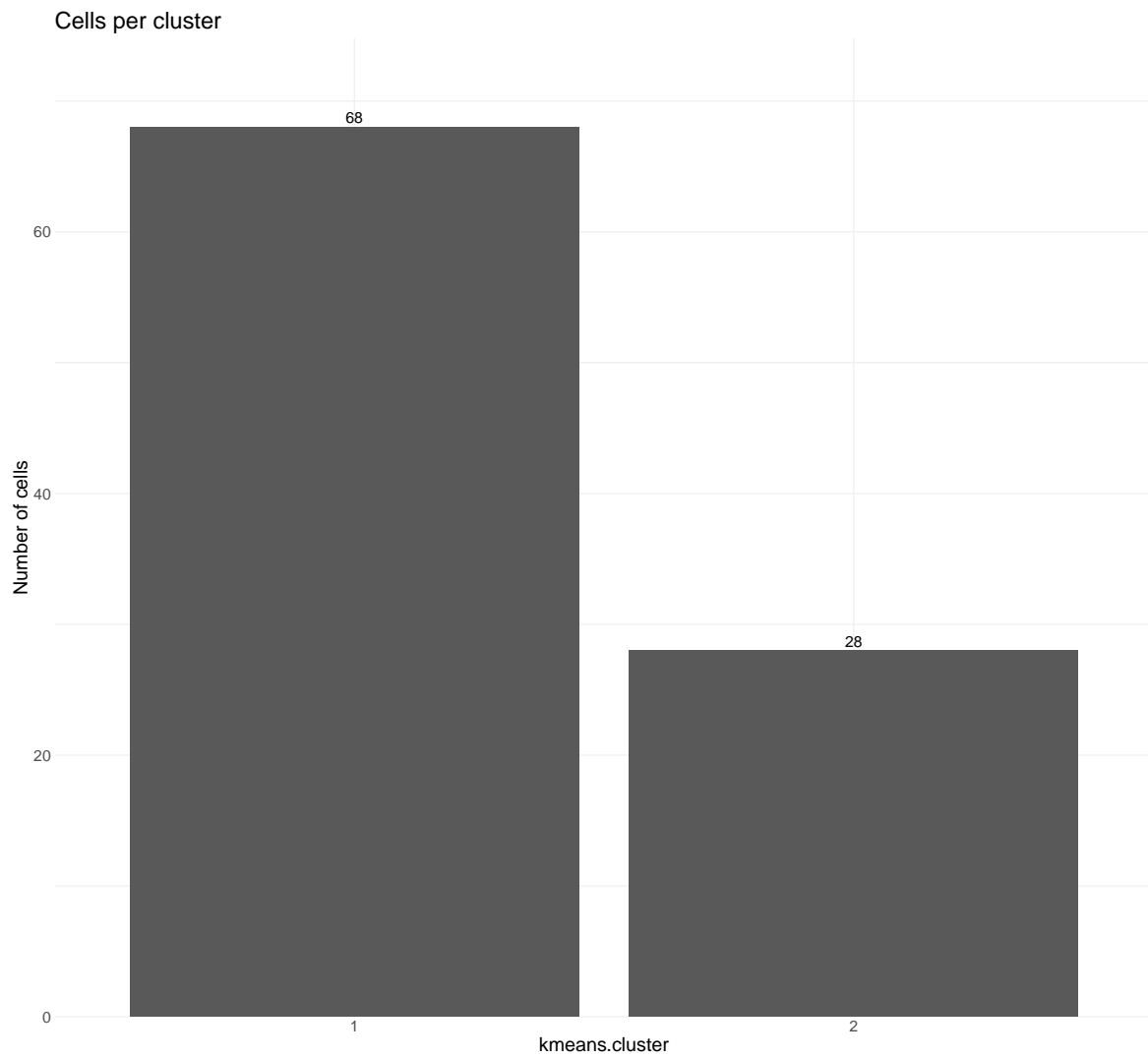
[189] "Il27"           "il2ra"           "il3"             "il4"
[193] "il5"           "il5ra"           "il7r"            "Irf4"
[197] "MMP1A"         "Pd1"             "ppara"           "RSP01"
[201] "WNT2B"
[1] "The value in idCols is 9 and the first column for the heatmap is kmeans.cluster while the last col

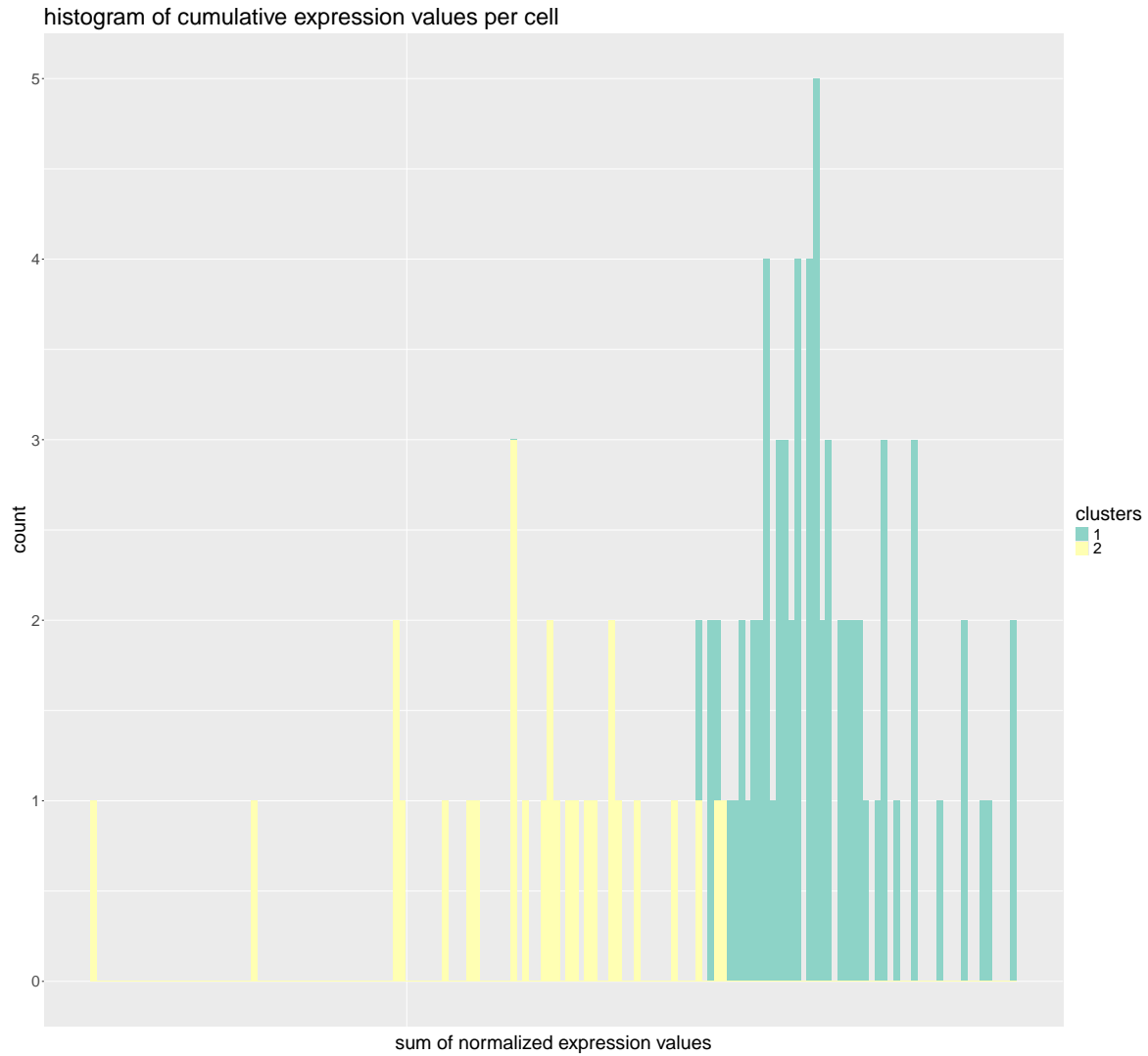
```



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

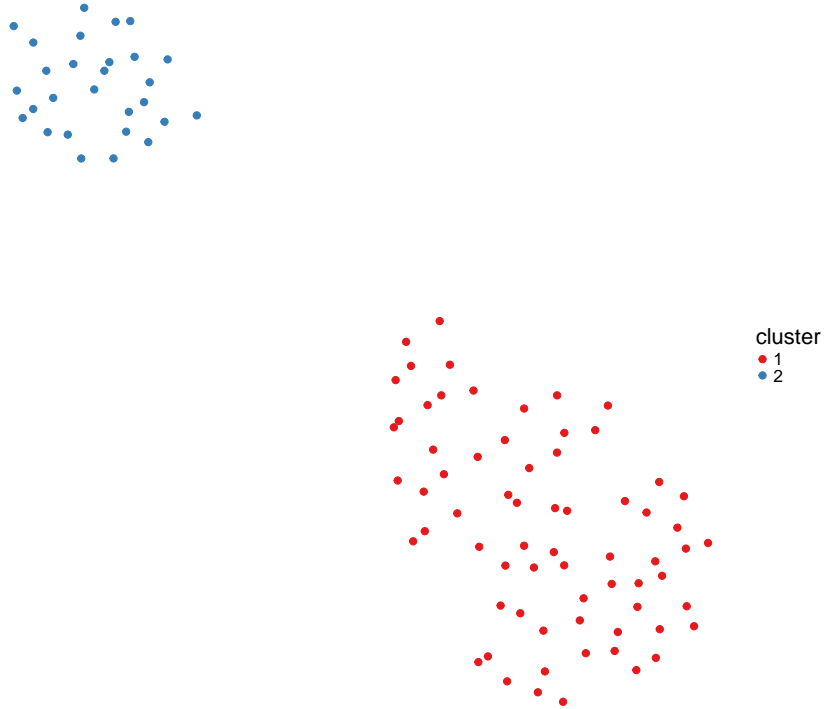
```
#ctClust <- plotTSNE(ctClust, colorby = c("kmeans.cluster", "Gene_List"), Genes = c("ACTA2", "ACVR1", "ADAM",
#"CCL13", "CCR1", "CCR2", "CCR3", "CCR4", "CCR5", "CCR6", "CCR7", "CD14", "CD24A", "CD28",
#"CD36", "CD3E", "CD4", "CD40", "CD44", "CD74", "CD80", "CD83", "CD86", "CD8A", "CEACAM1",
#"CLEC7A", "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"))
```

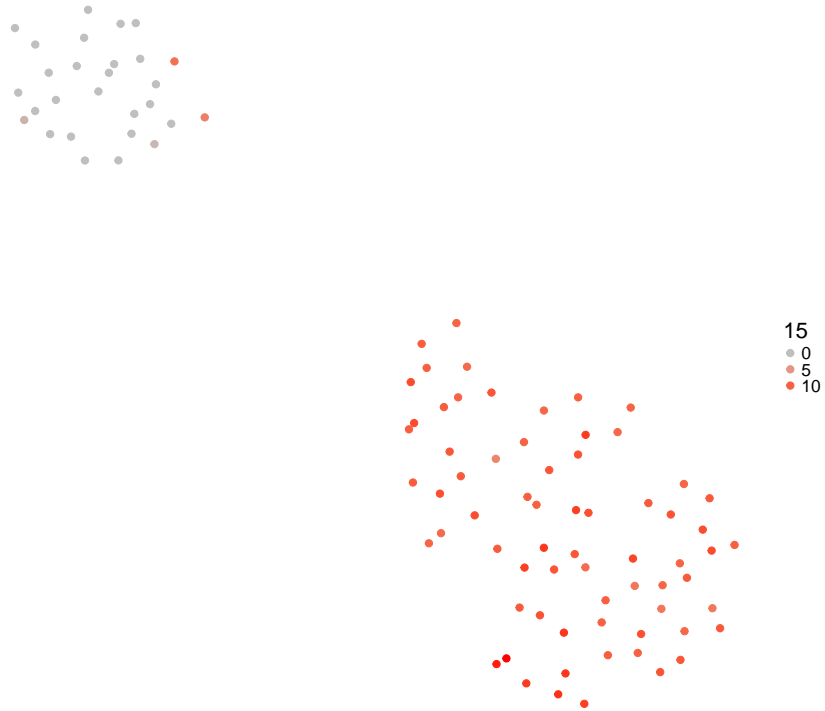
```
#ZO edit: Now using UMAP
```

```
ctClust <- plotUMAP(ctClust, colorby = c("kmeans.cluster", "Gene_List"), Genes = c("ACTA2", "ACVR1", "ADG",
"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"))
```

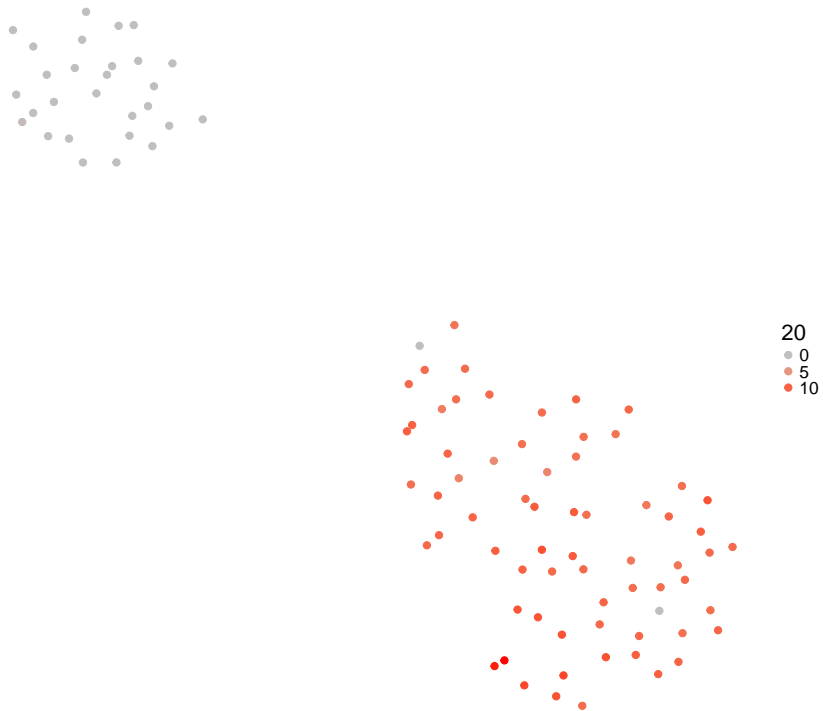
UMAP between tissues (colored by kmeans.cluster)



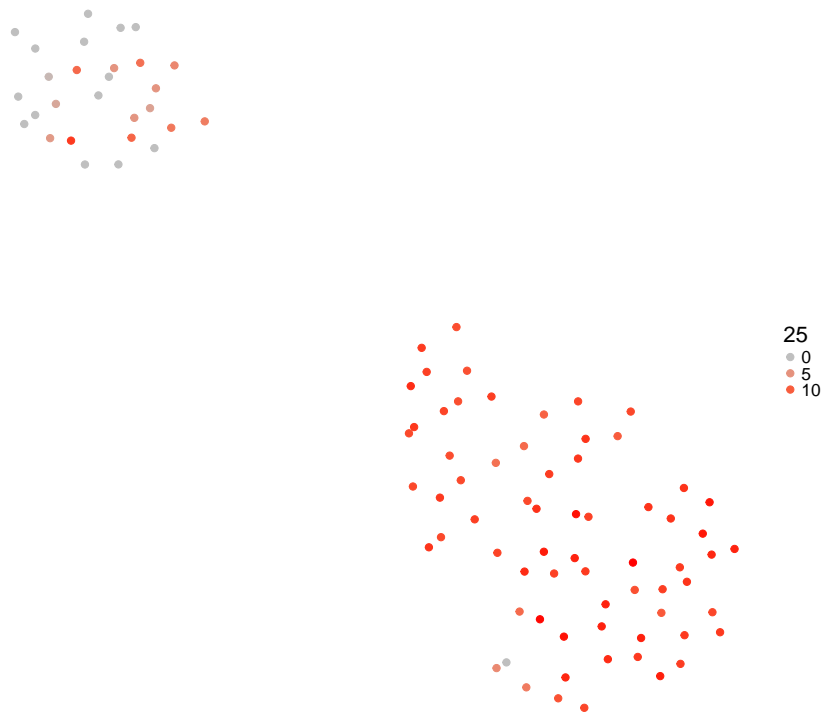
UMAP colored by ITGB1 expression



