

Test

```
[1] "FOXP3" "GATA3" "IL7R"
[1] "The data files listed below match the conditions in the 'dataloader'function:"
[1] "FR_RNA_T1D_HU_20250617_P1_1363029026.csv"
[2] "FR_RNA_T1D_HU_20250617_P1_1363029027.csv"
[3] "FR_RNA_T1D_HU_20250617_P2_1363029029.csv"
[4] "FR_RNA_T1D_HU_20250617_P2_1363029093.csv"
[5] "FR_RNA_T1D_HU_20250701_P1_1363029123.csv"
[6] "FR_RNA_T1D_HU_20250701_P1_1363029129.csv"
[7] "FR_RNA_T1D_HU_20250730_P1_1363029126.csv"
[8] "FR_RNA_T1D_HU_20250730_P1_1363029127.csv"
[9] "FR_RNA_T1D_HU_20250822_P1_1363029083.csv"
[10] "FR_RNA_T1D_HU_20250822_P1_1363029125.csv"
[11] "FR_RNA_T1D_HU_20250822_P2_1363029090.csv"
[12] "FR_RNA_T1D_HU_20250822_P2_1363029128.csv"
[13] "FR_RNA_T1D_HU_20250822_P3_1363029076.csv"
[14] "FR_RNA_T1D_HU_20250822_P3_1363029085.csv"
[15] "FR_RNA_T1D_HU_20251001_P1_1363029032.csv"
[16] "FR_RNA_T1D_HU_20251001_P1_1363029087.csv"
[17] "FR_RNA_T1D_HU_20251001_P2_1363029011.csv"
[18] "FR_RNA_T1D_HU_20251001_P2_1363029145.csv"
[1] TRUE
[1] FALSE
[1] TRUE
[1] FALSE
[1] "User selected Panel 1 and 3"
[1] "These are the plates that were assessed by Panels 1 and 3. They will be loaded into R for analysis"
[1] "FR_RNA_T1D_HU_20250617_P1" "FR_RNA_T1D_HU_20250617_P2"
[3] "FR_RNA_T1D_HU_20250701_P1" "FR_RNA_T1D_HU_20250730_P1"
[5] "FR_RNA_T1D_HU_20250822_P1" "FR_RNA_T1D_HU_20250822_P2"
[7] "FR_RNA_T1D_HU_20250822_P3" "FR_RNA_T1D_HU_20251001_P1"
[9] "FR_RNA_T1D_HU_20251001_P2"
[1] "The panel's pulled for analysis are: "
[1] "Panel1" "Panel3"
[1] "Number of rows prior to duplicate genes, per cell, being combined: 145152"
[1] "Rows that contain data for FOXP3:"
[1] "Number of rows AFTER duplicate genes have been removed: 144396"
[1] "Rows that contain data for GATA3:"
[1] "Number of rows AFTER duplicate genes have been removed: 143640"
[1] "Rows that contain data for IL7R:"
[1] "Number of rows AFTER duplicate genes have been removed: 142884"
[1] "Predicted number of rows after removing duplicate genes, per cell: 142884"
[1] "The predicted number of rows DOES match the number of rows, post duplicate gene removal"
[1] "Are blood samples in this table? TRUE"
```

No expression detected in 0/756 cells

```

[1] "Column Names are: "
[1] "cellSource" "probe"      "age"       "patient"    "SPA"
[6] "SPAM"       "SPAMcell"   "cellType"   "AIM2"       "AKT1"
[11] "AKT1S1"     "ARPC2"      "B2M"       "BCL2"       "BCL6"
[16] "BIRC5"      "BTG1"       "C3"        "C5"        "CALM1"
[21] "CBLB"       "CCL5"       "CCR1"      "CCR2"      "CCR3"
[26] "CCR4"       "CCR5"       "CCR6"      "CCR7"      "CD200"
[31] "CD200R1"    "CD27"       "CD274"     "CD28"      "CD3E"
[36] "CD4"        "CD40"       "CD40LG"    "CD44"      "CD48"
[41] "CD52"       "CD53"       "CD69"      "CD8A"      "CDC42"