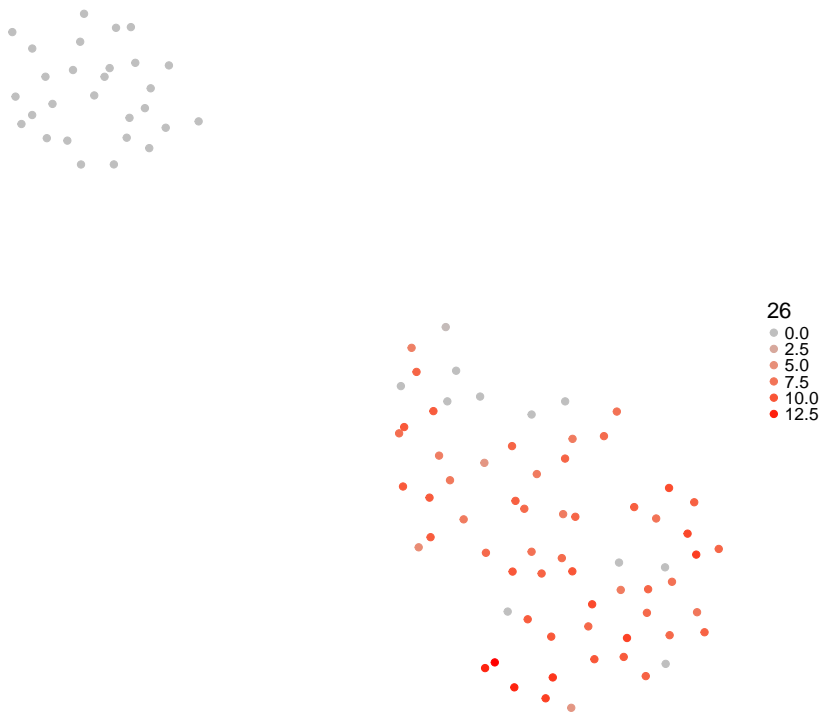
UMAP colored by HIF1A expression



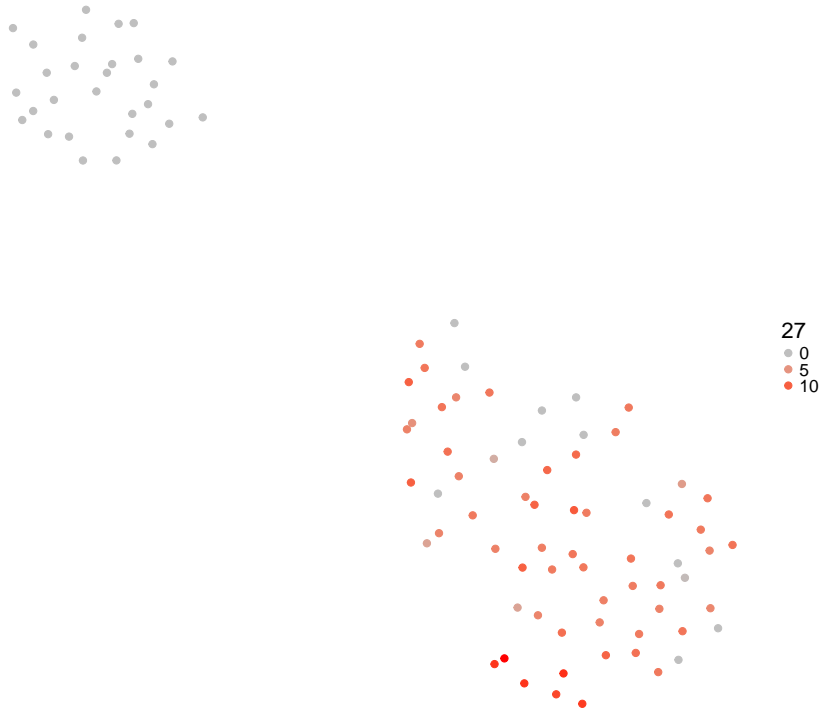
UMAP colored by VEGFA expression



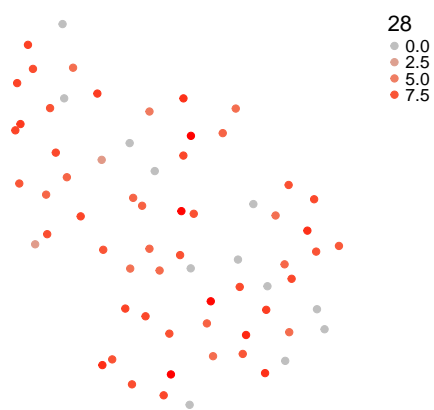
UMAP colored by PTK2 expression



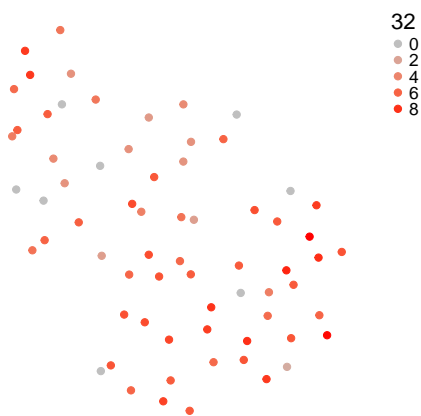
UMAP colored by TIMP2 expression



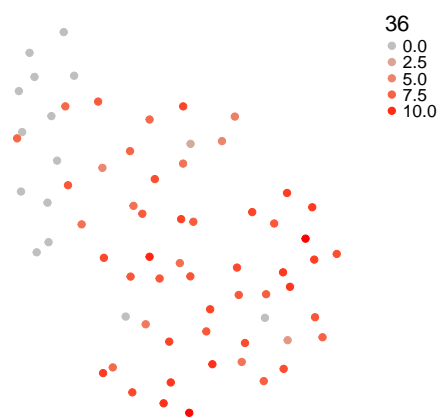
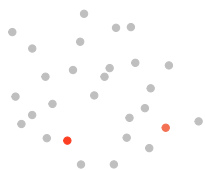
UMAP colored by ACVR1 expression



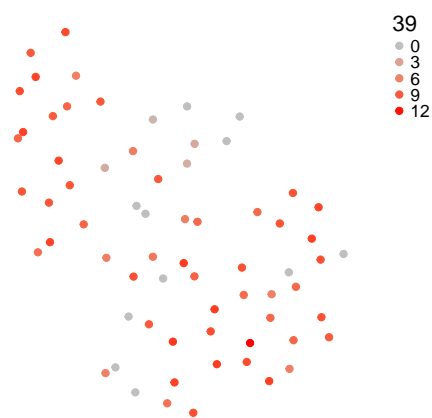
UMAP colored by VEGFB expression



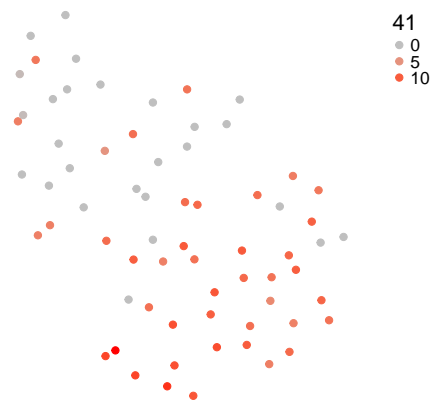
UMAP colored by PDGFA expression



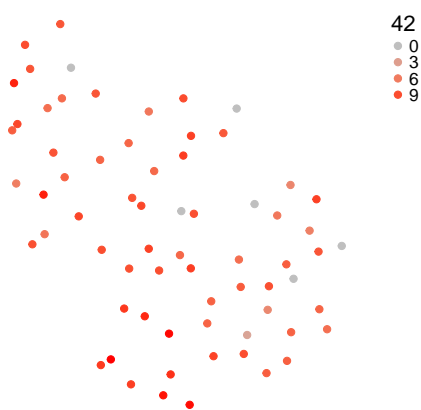
UMAP colored by WNT4 expression



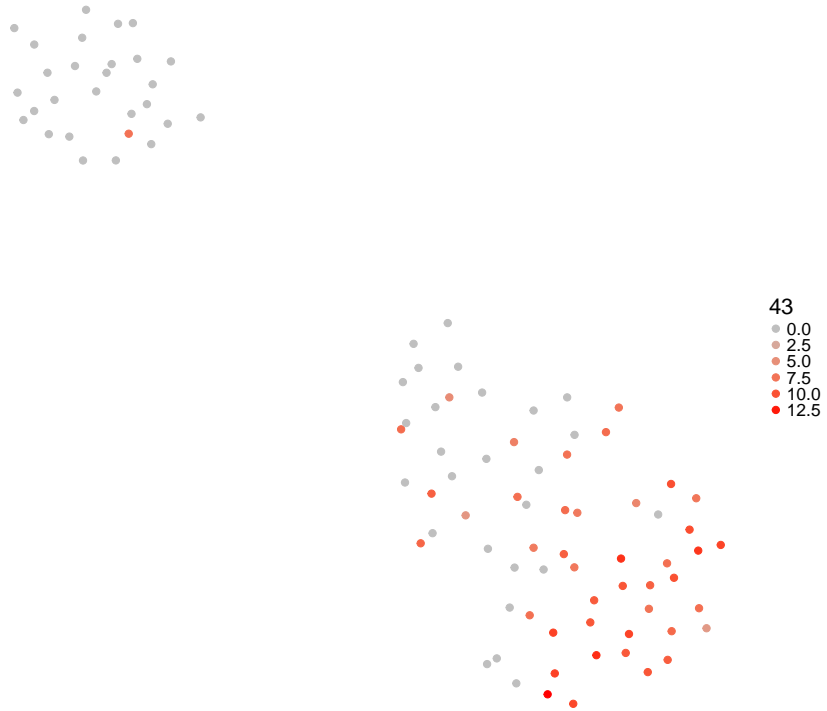
UMAP colored by CSF1 expression



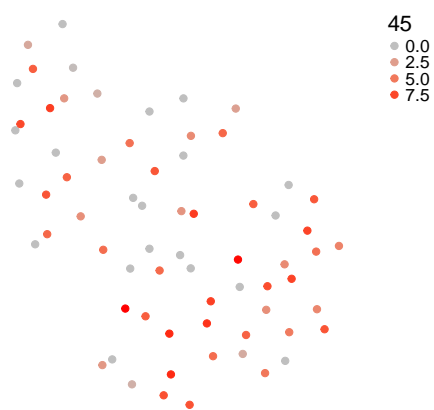
UMAP colored by FGFR1 expression



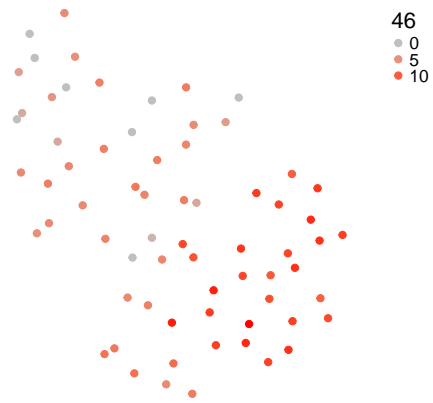
UMAP colored by KLF5 expression



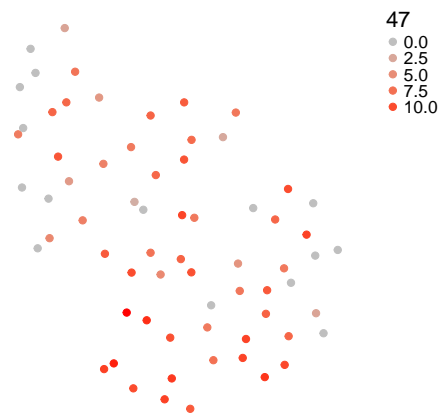
UMAP colored by CSF2RA expression



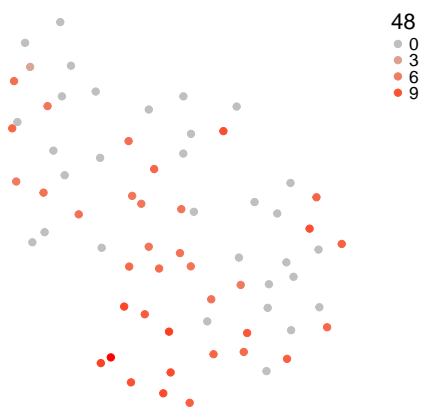
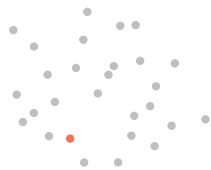
UMAP colored by INS1 expression



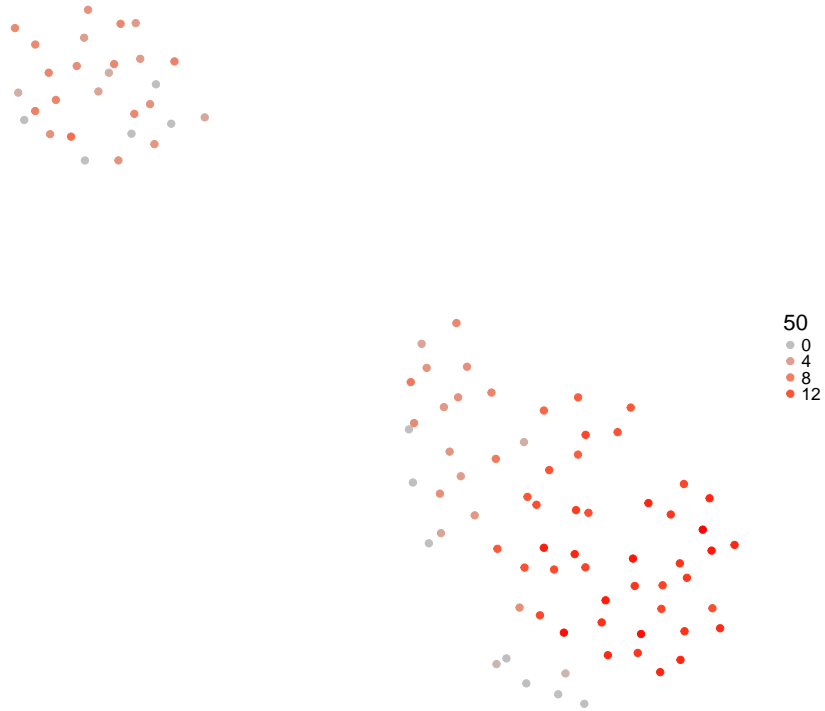
UMAP colored by ANPEP expression



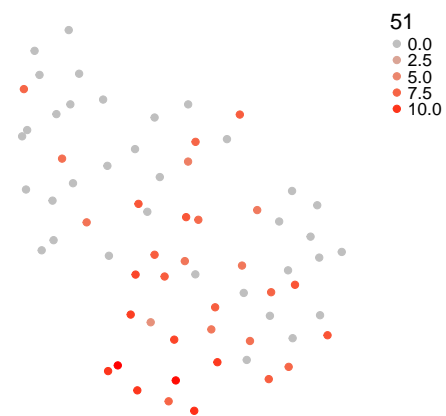
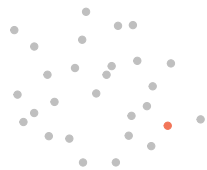
UMAP colored by NFATC1 expression



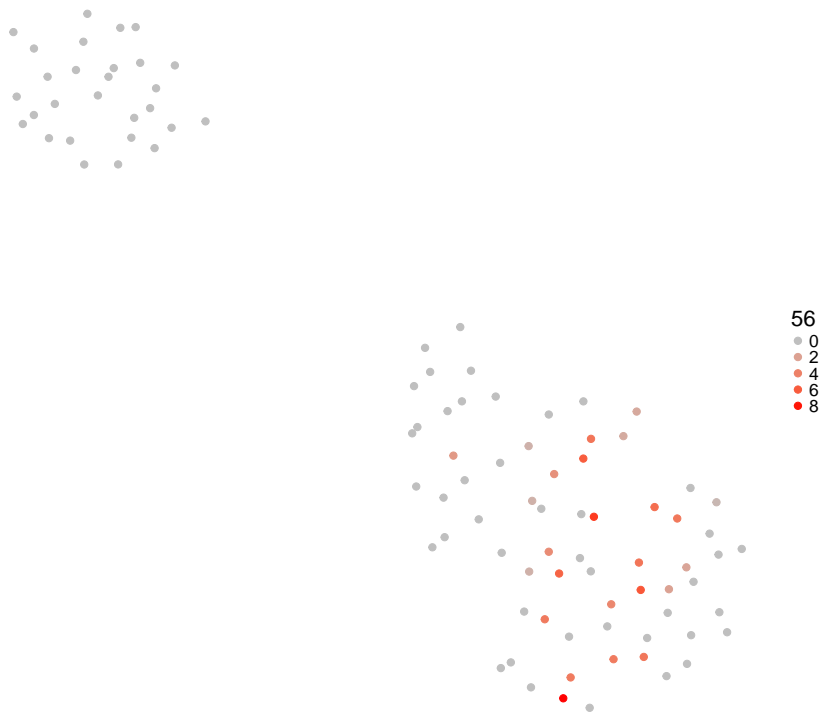
UMAP colored by IAPP expression



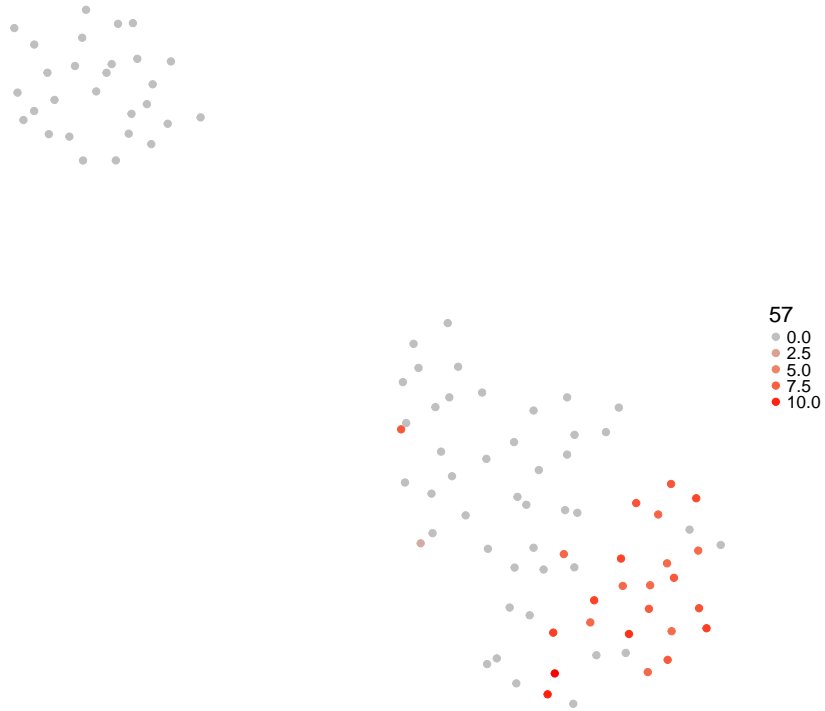
UMAP colored by TLR3 expression



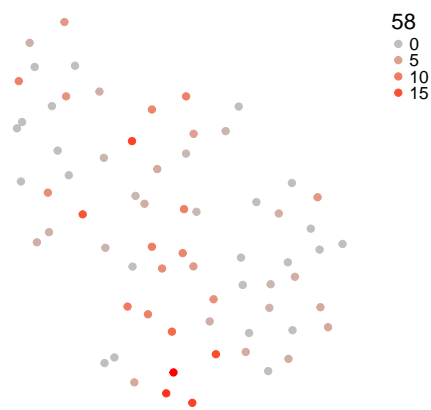
UMAP colored by CD44 expression



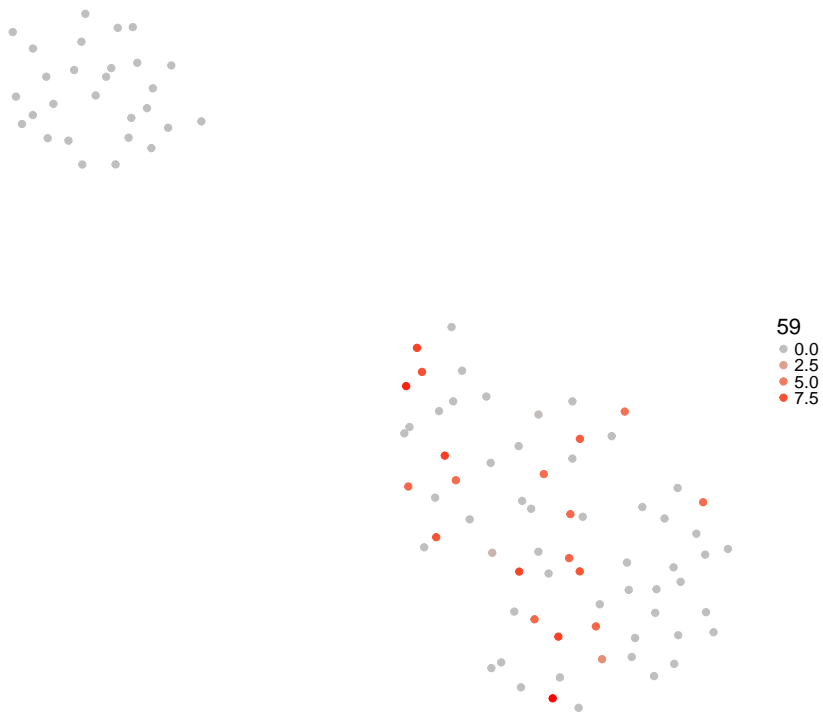
UMAP colored by EGFR expression



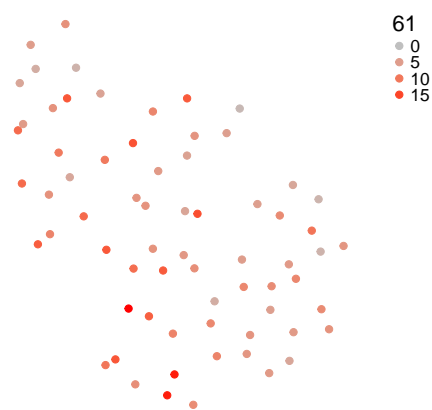
UMAP colored by SPP1 expression



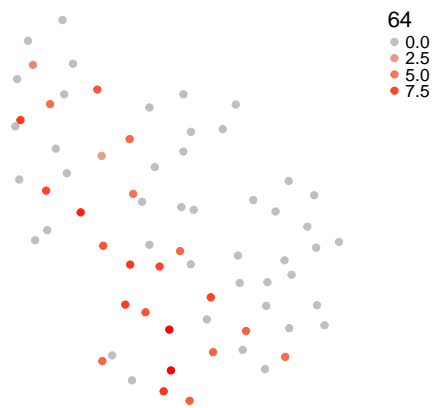
UMAP colored by CD83 expression



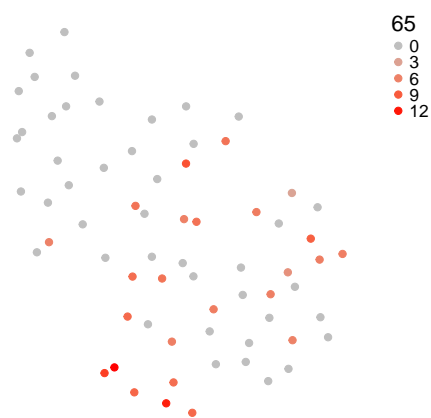
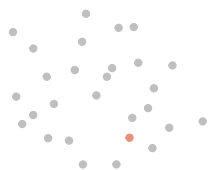
UMAP colored by CD74 expression



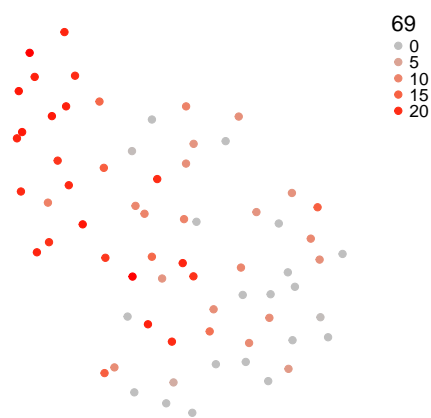
UMAP colored by LY75 expression



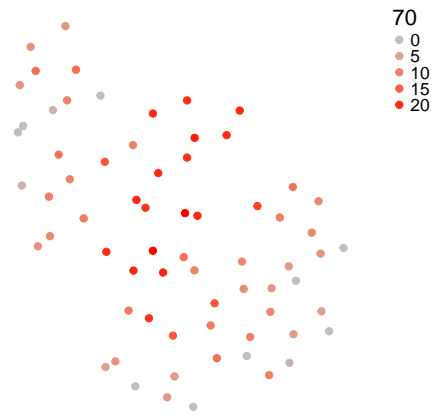
UMAP colored by PDGFB expression



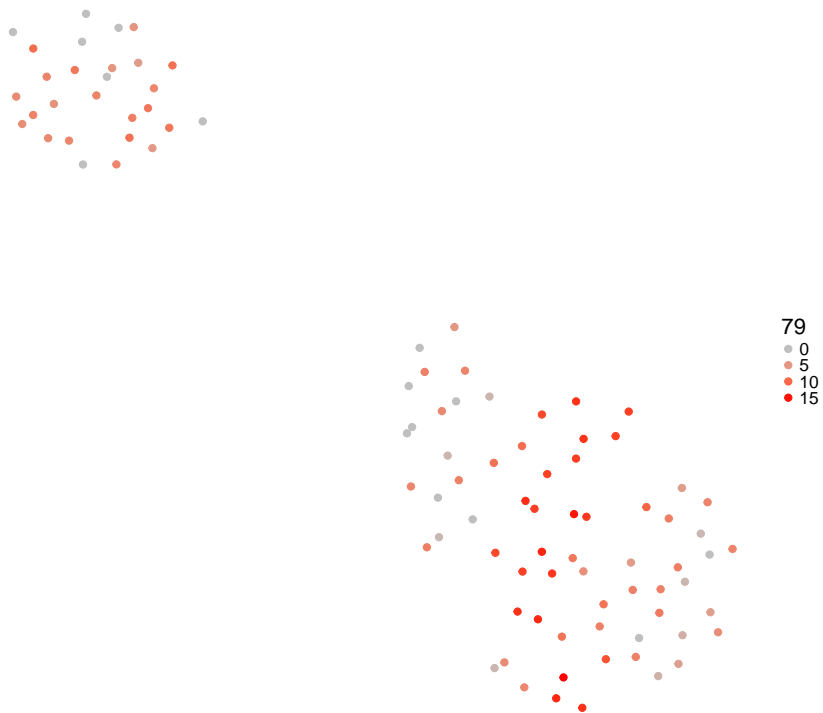
UMAP colored by GCG expression



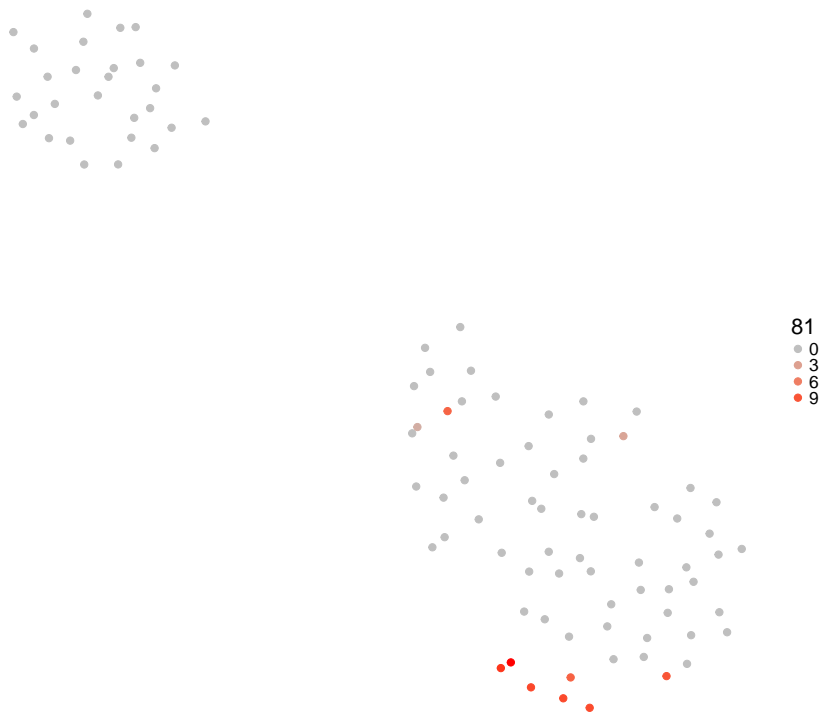
UMAP colored by SST expression



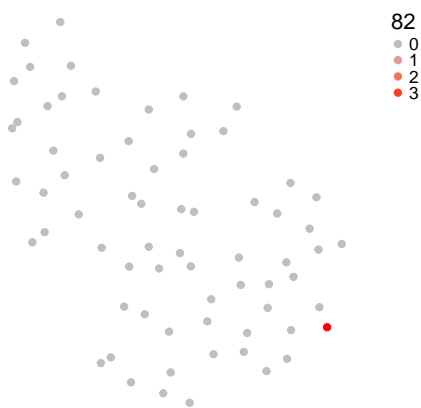
UMAP colored by CD24A expression



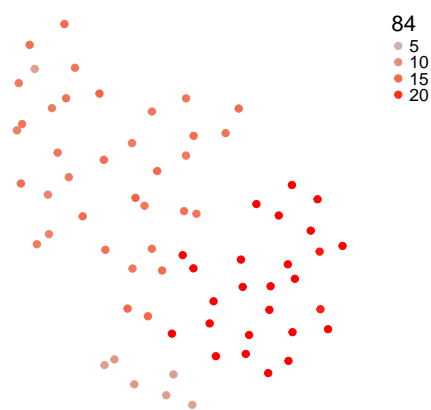
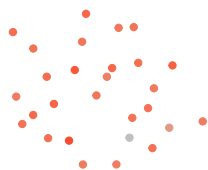
UMAP colored by TLR4 expression



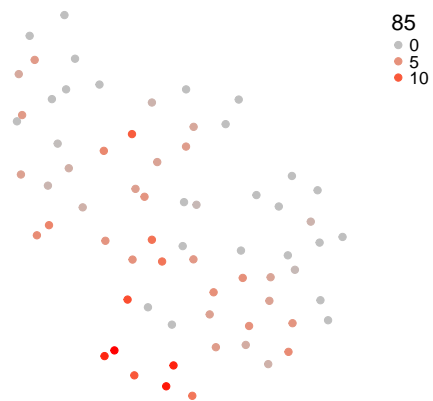
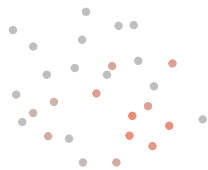
UMAP colored by COL11A1 expression



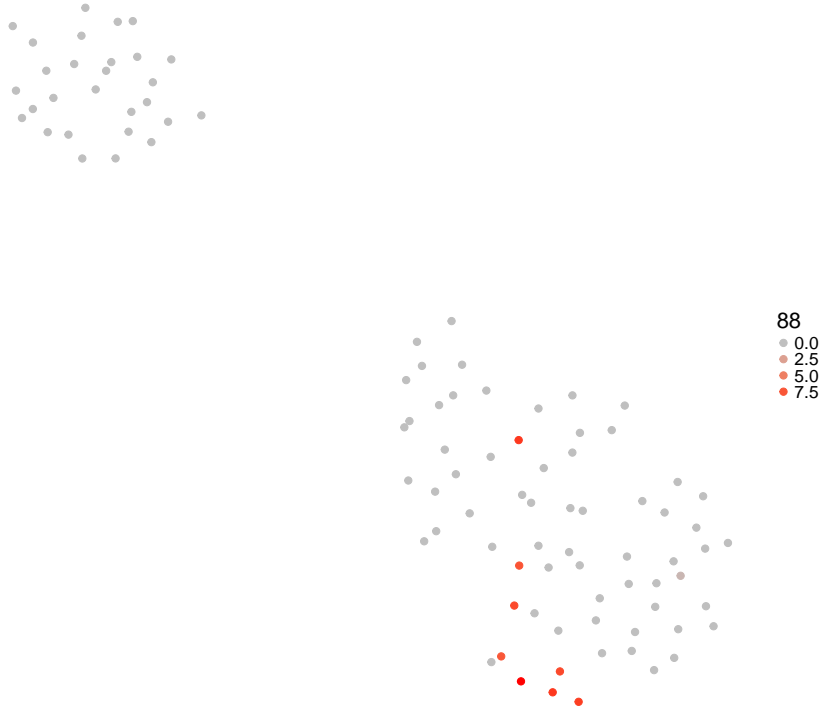
UMAP colored by INS2 expression