[46] "CRIP1"      "CTLA4"      "CXCL10"    "CXCL9"     "CXCR3"
[51] "CXCR4"      "CXCR6"      "DNM1L"     "DPP4"      "EVL"
[56] "FAIM2"      "FAS"        "FOS"       "FOXO1"     "FOXP3"
[61] "FYN"        "GAPDH"      "GATA3"     "GRB2"      "GSK3A"
[66] "GSK3B"      "HAVCR2"    "HIF1A"     "HLA-DQB1"  "HLA-DRA"
[71] "HRAS"       "ICAM1"      "ICOS"      "ID2"       "IFI44"
[76] "IFI44L"     "IFIT1"      "IFIT3"     "IFNAR1"    "IFNAR2"
[81] "IFNG"       "IFNGR1"    "IKZF2"     "IL10"      "IL12RB1"
[86] "IL17A"       "IL2"        "IL21"      "IL25"      "IL2RA"
[91] "IL3"        "IL4"        "IL4R"      "IL5"       "IL5RA"
[96] "IL6ST"      "IL7"        "IL7R"      "IRF1"      "IRF2"
[101] "IRF4"       "IRF7"       "IRF9"      "ISG15"     "ITGA1"
[106] "ITGA4"      "ITGB1"      "ITK"       "IZUMO1R"   "JAK1"
[111] "JAK2"       "JUN"        "KLF2"      "KRAS"      "LAG3"
[116] "LAT"        "LCK"        "LEF1"      "LGALS1"   "LY6E"
[121] "LYPD6"      "MAF"        "MALAT1"   "MAPK1"     "MAPK3"
[126] "MAPK8"      "MTOR"       "MYB"       "MYC"       "NFATC1"
[131] "NFKB1"      "NKG7"       "NLRP3"    "NR4A1"     "NRAS"
[136] "ORAI1"      "PDCD1"     "PI3"       "PIK3CA"   "PLCG1"
[141] "PML"        "PPARA"     "PPARG"    "PPARGC1A" "PPP3CC"
[146] "PRDM1"      "PRKAA2"    "PRKCQ"    "PTEN"      "PTMA"
[151] "PTPN6"      "PTPRC"     "RAC1"     "RAC2"      "RAP1A"
[156] "RGS1"       "RICTOR"    "RORC"     "RPL13A"   "RPTOR"
[161] "RUNX1"      "S100A4"    "S100A6"   "S1PR1"    "SELL"
[166] "SLC2A1"     "SLC2A3"    "SOCS3"    "SREBF1"   "STAT1"
[171] "STAT3"      "STAT4"      "STAT5B"   "STMN1"    "TBX21"
[176] "TCF7"       "TGFBR2"    "TIGIT"    "TLN1"     "TMSB10"
[181] "TNF"         "TNFAIP3"   "TNFRSF18" "TNFRSF1A" "TNFRSF1B"
[186] "TNFRSF4"    "TNFRSF9"   "TNFSF8"   "TRAF2"    "TRAF3IP2"
[191] "TRAF5"      "TXK"        "TYK2"     "VAV1"     "ZAP70"
[196] "ZBTB16"     "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] "The panel's found in ctInput are the same as the panel loaded by the User."
[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"   "AIM2"       "AKT1"
[11] "AKT1S1"     "ARPC2"      "B2M"       "BCL2"       "BCL6"

```

```

[16] "BIRC5"      "BTG1"       "C3"          "C5"          "CALM1"
[21] "CBLB"        "CCL5"       "CCR1"        "CCR2"        "CCR3"
[26] "CCR4"        "CCR5"       "CCR6"        "CCR7"        "CD200"
[31] "CD200R1"     "CD27"       "CD274"       "CD28"       "CD3E"
[36] "CD4"         "CD40"       "CD40LG"      "CD44"       "CD48"
[41] "CD52"        "CD53"       "CD69"        "CD8A"       "CDC42"
[46] "CRIP1"        "CTLA4"      "CXCL10"      "CXCL9"      "CXCR3"
[51] "CXCR4"        "CXCR6"      "DNM1L"       "DPP4"       "EVL"
[56] "FAIM2"        "FAS"        "FOS"         "FOXO1"      "FOXP3"