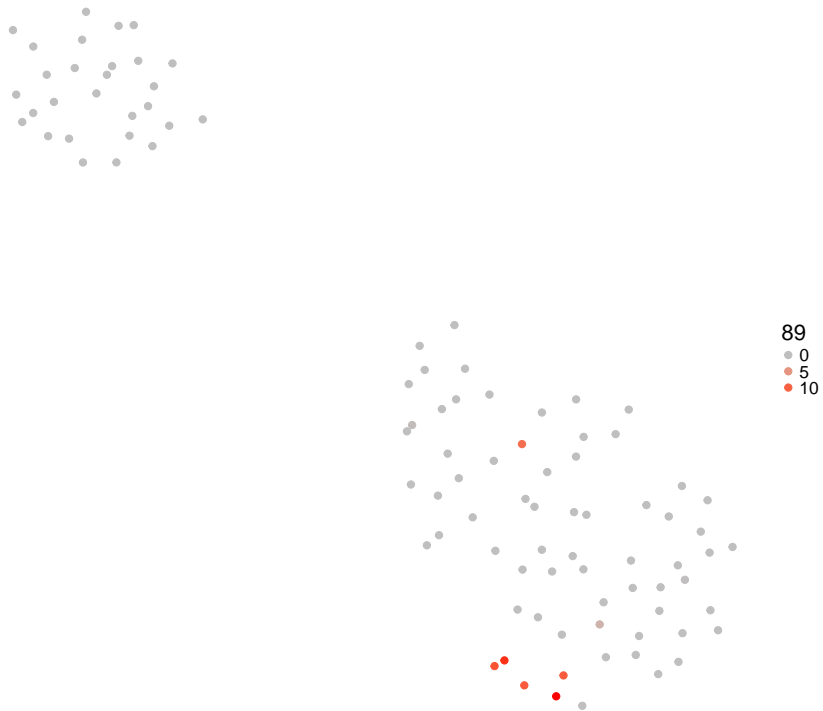
UMAP colored by ICAM1 expression



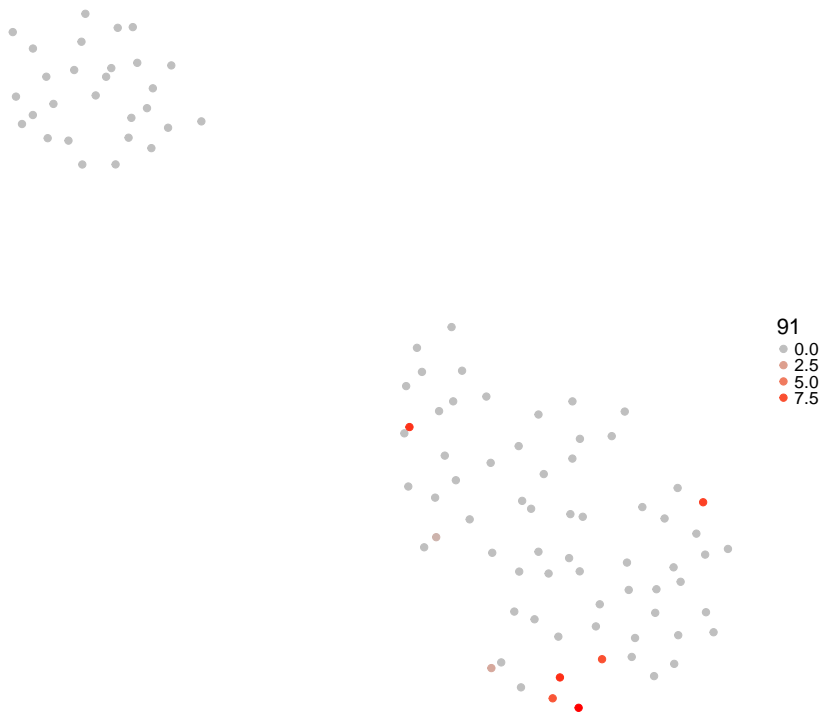
UMAP colored by SFRP1 expression



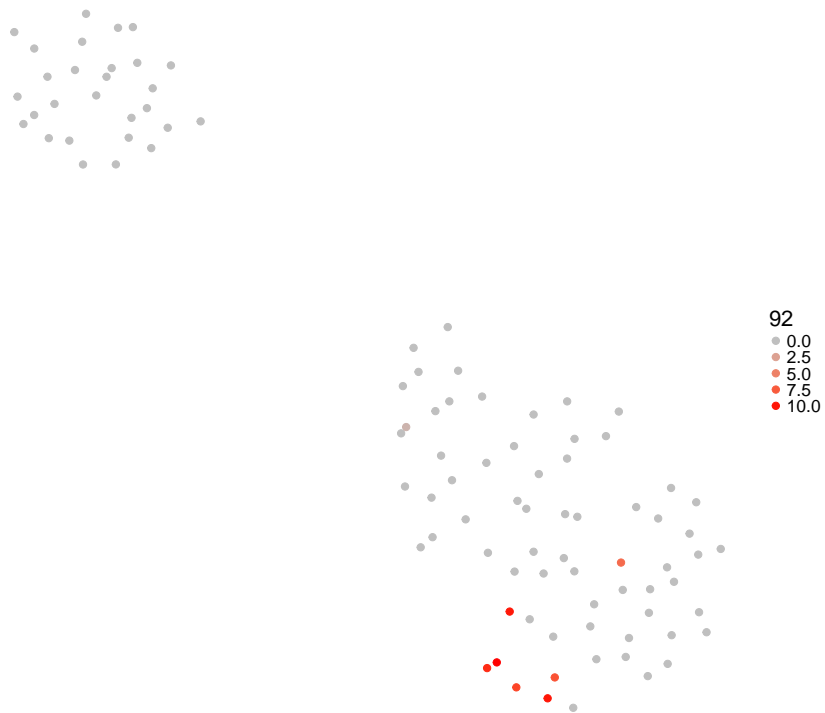
UMAP colored by VCAM1 expression



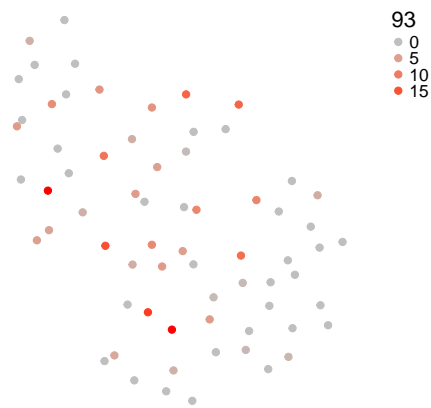
UMAP colored by ANGPT1 expression



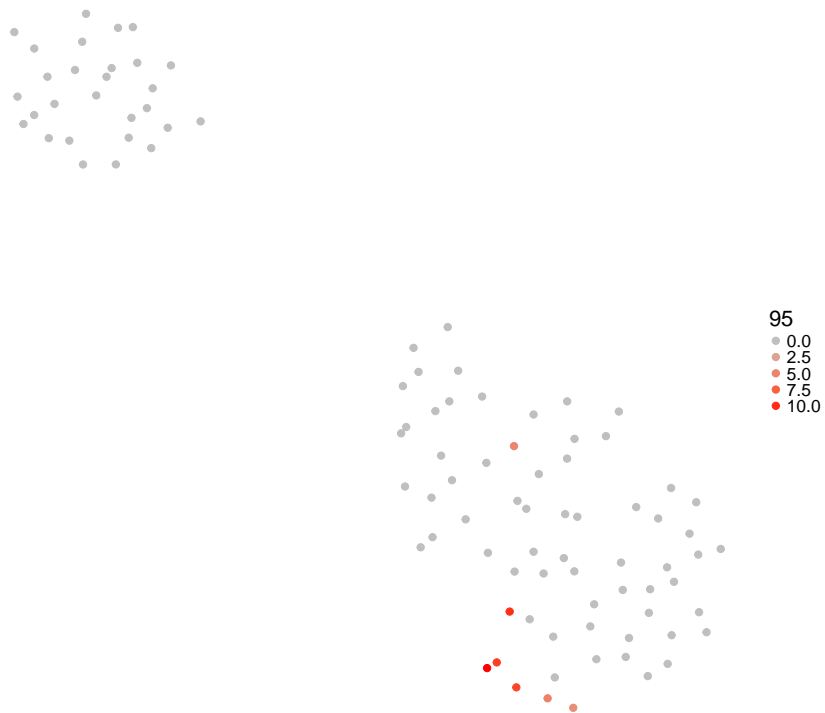
UMAP colored by ICOSL expression



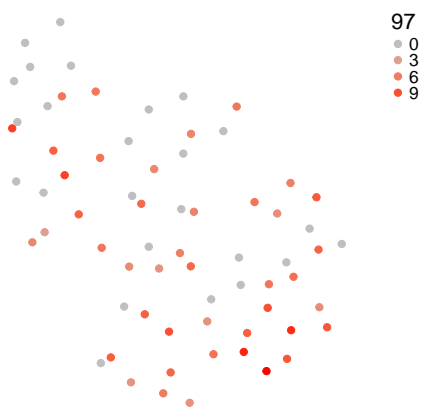
UMAP colored by PPY expression



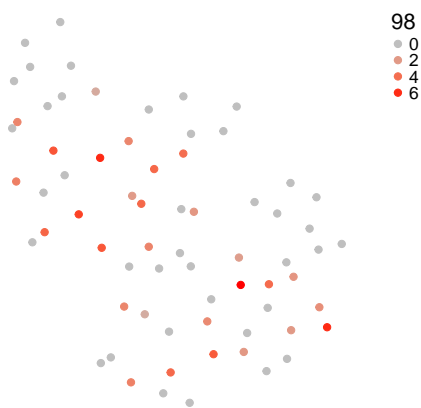
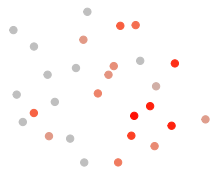
UMAP colored by TGFB1 expression



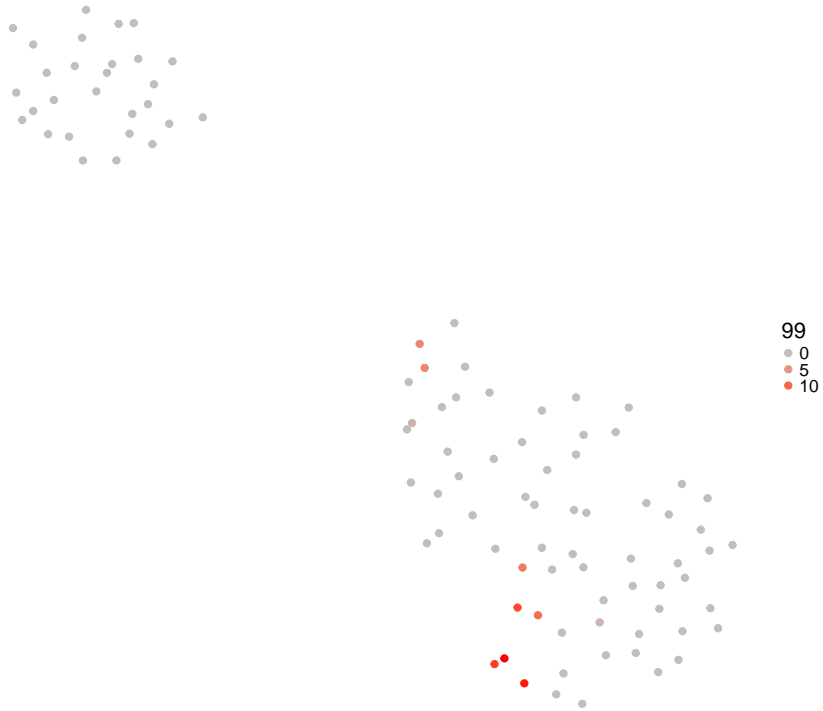
UMAP colored by IGF2 expression



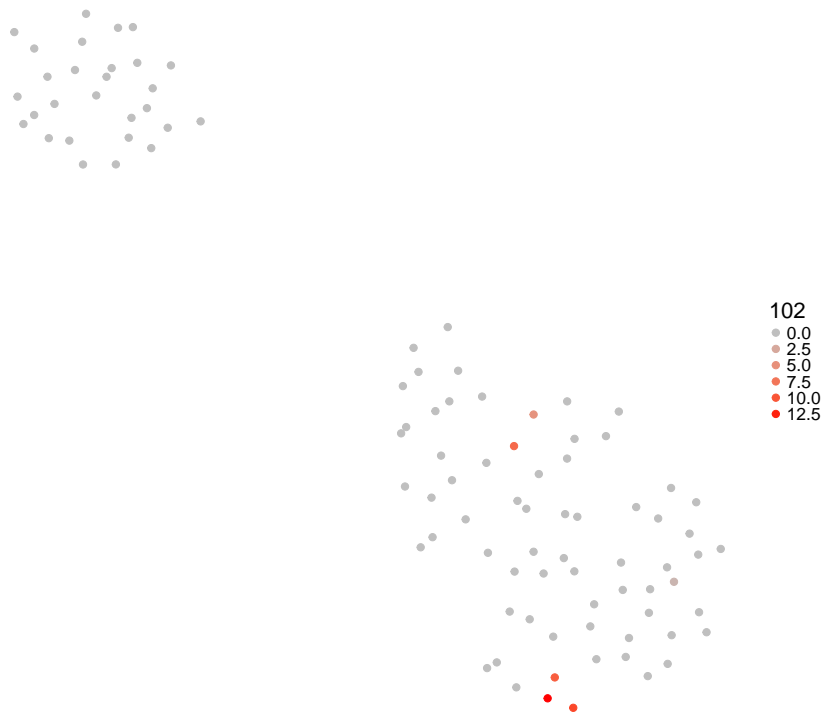
UMAP colored by COL1A1 expression



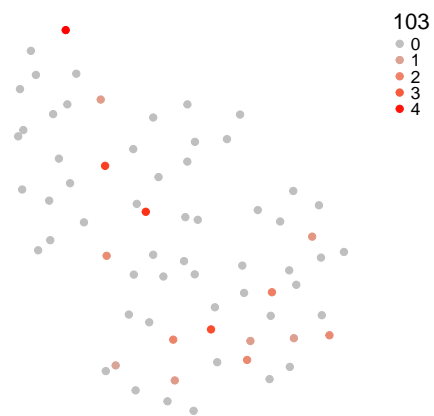
UMAP colored by CD36 expression



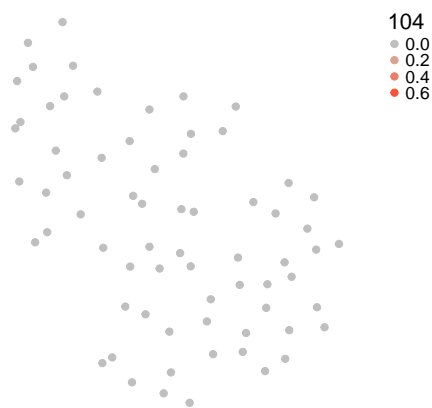
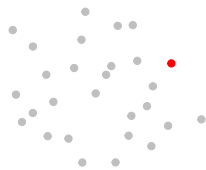
UMAP colored by PDPN expression



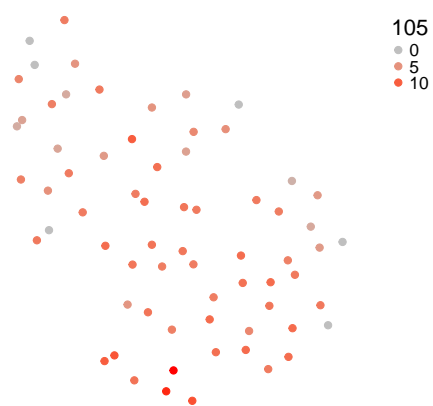
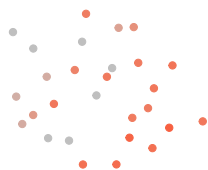
UMAP colored by MMP9 expression



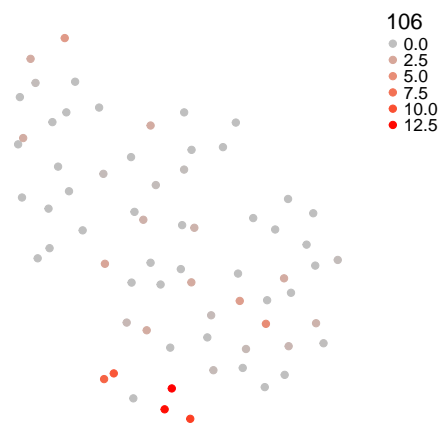
UMAP colored by MMP2 expression



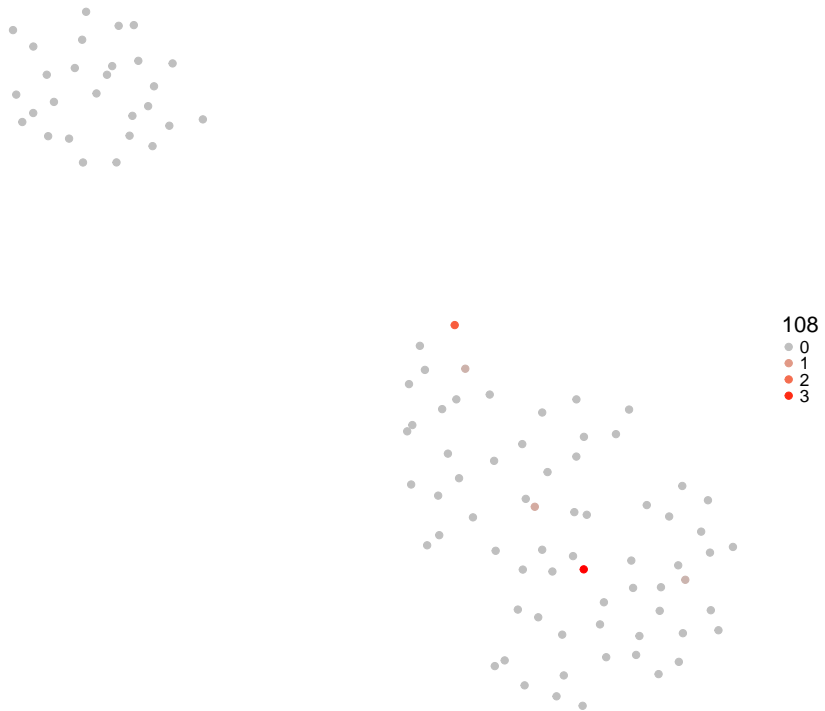
UMAP colored by CD14 expression



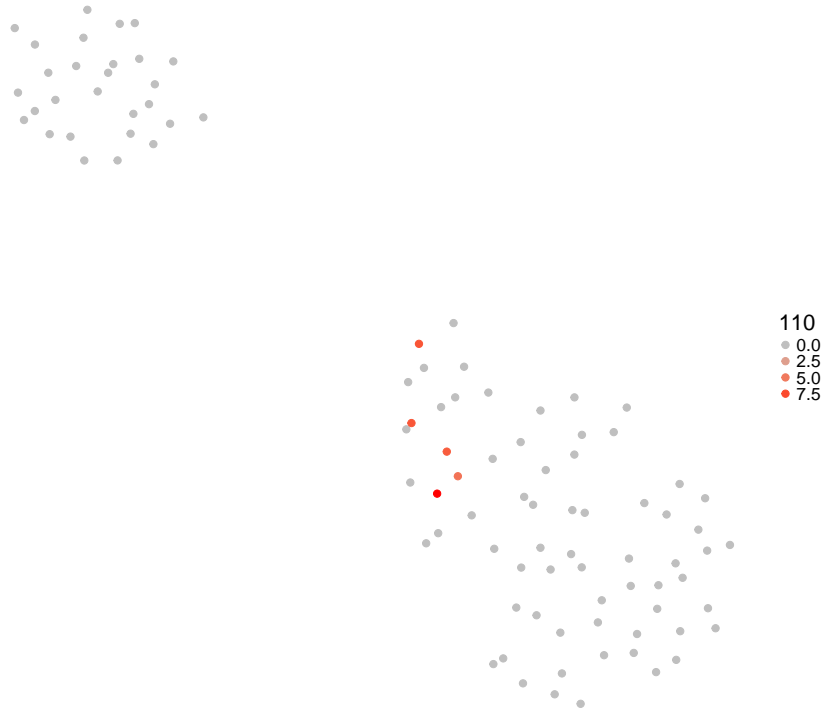
UMAP colored by IGF1 expression



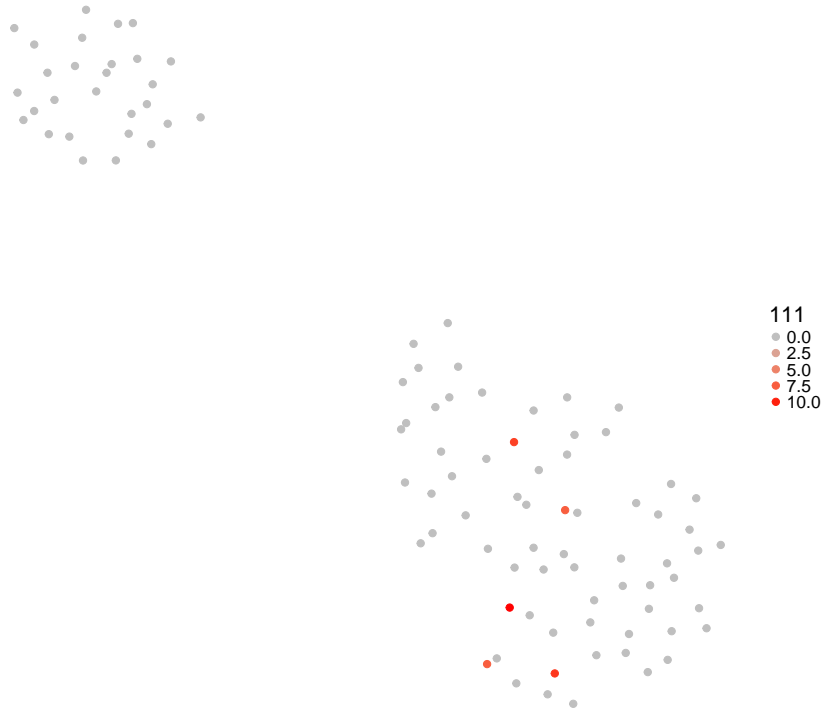
UMAP colored by BMP5 expression



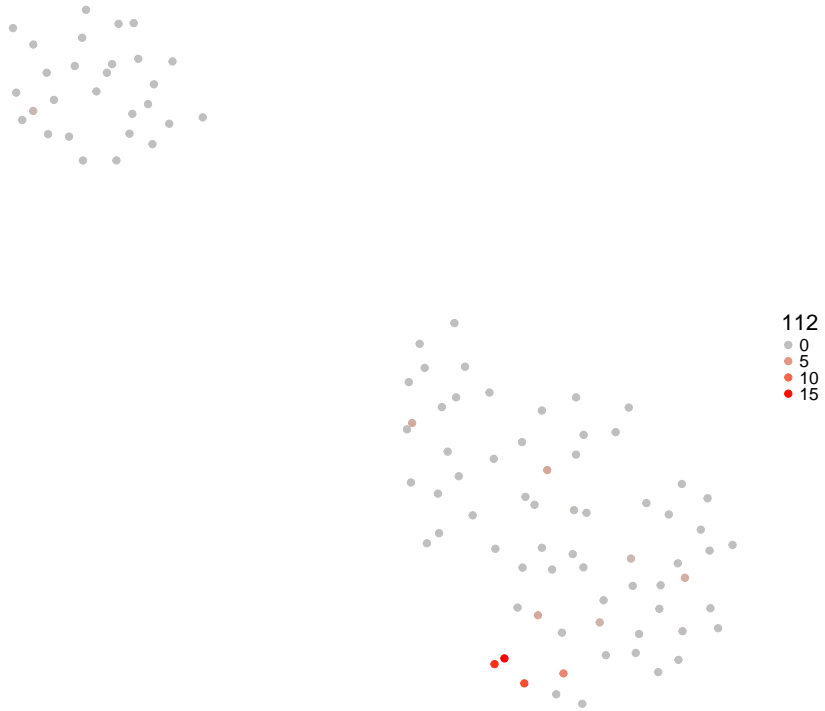
UMAP colored by COL1A2 expression



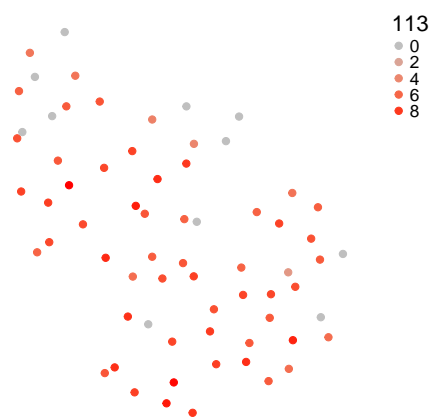
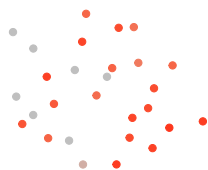
UMAP colored by FGR expression



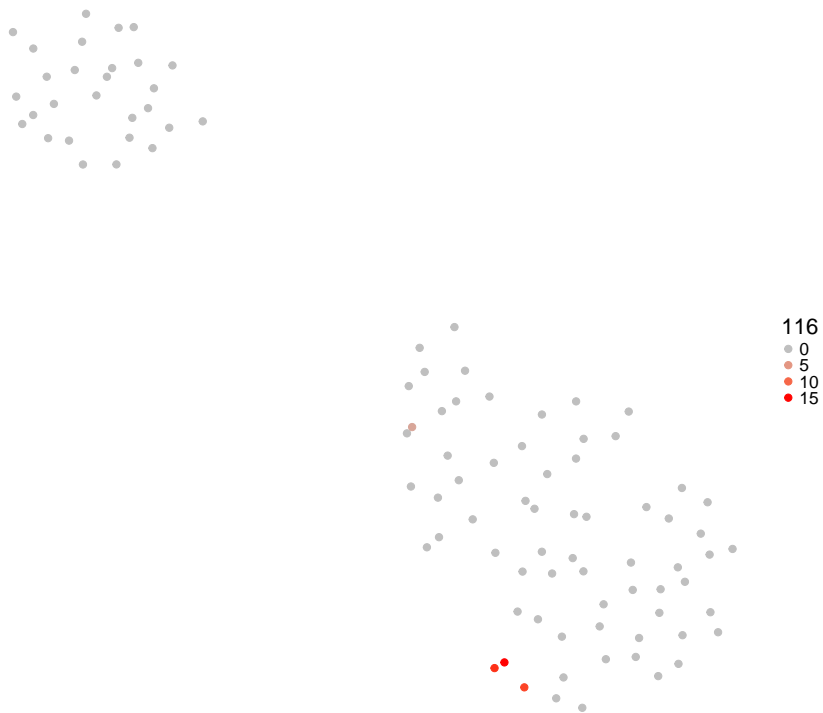
UMAP colored by LEPR expression



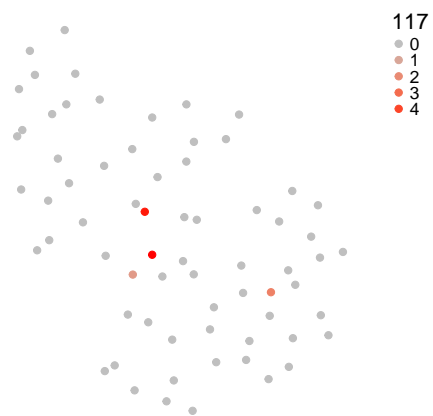
UMAP colored by GHRL expression



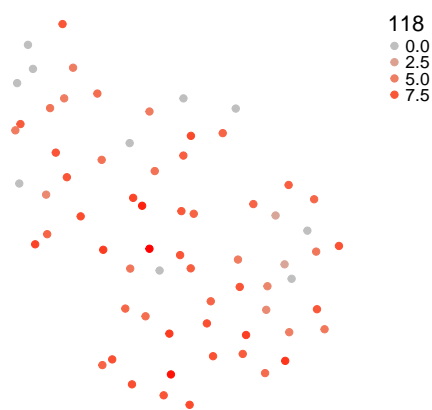
UMAP colored by TEK expression



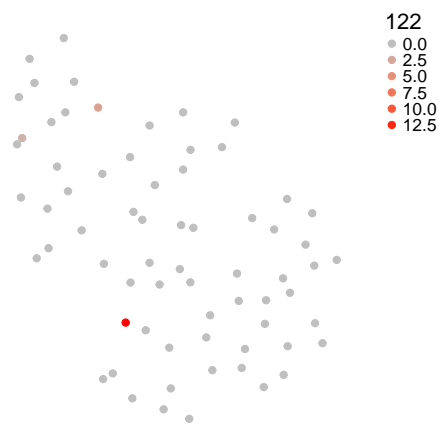
UMAP colored by TNFSF11 expression



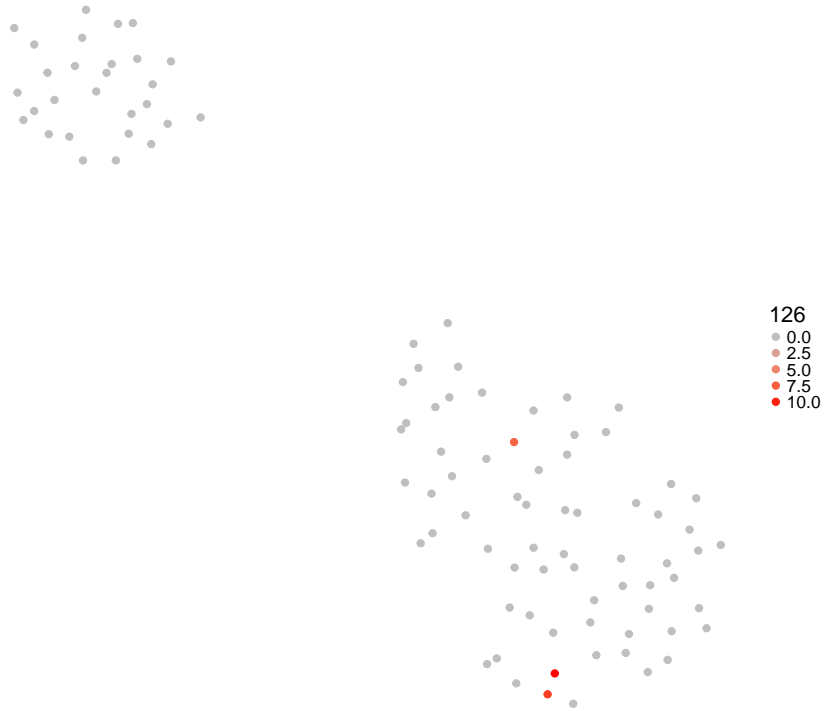
UMAP colored by PTGS2 expression



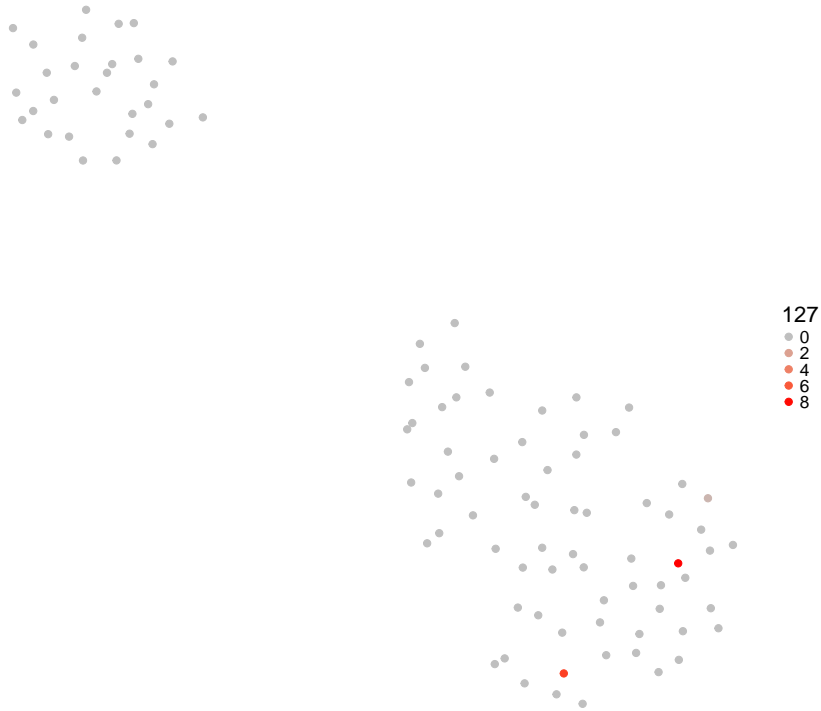
UMAP colored by CD86 expression



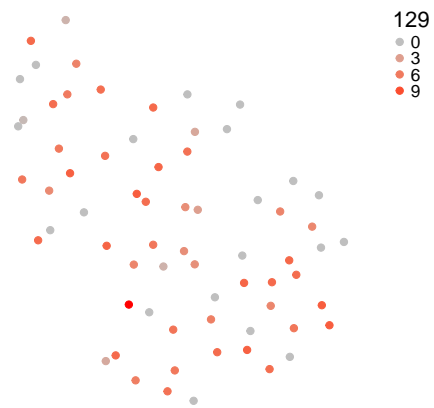
UMAP colored by IL34 expression



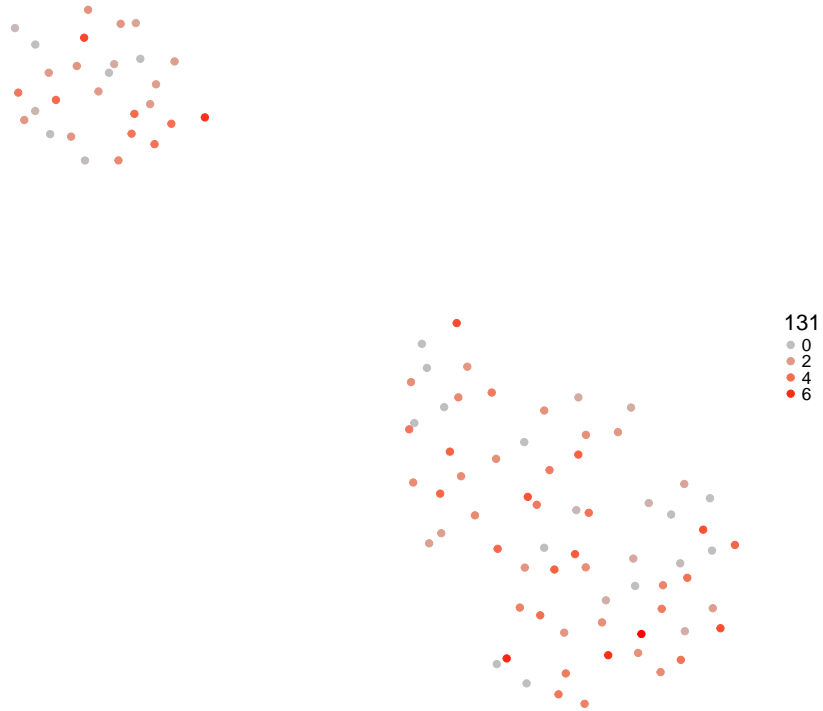
UMAP colored by LCK expression



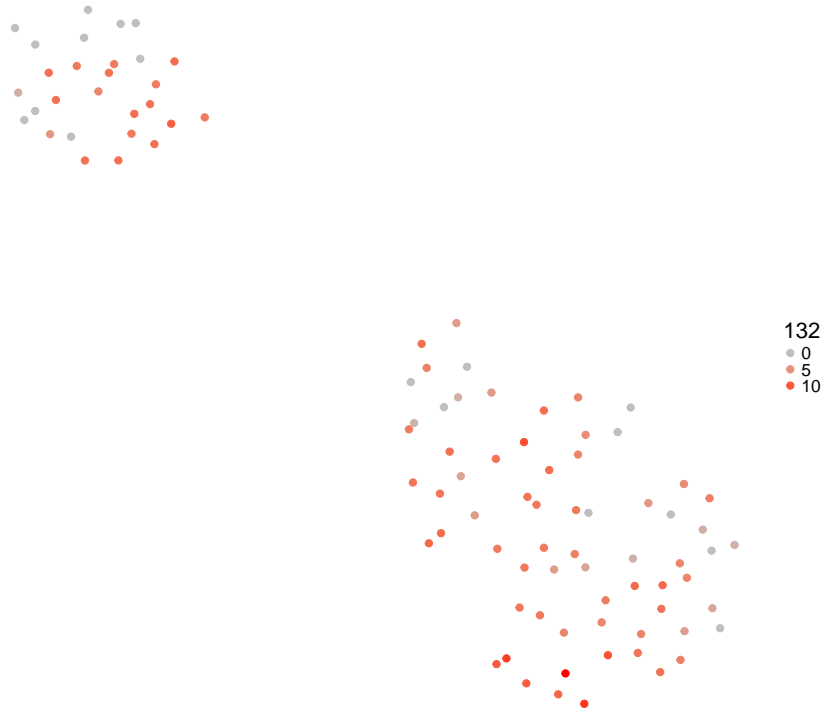
UMAP colored by ITGAX expression



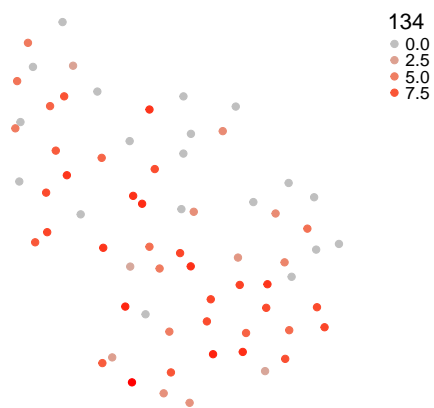
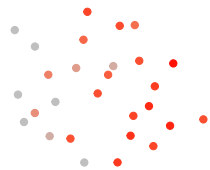
UMAP colored by CD8A expression



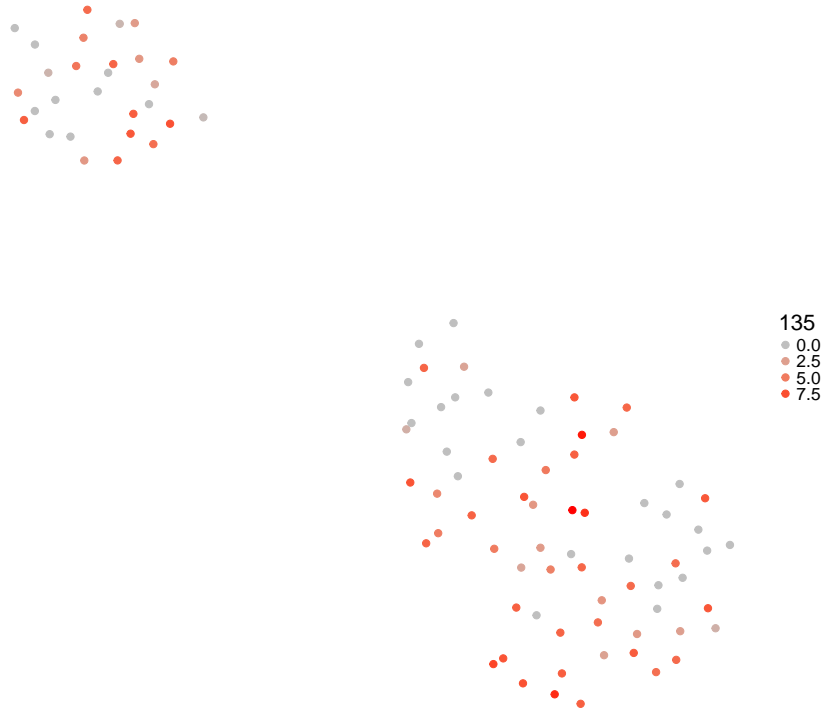
UMAP colored by FGFR3 expression



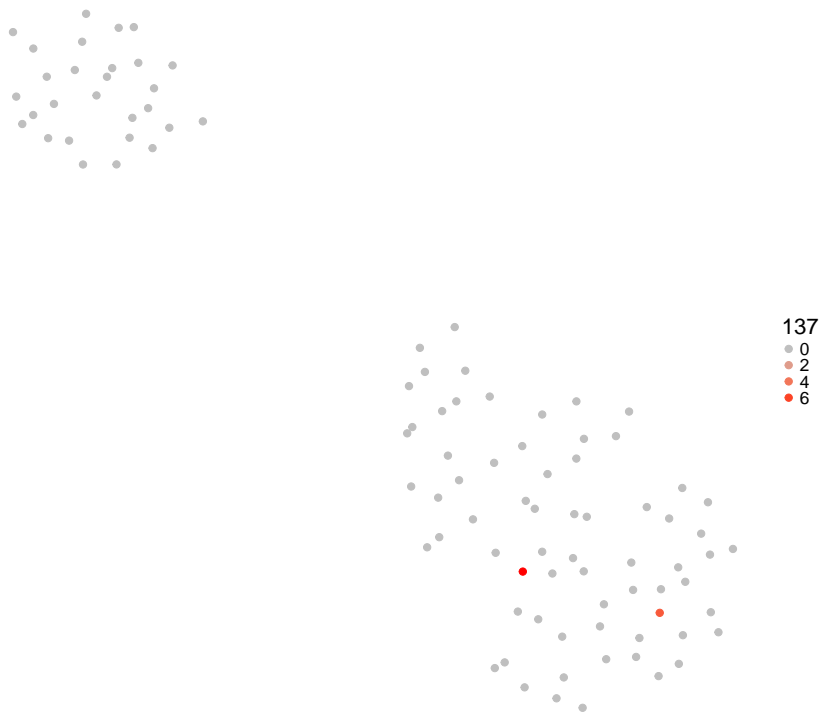
UMAP colored by DES expression



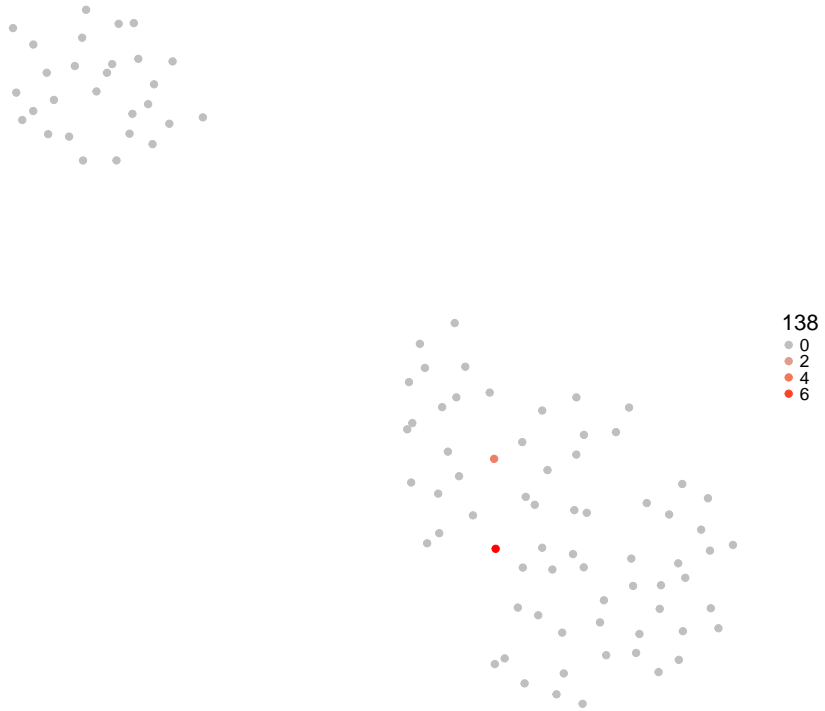