[61] "FYN"          "GAPDH"      "GATA3"       "GRB2"       "GSK3A"
[66] "GSK3B"        "HAVCR2"     "HIF1A"       "HLA-DQB1"    "HLA-DRA"
[71] "HRAS"         "ICAM1"      "ICOS"        "ID2"        "IFI44"
[76] "IFI44L"       "IFIT1"      "IFIT3"       "IFNAR1"     "IFNAR2"
[81] "IFNG"         "IFNGR1"     "IKZF2"       "IL10"        "IL12RB1"
[86] "IL17A"         "IL2"        "IL21"        "IL25"        "IL2RA"
[91] "IL3"          "IL4"        "IL4R"        "IL5"        "IL5RA"
[96] "IL6ST"        "IL7"        "IL7R"        "IRF1"       "IRF2"
[101] "IRF4"         "IRF7"       "IRF9"        "ISG15"      "ITGA1"
[106] "ITGA4"        "ITGB1"      "ITK"         "IZUMO1R"    "JAK1"
[111] "JAK2"         "JUN"        "KLF2"        "KRAS"       "LAG3"
[116] "LAT"          "LCK"        "LEF1"        "LGALS1"     "LY6E"
[121] "LYPD6"        "MAF"        "MALAT1"     "MAPK1"      "MAPK3"
[126] "MAPK8"        "MTOR"       "MYB"         "MYC"        "NFATC1"
[131] "NFKB1"        "NKG7"       "NLRP3"       "NR4A1"      "NRAS"
[136] "ORAI1"        "PDCD1"     "PI3"         "PIK3CA"     "PLCG1"
[141] "PML"          "PPARA"      "PPARG"       "PPARGC1A"   "PPP3CC"
[146] "PRDM1"        "PRKAA2"     "PRKCQ"       "PTEN"       "PTMA"
[151] "PTPN6"        "PTPRC"      "RAC1"        "RAC2"       "RAP1A"
[156] "RGS1"         "RICTOR"     "RORC"        "RPL13A"     "RPTOR"
[161] "RUNX1"        "S100A4"     "S100A6"      "S1PR1"     "SELL"
[166] "SLC2A1"       "SLC2A3"     "SOCS3"       "SREBF1"     "STAT1"
[171] "STAT3"        "STAT4"       "STAT5B"      "STMN1"      "TBX21"
[176] "TCF7"         "TGFBR2"     "TIGIT"       "TLN1"       "TMSB10"
[181] "TNF"          "TNFAIP3"    "TNFRSF18"    "TNFRSF1A"   "TNFRSF1B"
[186] "TNFRSF4"      "TNFRSF9"    "TNFSF8"      "TRAF2"      "TRAF3IP2"
[191] "TRAF5"         "TXK"        "TYK2"        "VAV1"       "ZAP70"
[196] "ZBTB16"       "ZEB2"       "ZEB2"        "ZEB2"       "ZEB2"

[1] "The first column you'll pull is: 9"  "The first column you'll pull is: 56"
[1] "The last column you'll pull is: 197"

```

```

[1] "AIM2"         "AKT1"       "AKT1S1"      "ARPC2"      "B2M"       "BCL2"
[7] "BCL6"         "BIRC5"      "BTG1"        "C3"          "C5"          "CALM1"
[13] "CBLB"         "CCL5"       "CCR1"        "CCR2"       "CCR3"       "CCR4"
[19] "CCR5"         "CCR6"       "CCR7"        "CD200"      "CD200R1"    "CD27"
[25] "CD274"        "CD28"       "CD3E"        "CD4"        "CD40"       "CD40LG"
[31] "CD44"         "CD48"       "CD52"        "CD53"       "CD69"       "CD8A"
[37] "CDC42"        "CRIP1"      "CTLA4"       "CXCL10"     "CXCL9"      "CXCR3"
[43] "CXCR4"        "CXCR6"      "DNM1L"       "DPP4"       "EVL"        "FAIM2"
[49] "FAS"          "FOS"        "FOXO1"       "FOXP3"      "FYN"        "GAPDH"
[55] "GATA3"        "GRB2"       "GSK3A"       "GSK3B"      "HAVCR2"    "HIF1A"
[61] "HLA-DQB1"     "HLA-DRA"    "HRAS"        "ICAM1"      "ICOS"       "ID2"
[67] "IFI44"        "IFI44L"     "IFIT1"       "IFIT3"      "IFNAR1"     "IFNAR2"
[73] "IFNG"         "IFNGR1"     "IKZF2"       "IL10"        "IL12RB1"    "IL17A"
[79] "IL2"          "IL21"       "IL25"        "IL2RA"      "IL3"        "IL4"

```

```

[85] "IL4R"      "IL5"       "IL5RA"     "IL6ST"     "IL7"       "IL7R"
[91] "IRF1"      "IRF2"      "IRF4"      "IRF7"      "IRF9"      "ISG15"
[97] "ITGA1"      "ITGA4"     "ITGB1"     "ITK"       "IZUMO1R"    "JAK1"
[103] "JAK2"      "JUN"       "KLF2"      "KRAS"      "LAG3"      "LAT"
[109] "LCK"       "LEF1"      "LGALS1"    "LY6E"      "LYPD6"     "MAF"
[115] "MALAT1"    "MAPK1"     "MAPK3"     "MAPK8"     "MTOR"      "MYB"
[121] "MYC"       "NFATC1"    "NFKB1"     "NKG7"      "NLRP3"     "NR4A1"
[127] "NRAS"      "ORAI1"     "PDCD1"     "PI3"       "PIK3CA"    "PLCG1"
[133] "PML"       "PPARA"     "PPARG"     "PPARGC1A"  "PPP3CC"    "PRDM1"
[139] "PRKAA2"    "PRKCQ"     "PTEN"      "PTMA"      "PTPN6"     "PTPRC"
[145] "RAC1"      "RAC2"      "RAP1A"     "RGS1"      "RICTOR"    "RORC"
[151] "RPL13A"    "RPTOR"     "RUNX1"     "S100A4"   "S100A6"    "S1PR1"
[157] "SELL"       "SLC2A1"    "SLC2A3"    "SOCS3"     "SREBF1"    "STAT1"
[163] "STAT3"     "STAT4"     "STAT5B"    "STMN1"     "TBX21"     "TCF7"
[169] "TGFBR2"    "TIGIT"     "TLN1"      "TMSB10"   "TNF"       "TNFAIP3"
[175] "TNFRSF18"  "TNFRSF1A"  "TNFRSF1B"  "TNFRSF4"  "TNFRSF9"   "TNFSF8"
[181] "TRAF2"     "TRAF3IP2"  "TRAF5"     "TXK"       "TYK2"      "VAV1"
[187] "ZAP70"     "ZBTB16"    "ZEB2"

```

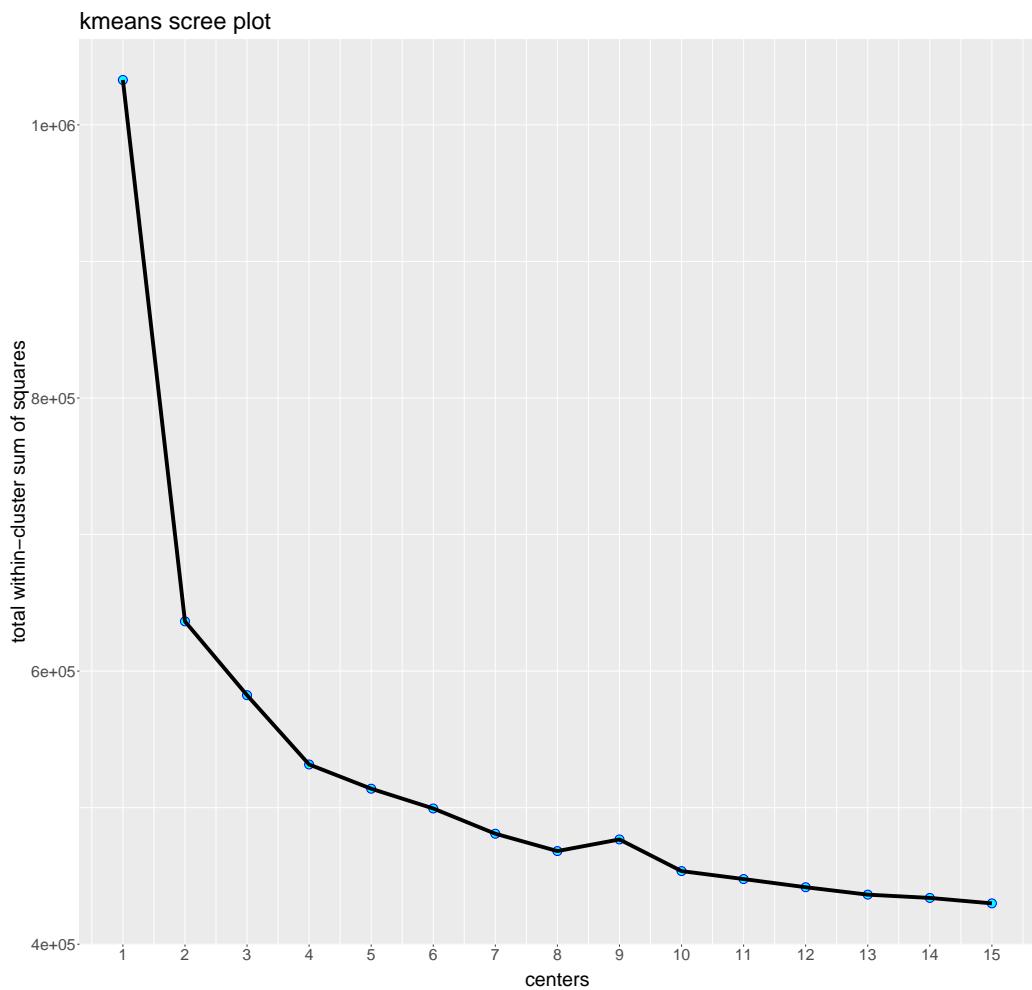
```

[1] "PanelNumber equals: 1 and 3 . Columns to be sent for kmeans testing: "
[1] "AIM2"      "AKT1"      "AKT1S1"    "ARPC2"    "B2M"       "BCL2"
[7] "BCL6"      "BIRC5"    "BTG1"      "C3"       "C5"       "CALM1"
[13] "CBLB"      "CCL5"      "CCR1"      "CCR2"     "CCR3"      "CCR4"
[19] "CCR5"      "CCR6"      "CCR7"      "CD200"    "CD200R1"  "CD27"
[25] "CD274"     "CD28"      "CD3E"      "CD4"      "CD40"      "CD40LG"
[31] "CD44"      "CD48"      "CD52"      "CD53"     "CD69"      "CD8A"
[37] "CDC42"     "CRIP1"     "CTLA4"     "CXCL10"   "CXCL9"     "CXCR3"
[43] "CXCR4"     "CXCR6"     "DNM1L"     "DPP4"     "EVL"       "FAIM2"
[49] "FAS"       "FOS"       "FOXO1"     "FOXP3"    "FYN"       "GAPDH"
[55] "GATA3"     "GRB2"      "GSK3A"     "GSK3B"    "HAVCR2"   "HIF1A"
[61] "HLA-DQB1"  "HLA-DRA"   "HRAS"      "ICAM1"    "ICOS"      "ID2"
[67] "IFI44"     "IFI44L"    "IFIT1"     "IFIT3"    "IFNAR1"    "IFNAR2"
[73] "IFNG"      "IFNGR1"   "IKZF2"     "IL10"     "IL12RB1"   "IL17A"
[79] "IL2"       "IL21"      "IL25"      "IL2RA"    "IL3"       "IL4"