UMAP colored by TIMP1 expression



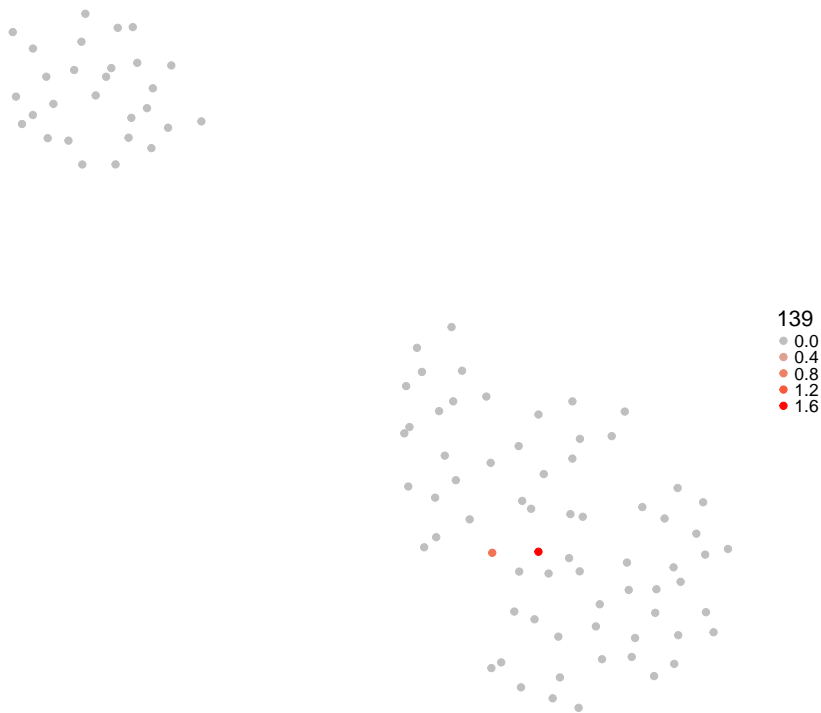
UMAP colored by FAP expression



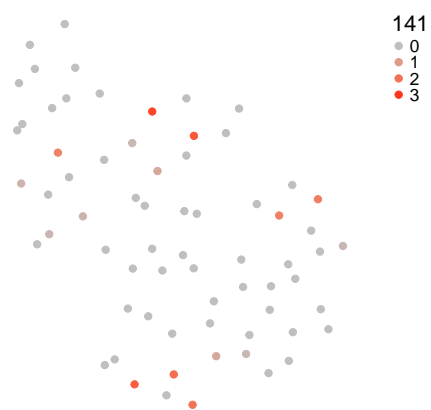
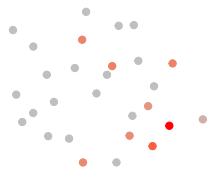
UMAP colored by IL-21 expression



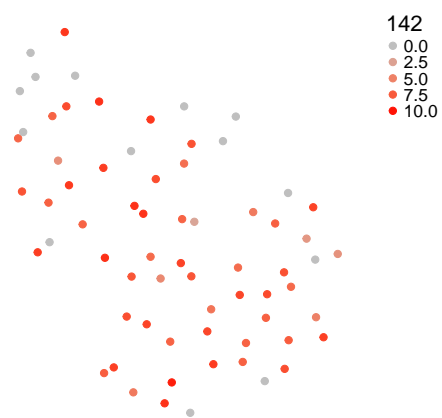
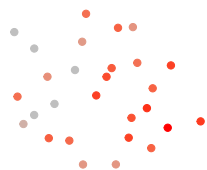
UMAP colored by MMP3 expression



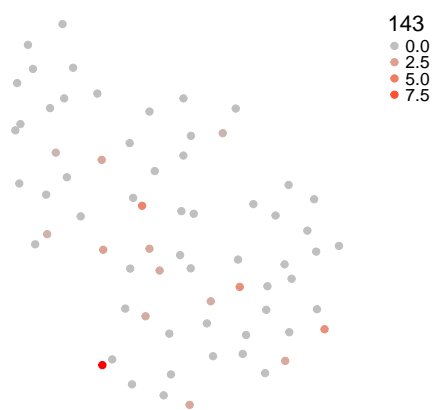
UMAP colored by GFAP expression



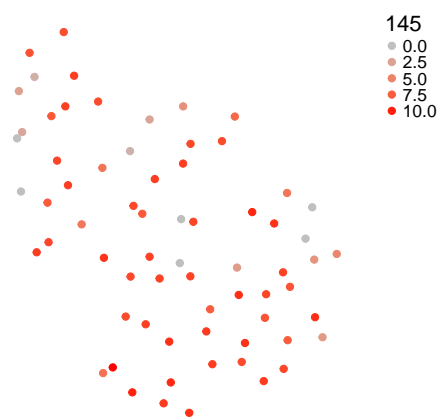
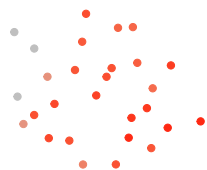
UMAP colored by TNC expression



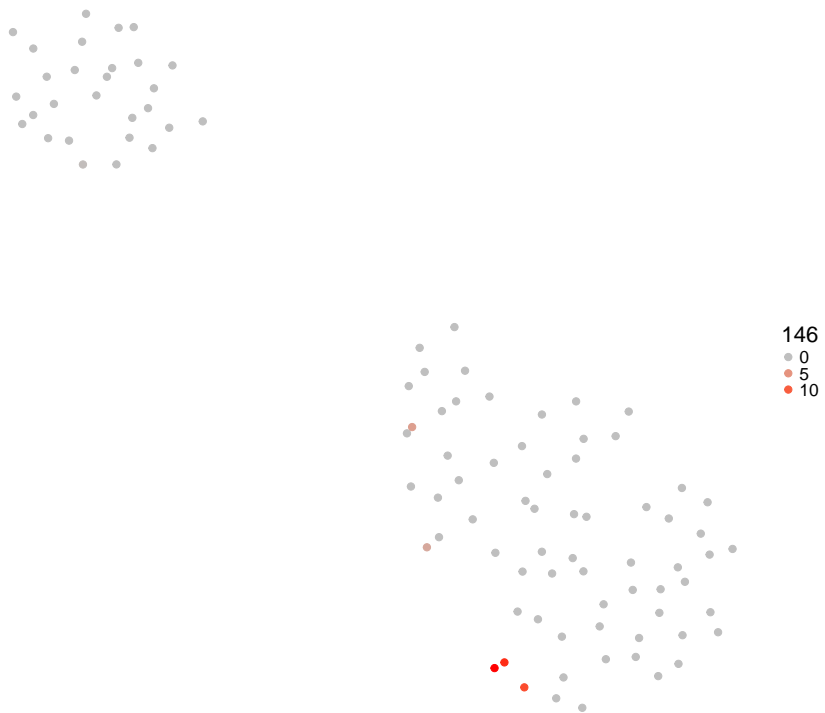
UMAP colored by SELE expression



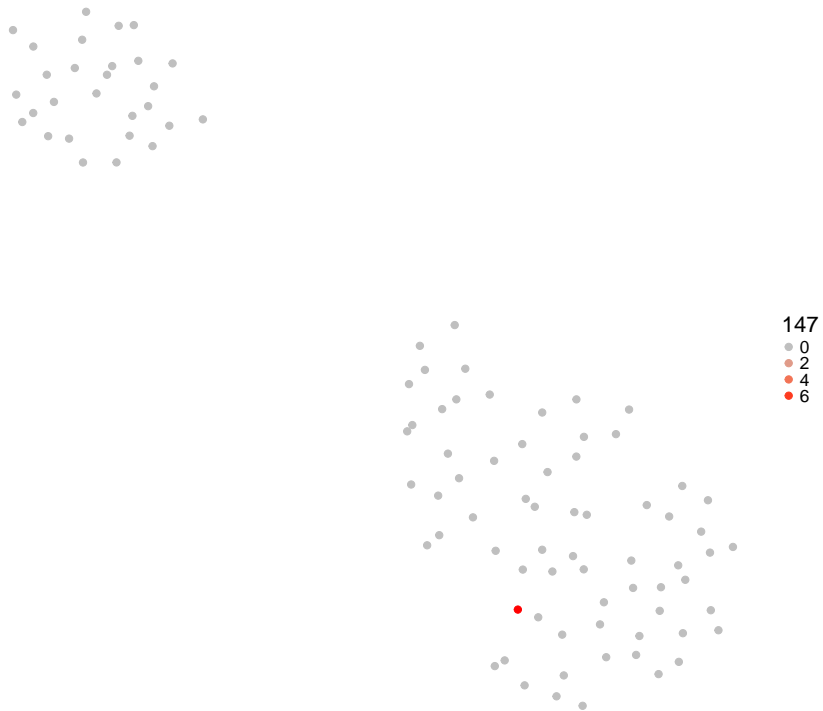
UMAP colored by CXCL13 expression



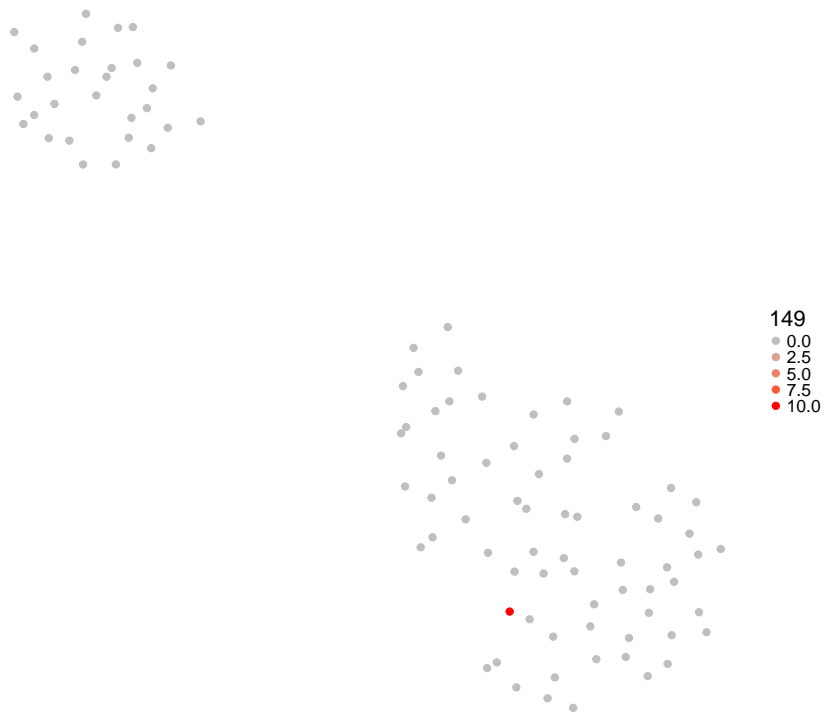
UMAP colored by KDR expression



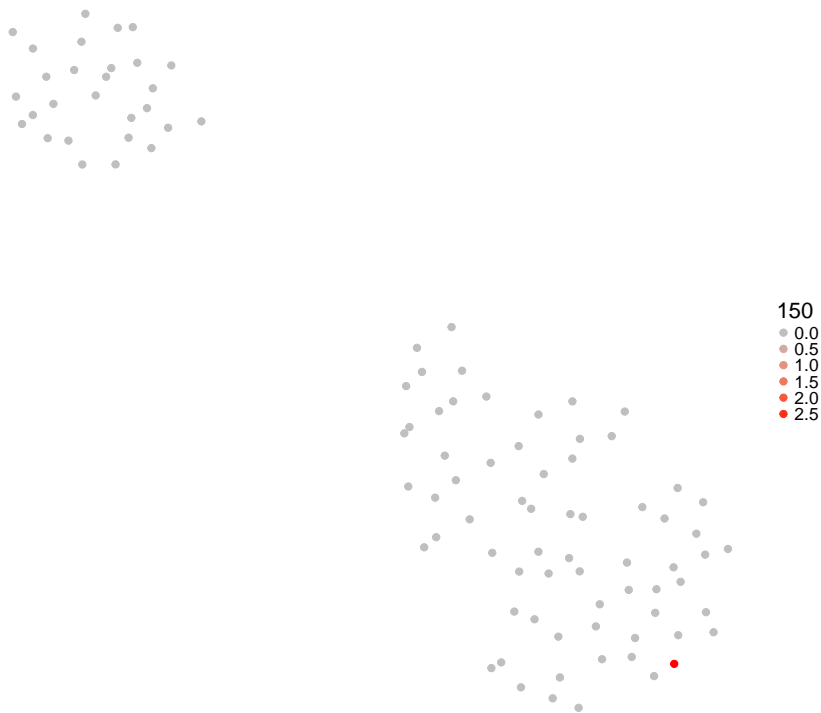
UMAP colored by ADGRE1 expression



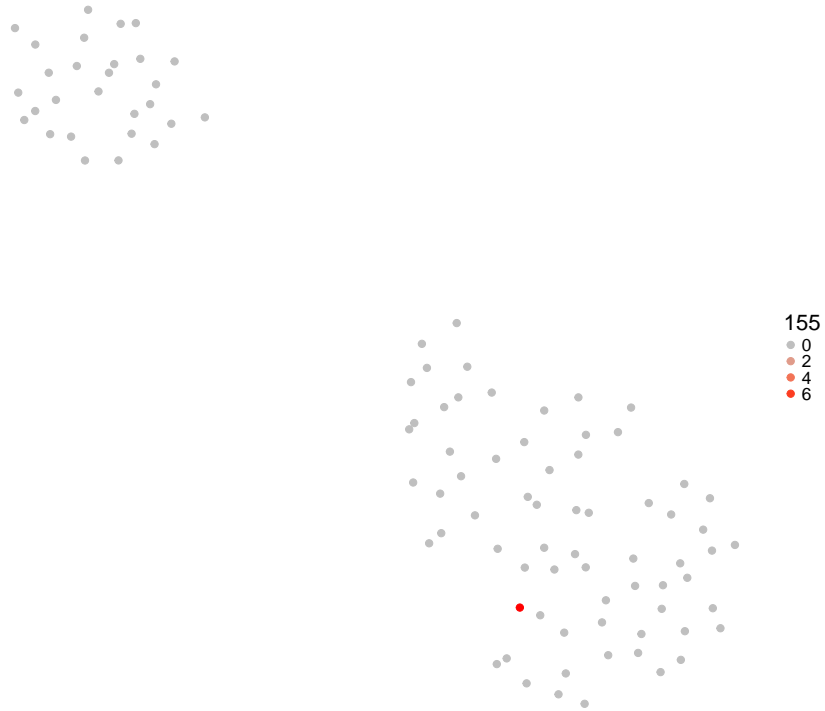
UMAP colored by CD80 expression



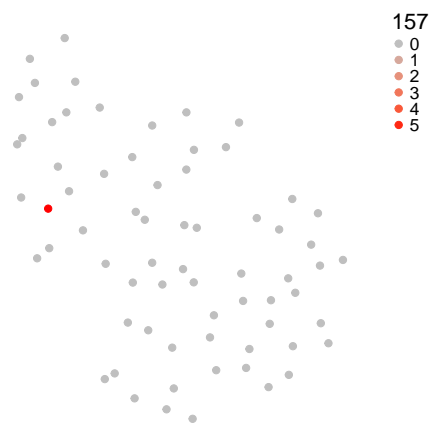
UMAP colored by CLEC7A expression



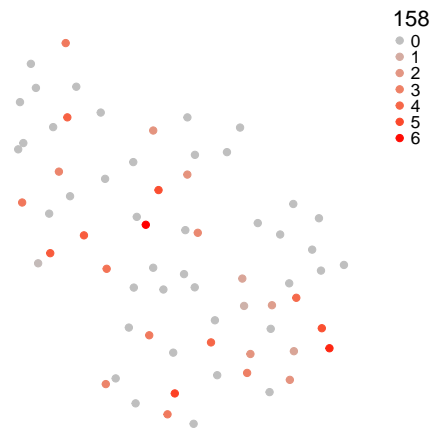
UMAP colored by NLRP3 expression



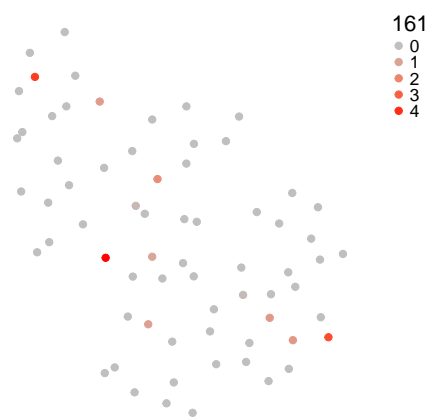
UMAP colored by ZAP70 expression



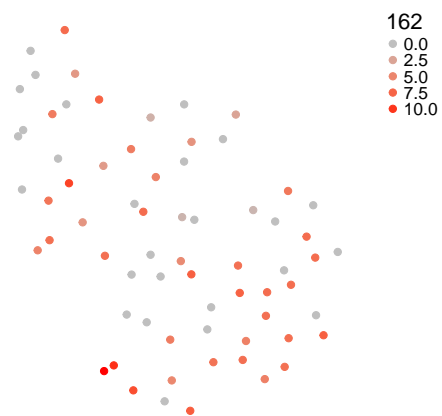
UMAP colored by IL1B expression



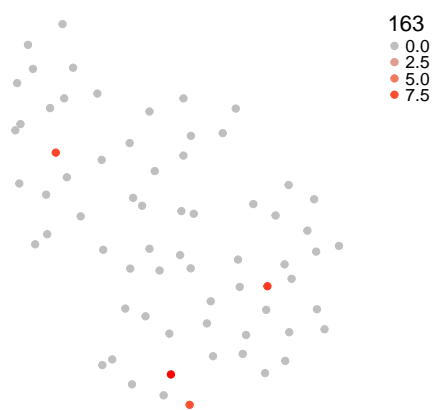