[85] "IL4R"      "IL5"       "IL5RA"     "IL6ST"    "IL7"       "IL7R"
[91] "IRF1"      "IRF2"      "IRF4"      "IRF7"     "IRF9"      "ISG15"
[97] "ITGA1"     "ITGA4"     "ITGB1"     "ITK"      "IZUMO1R"   "JAK1"
[103] "JAK2"     "JUN"       "KLF2"      "KRAS"     "LAG3"      "LAT"
[109] "LCK"       "LEF1"      "LGALS1"    "LY6E"     "LYPD6"     "MAF"
[115] "MALAT1"   "MAPK1"     "MAPK3"     "MAPK8"    "MTOR"      "MYB"
[121] "MYC"       "NFATC1"    "NFKB1"     "NKG7"     "NLRP3"     "NR4A1"
[127] "NRAS"     "ORAI1"     "PDCD1"     "PI3"      "PIK3CA"    "PLCG1"
[133] "PML"       "PPARA"     "PPARG"     "PPARGC1A"  "PPP3CC"    "PRDM1"
[139] "PRKAA2"   "PRKCQ"     "PTEN"      "PTMA"     "PTPN6"     "PTPRC"
[145] "RAC1"      "RAC2"      "RAP1A"     "RGS1"     "RICTOR"    "RORC"
[151] "RPL13A"   "RPTOR"     "RUNX1"     "S100A4"   "S100A6"    "S1PR1"
[157] "SELL"      "SLC2A1"    "SLC2A3"    "SOCS3"    "SREBF1"    "STAT1"
[163] "STAT3"     "STAT4"     "STAT5B"    "STMN1"    "TBX21"     "TCF7"
[169] "TGFBR2"   "TIGIT"     "TLN1"      "TMSB10"   "TNF"       "TNFAIP3"
[175] "TNFRSF18" "TNFRSF1A"  "TNFRSF1B"  "TNFRSF4"  "TNFRSF9"   "TNFSF8"
[181] "TRAF2"     "TRAF3IP2"  "TRAF5"     "TXK"      "TYK2"      "VAV1"
[187] "ZAP70"     "ZBTB16"    "ZEB2"

[1] "Column names after searching for the column pattern and after selecting the right columns. The fol
[1] "AIM2"      "AKT1"      "AKT1S1"    "ARPC2"    "B2M"       "BCL2"

```

[7]	"BCL6"	"BIRC5"	"BTG1"	"C3"	"C5"	"CALM1"
[13]	"CBLB"	"CCL5"	"CCR1"	"CCR2"	"CCR3"	"CCR4"
[19]	"CCR5"	"CCR6"	"CCR7"	"CD200"	"CD200R1"	"CD27"
[25]	"CD274"	"CD28"	"CD3E"	"CD4"	"CD40"	"CD40LG"
[31]	"CD44"	"CD48"	"CD52"	"CD53"	"CD69"	"CD8A"
[37]	"CDC42"	"CRIP1"	"CTLA4"	"CXCL10"	"CXCL9"	"CXCR3"
[43]	"CXCR4"	"CXCR6"	"DNM1L"	"DPP4"	"EVL"	"FAIM2"
[49]	"FAS"	"FOS"	"FOXO1"	"FOXP3"	"FYN"	"GAPDH"
[55]	"GATA3"	"GRB2"	"GSK3A"	"GSK3B"	"HAVCR2"	"HIF1A"
[61]	"HLA-DQB1"	"HLA-DRA"	"HRAS"	"ICAM1"	"ICOS"	"ID2"
[67]	"IFI44"	"IFI44L"	"IFIT1"	"IFIT3"	"IFNAR1"	"IFNAR2"
[73]	"IFNG"	"IFNGR1"	"IKZF2"	"IL10"	"IL12RB1"	"IL17A"
[79]	"IL2"	"IL21"	"IL25"	"IL2RA"	"IL3"	"IL4"
[85]	"IL4R"	"IL5"	"IL5RA"	"IL6ST"	"IL7"	"IL7R"
[91]	"IRF1"	"IRF2"	"IRF4"	"IRF7"	"IRF9"	"ISG15"
[97]	"ITGA1"	"ITGA4"	"ITGB1"	"ITK"	"IZUMO1R"	"JAK1"
[103]	"JAK2"	"JUN"	"KLF2"	"KRAS"	"LAG3"	"LAT"
[109]	"LCK"	"LEF1"	"LGALS1"	"LY6E"	"LYPD6"	"MAF"
[115]	"MALAT1"	"MAPK1"	"MAPK3"	"MAPK8"	"MTOR"	"MYB"
[121]	"MYC"	"NFATC1"	"NFKB1"	"NKG7"	"NLRP3"	"NR4A1"
[127]	"NRAS"	"ORAI1"	"PDCD1"	"PI3"	"PIK3CA"	"PLCG1"
[133]	"PML"	"PPARA"	"PPARG"	"PPARGC1A"	"PPP3CC"	"PRDM1"
[139]	"PRKAA2"	"PRKCQ"	"PTEN"	"PTMA"	"PTPN6"	"PTPRC"
[145]	"RAC1"	"RAC2"	"RAP1A"	"RGS1"	"RICTOR"	"RORC"
[151]	"RPL13A"	"RPTOR"	"RUNX1"	"S100A4"	"S100A6"	"S1PR1"
[157]	"SELL"	"SLC2A1"	"SLC2A3"	"SOCS3"	"SREBF1"	"STAT1"