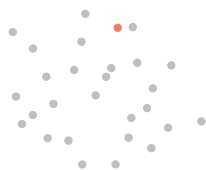
UMAP colored by PDGFRB expression



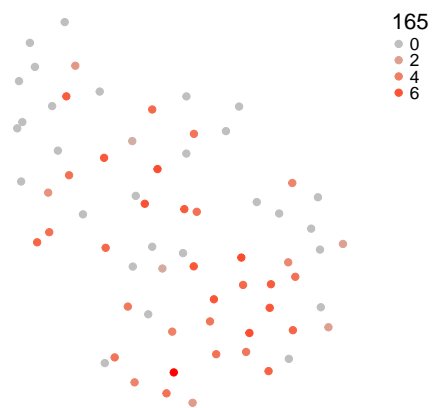
UMAP colored by GM13889 expression



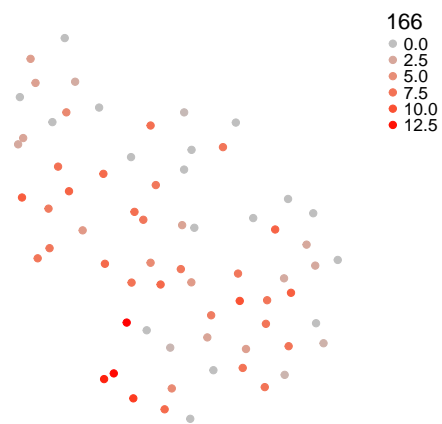
UMAP colored by BMP7 expression



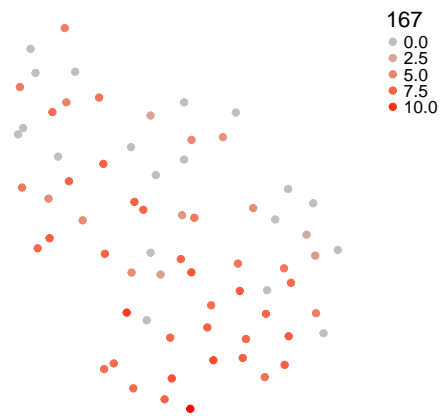
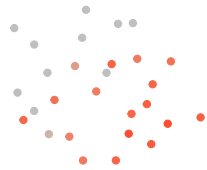
UMAP colored by TLR7 expression



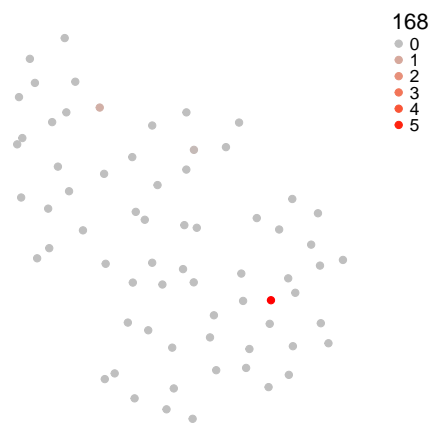
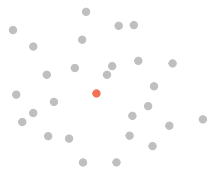
UMAP colored by CSF2RB expression



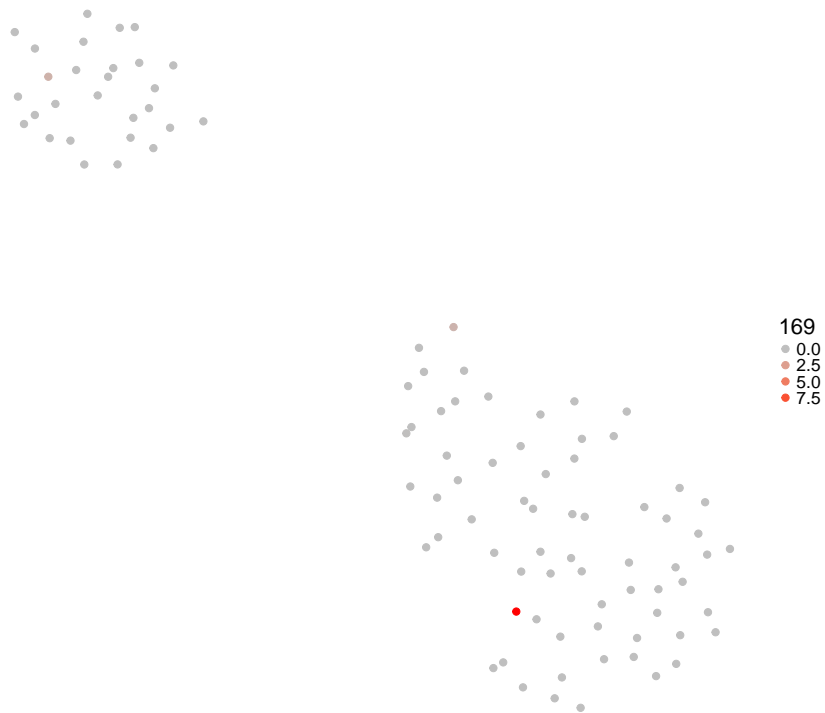
UMAP colored by CSF1R expression



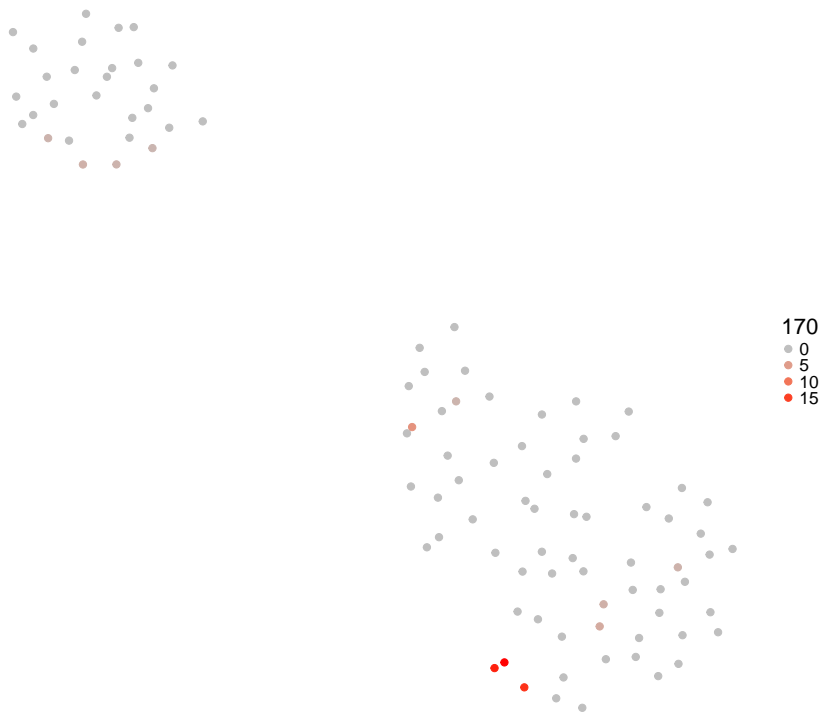
UMAP colored by IL1A expression



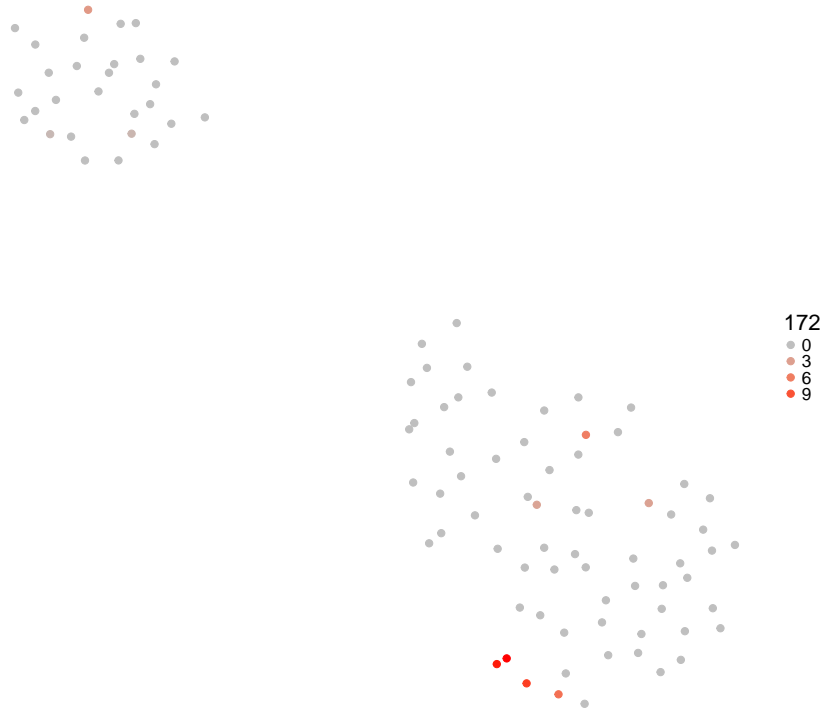
UMAP colored by TLR9 expression



UMAP colored by PECAM1 expression



UMAP colored by ICAM2 expression

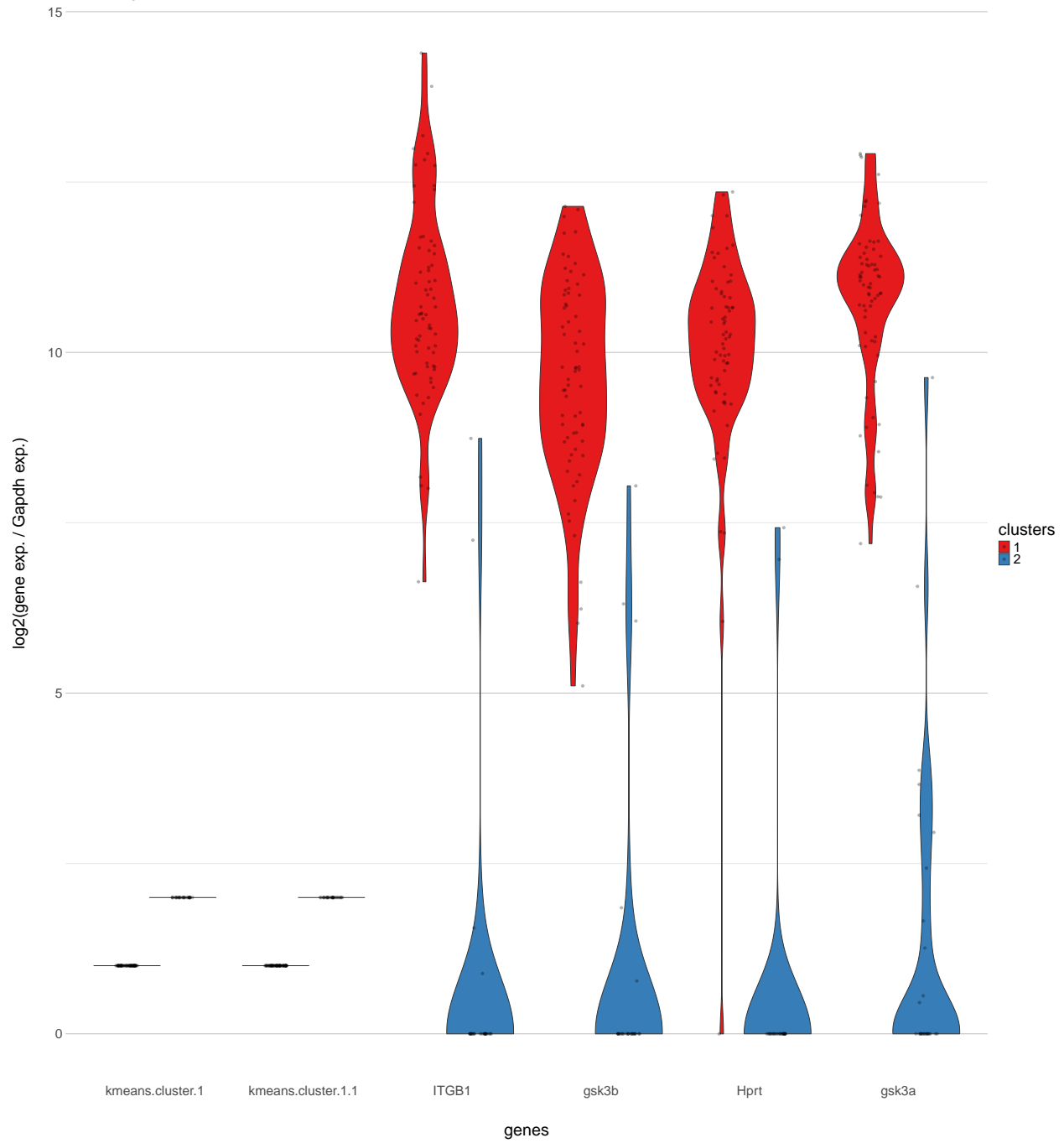


Differentially expressed genes between clusters :

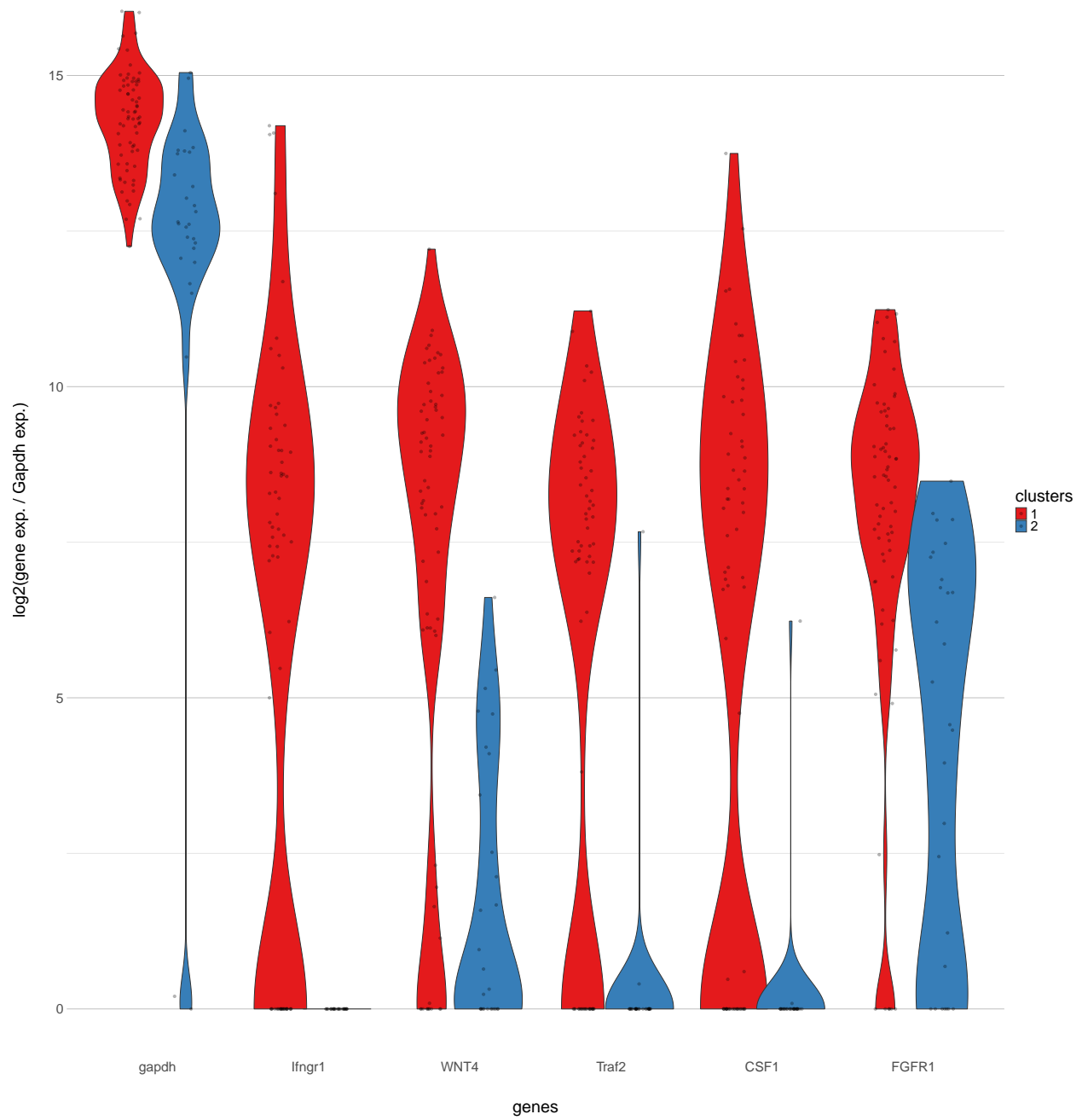
[1] kmeans.cluster.1: 1.523e-20	kmeans.cluster.1.1: 1.523e-20
[3] ITGB1: 7.283e-13	gsk3b: 7.283e-13
[5] Hprt: 7.283e-13	gsk3a: 7.283e-13
[7] pten: 7.283e-13	HIF1A: 1.048e-12
[9] Irf2: 1.381e-12	Stat3: 1.621e-12
[11] Ly6e: 1.897e-12	Jak1: 1.897e-12
[13] VEGFA: 1.549e-11	PTK2: 1.598e-10

[15] TIMP2: 2.933e-10	ACVR1: 5.337e-10
[17] Stat1: 6.361e-10	Pd1-1: 4.501e-09
[19] Irf1: 5.882e-09	VEGFB: 6.678e-09