[163]	"STAT3"	"STAT4"	"STAT5B"	"STMN1"	"TBX21"	"TCF7"
[169]	"TGFBR2"	"TIGIT"	"TLN1"	"TMSB10"	"TNF"	"TNFAIP3"
[175]	"TNFRSF18"	"TNFRSF1A"	"TNFRSF1B"	"TNFRSF4"	"TNFRSF9"	"TNFSF8"
[181]	"TRAF2"	"TRAF3IP2"	"TRAF5"	"TXK"	"TYK2"	"VAV1"
[187]	"ZAP70"	"ZBTB16"	"ZEB2"			



```
[1] "Column Names for ctClust are: "
[1] "cellSource"      "probe"          "age"            "patient"
[5] "SPA"             "SPAM"           "SPAMcell"       "cellType"
[9] "AIM2"            "AKT1"           "AKT1S1"         "ARPC2"
[13] "B2M"             "BCL2"           "BCL6"           "BIRC5"
[17] "BTG1"            "C3"              "C5"              "CALM1"
[21] "CBLB"            "CCL5"           "CCR1"           "CCR2"
[25] "CCR3"            "CCR4"           "CCR5"           "CCR6"
```

```

[29] "CCR7"           "CD200"          "CD200R1"        "CD27"
[33] "CD274"          "CD28"           "CD3E"           "CD4"
[37] "CD40"           "CD40LG"         "CD44"           "CD48"
[41] "CD52"           "CD53"           "CD69"           "CD8A"
[45] "CDC42"          "CRIP1"          "CTLA4"          "CXCL10"
[49] "CXCL9"          "CXCR3"          "CXCR4"          "CXCR6"
[53] "DNM1L"          "DPP4"           "EVL"            "FAIM2"
[57] "FAS"            "FOS"            "FOXO1"          "FOXP3"
[61] "FYN"            "GAPDH"          "GATA3"          "GRB2"
[65] "GSK3A"          "GSK3B"          "HAVCR2"         "HIF1A"
[69] "HLA.DQB1"       "HLA.DRA"        "HRAS"           "ICAM1"
[73] "ICOS"           "ID2"            "IFI44"          "IFI44L"
[77] "IFIT1"          "IFIT3"          "IFNAR1"         "IFNAR2"
[81] "IFNG"           "IFNGR1"         "IKZF2"          "IL10"
[85] "IL12RB1"        "IL17A"          "IL2"            "IL21"
[89] "IL25"           "IL2RA"          "IL3"            "IL4"
[93] "IL4R"           "IL5"            "IL5RA"          "IL6ST"
[97] "IL7"             "IL7R"           "IRF1"           "IRF2"
[101] "IRF4"           "IRF7"           "IRF9"           "ISG15"
[105] "ITGA1"          "ITGA4"          "ITGB1"          "ITK"
[109] "IZUMO1R"        "JAK1"           "JAK2"           "JUN"
[113] "KLF2"           "KRAS"           "LAG3"           "LAT"
[117] "LCK"            "LEF1"           "LGALS1"         "LY6E"
[121] "LYPD6"          "MAF"            "MALAT1"         "MAPK1"
[125] "MAPK3"          "MAPK8"          "MTOR"           "MYB"
[129] "MYC"            "NFATC1"         "NFKB1"          "NKG7"
[133] "NLRP3"          "NR4A1"          "NRAS"           "ORAI1"
[137] "PDCD1"          "PI3"            "PIK3CA"         "PLCG1"
[141] "PML"            "PPARA"          "PPARG"          "PPARGC1A"
[145] "PPP3CC"         "PRDM1"          "PRKAA2"         "PRKCQ"
[149] "PTEN"           "PTMA"           "PTPN6"          "PTPRC"
[153] "RAC1"            "RAC2"           "RAP1A"          "RGS1"
[157] "RICTOR"         "RORC"           "RPL13A"         "RPTOR"
[161] "RUNX1"          "S100A4"         "S100A6"         "S1PR1"
[165] "SELL"           "SLC2A1"         "SLC2A3"         "SOCS3"
[169] "SREBF1"         "STAT1"          "STAT3"          "STAT4"
[173] "STAT5B"         "STMN1"          "TBX21"          "TCF7"
[177] "TGFBR2"         "TIGIT"          "TLN1"           "TMSB10"
[181] "TNF"             "TNFAIP3"        "TNFRSF18"       "TNFRSF1A"
[185] "TNFRSF1B"       "TNFRSF4"        "TNFRSF9"        "TNFSF8"
[189] "TRAF2"          "TRAF3IP2"       "TRAF5"          "TXK"
[193] "TYK2"           "VAV1"           "ZAP70"          "ZBTB16"
[197] "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"  "AIM2"           "AKT1"           "AKT1S1"
[13] "ARPC2"          "B2M"            "BCL2"           "BCL6"
[17] "BIRC5"          "BTG1"           "C3"             "C5"
[21] "CALM1"          "CBLB"           "CCL5"           "CCR1"
[25] "CCR2"           "CCR3"           "CCR4"           "CCR5"
[29] "CCR6"           "CCR7"           "CD200"          "CD200R1"
[33] "CD27"           "CD274"          "CD28"           "CD3E"
[37] "CD4"            "CD40"           "CD40LG"         "CD44"

```

```

[41] "CD48"           "CD52"           "CD53"           "CD69"
[45] "CD8A"           "CDC42"          "CRIP1"          "CTLA4"
[49] "CXCL10"         "CXCL9"          "CXCR3"          "CXCR4"
[53] "CXCR6"          "DNM1L"          "DPP4"           "EVL"
[57] "FAIM2"          "FAS"            "FOS"            "FOXO1"
[61] "FOXP3"          "FYNN"           "GAPDH"          "GATA3"
[65] "GRB2"           "GSK3A"          "GSK3B"          "HAVCR2"
[69] "HIF1A"          "HLA.DQB1"       "HLA.DRA"        "HRAS"
[73] "ICAM1"          "ICOS"           "ID2"            "IFI44"
[77] "IFI44L"         "IFIT1"          "IFIT3"          "IFNAR1"
[81] "IFNAR2"         "IFNG"           "IFNGR1"        "IKZF2"
[85] "IL10"           "IL12RB1"        "IL17A"          "IL2"
[89] "IL21"           "IL25"            "IL2RA"          "IL3"
[93] "IL4"             "IL4R"           "IL5"            "IL5RA"
[97] "IL6ST"          "IL7"             "IL7R"           "IRF1"
[101] "IRF2"          "IRF4"            "IRF7"           "IRF9"
[105] "ISG15"          "ITGA1"          "ITGA4"          "ITGB1"
[109] "ITK"            "IZUMO1R"        "JAK1"           "JAK2"
[113] "JUN"            "KLF2"           "KRAS"           "LAG3"
[117] "LAT"            "LCK"             "LEF1"           "LGALS1"
[121] "LY6E"           "LYPD6"          "MAF"            "MALAT1"
[125] "MAPK1"          "MAPK3"          "MAPK8"          "MTOR"
[129] "MYB"            "MYC"             "NFATC1"         "NFKB1"
[133] "NKG7"           "NLRP3"          "NR4A1"          "NRAS"