[21] Jak2: 8.385e-09	Socs3: 1.651e-08
[23] nfkb1: 2.708e-08	PDGFA: 5.145e-08
[25] gapdh: 2.237e-07	Ifngr1: 2.237e-07
[27] WNT4: 3.755e-07	Traf2: 5.676e-07
[29] CSF1: 1.734e-06	FGFR1: 2.643e-06
[31] KLF5: 3.201e-06	tnfrsf1a: 6.057e-06
[33] CSF2RA: 2.092e-05	INS1: 2.303e-05
[35] ANPEP: 2.579e-05	NFATC1: 2.942e-05
[37] Fyn: 3.099e-05	IAPP: 0.0001086
[39] TLR3: 0.0001456	Bcl6: 0.0002035
[41] Stat5: 0.0002194	Cd44: 0.0003089
[43] Ifit1: 0.0003089	CD44: 0.0009111
[45] EGFR: 0.0009111	SPP1: 0.001506
[47] CD83: 0.002486	il4ra: 0.002486
[49] CD74: 0.002685	Nur77: 0.004627
[51] Oas1b: 0.004627	LY75: 0.005312
[53] PDGFB: 0.005831	Tnfaip3: 0.008453
[55] Map2k6: 0.01145	Irf7: 0.01214
[57] GCG: 0.01416	SST: 0.01758
[59] tnfrsf1b: 0.04009	icam1: 0.0435
[61] cd40: 0.04662	Oas2: 0.04755

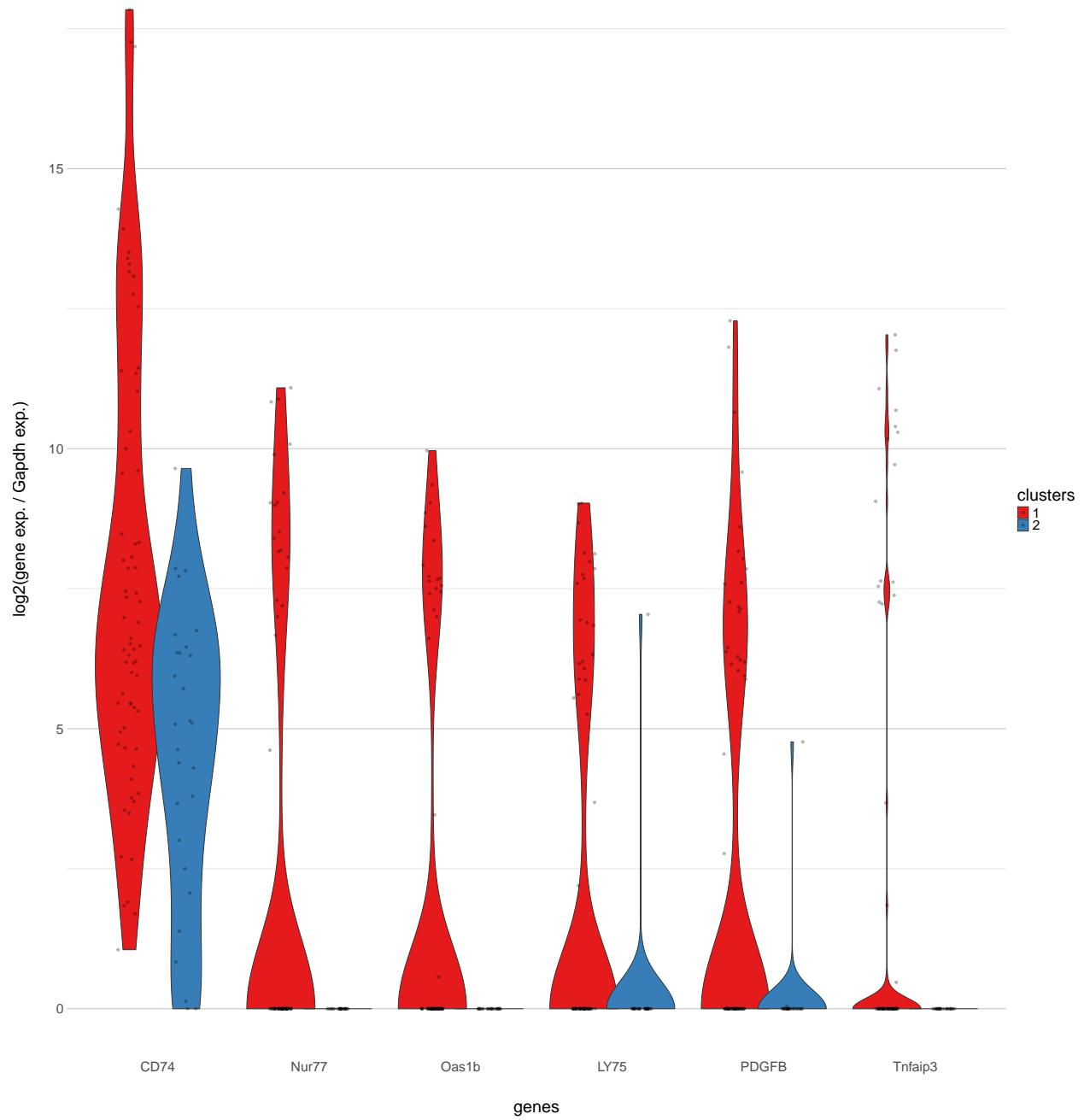
most significant expression differences between clusters (plot #1)

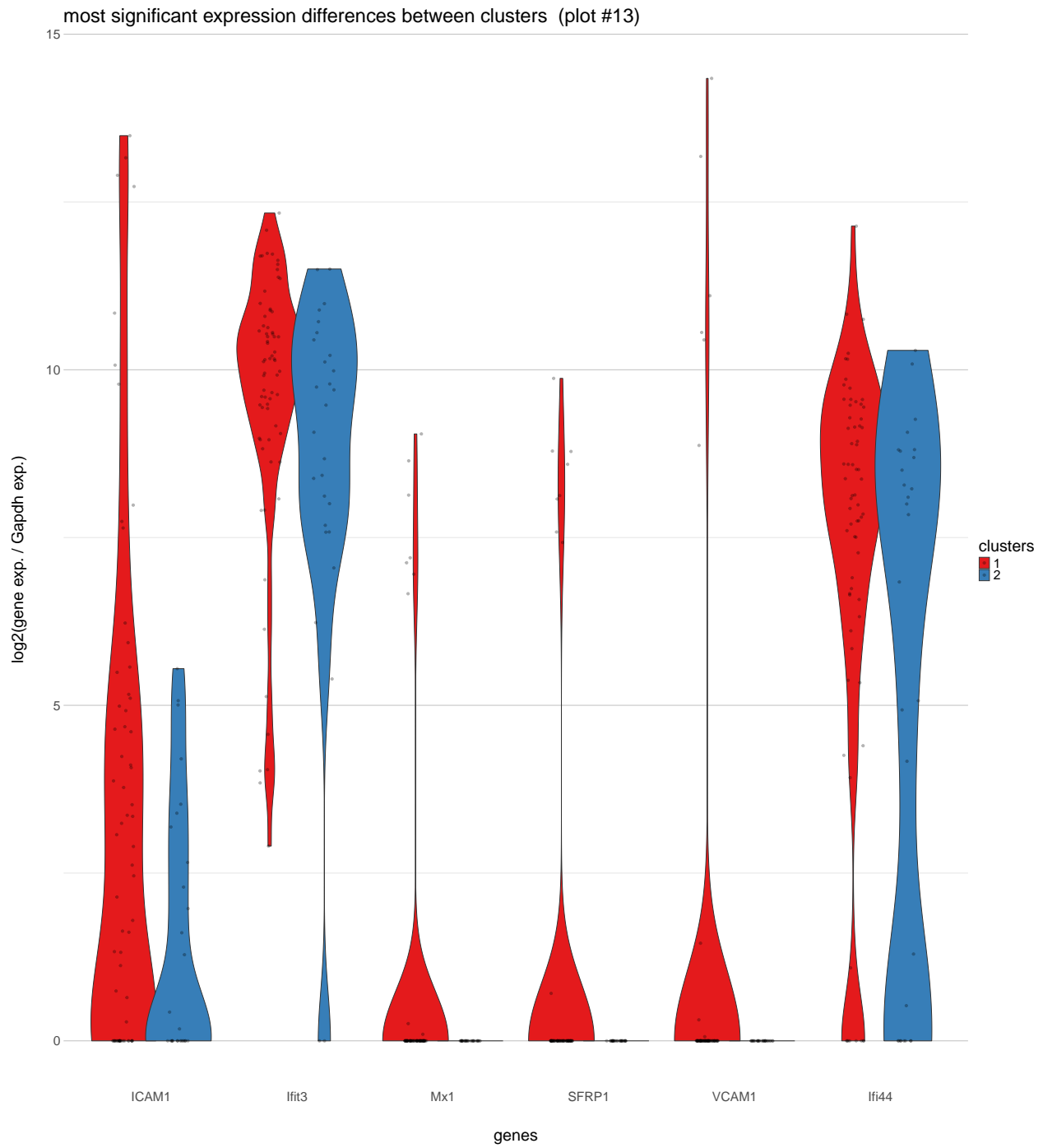


most significant expression differences between clusters (plot #5)

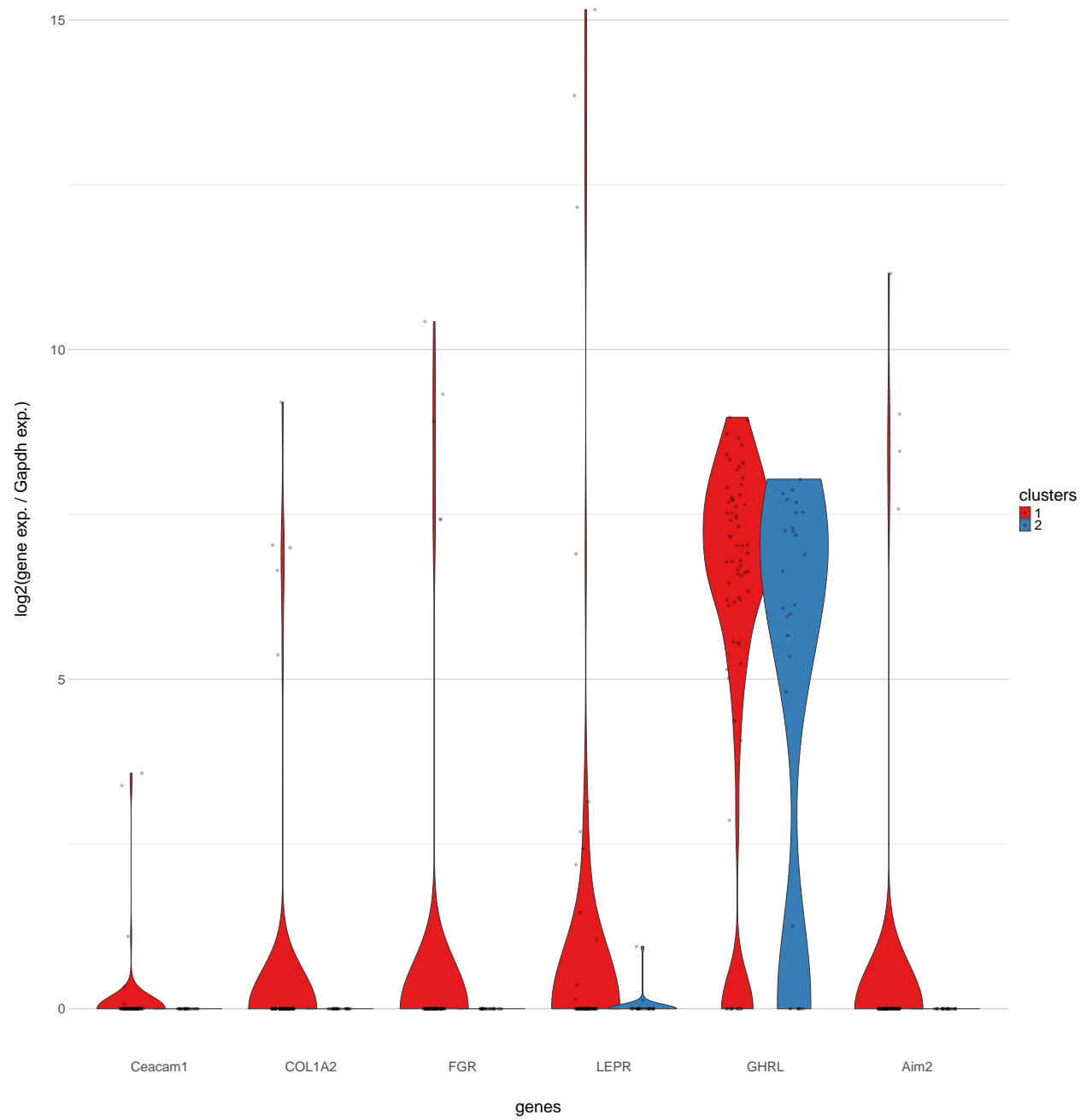


most significant expression differences between clusters (plot #9)





most significant expression differences between clusters (plot #17)



most significant expression differences between clusters (plot #21)