[137] "ORAI1"          "PDCD1"          "PI3"            "PIK3CA"
[141] "PLCG1"          "PML"             "PPARA"          "PPARG"
[145] "PPARGC1A"       "PPP3CC"         "PRDM1"          "PRKAA2"
[149] "PRKCQ"          "PTEN"            "PTMA"           "PTPN6"
[153] "PTPRC"          "RAC1"            "RAC2"           "RAP1A"
[157] "RGS1"           "RICTOR"         "RORC"           "RPL13A"
[161] "RPTOR"          "RUNX1"          "S100A4"         "S100A6"
[165] "S1PR1"          "SELL"            "SLC2A1"         "SLC2A3"
[169] "SOCS3"          "SREBF1"         "STAT1"          "STAT3"
[173] "STAT4"          "STAT5B"          "STMN1"          "TBX21"
[177] "TCF7"           "TGFBR2"         "TIGIT"          "TLN1"
[181] "TMSB10"         "TNF"             "TNFAIP3"        "TNFRSF18"
[185] "TNFRSF1A"       "TNFRSF1B"       "TNFRSF4"        "TNFRSF9"
[189] "TNFSF8"         "TRAF2"           "TRAF3IP2"       "TRAF5"
[193] "TXK"             "TYK2"            "VAV1"           "ZAP70"
[197] "ZBTB16"         "ZEB2"            "ZEB2"           "ZEB2"

[1] "The values in lenghtofkmeans 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 laoded into idCols: 9 which corresponds to column kmeans.cluster. The second to last column :"

[1] "cellSource"      "probe"          "age"            "patient"
[5] "SPA"             "SPAM"           "SPAMcell"       "cellType"
[9] "kmeans.cluster"  "AIM2"           "AKT1"           "AKT1S1"
[13] "ARPC2"          "B2M"            "BCL2"           "BCL6"
[17] "BIRC5"          "BTG1"           "C3"             "C5"
[21] "CALM1"          "CBLB"           "CCL5"           "CCR1"
[25] "CCR2"           "CCR3"           "CCR4"           "CCR5"
[29] "CCR6"           "CCR7"           "CD200"          "CD200R1"
[33] "CD27"           "CD274"          "CD28"           "CD3E"
[37] "CD4"            "CD40"           "CD40LG"         "CD44"

```

```

[41] "CD48"          "CD52"          "CD53"          "CD69"
[45] "CD8A"          "CDC42"         "CRIP1"         "CTLA4"
[49] "CXCL10"        "CXCL9"         "CXCR3"         "CXCR4"
[53] "CXCR6"          "DNM1L"         "DPP4"          "EVL"
[57] "FAIM2"          "FAS"           "FOS"           "FOXO1"
[61] "FOXP3"          "FYNN"          "GAPDH"         "GATA3"
[65] "GRB2"           "GSK3A"         "GSK3B"         "HAVCR2"
[69] "HIF1A"          "HLA.DQB1"      "HLA.DRA"       "HRAS"
[73] "ICAM1"          "ICOS"          "ID2"           "IFI44"
[77] "IFI44L"         "IFIT1"          "IFIT3"         "IFNAR1"
[81] "IFNAR2"         "IFNG"          "IFNGR1"        "IKZF2"
[85] "IL10"           "IL12RB1"       "IL17A"         "IL2"
[89] "IL21"           "IL25"          "IL2RA"         "IL3"
[93] "IL4"            "IL4R"          "IL5"           "IL5RA"
[97] "IL6ST"          "IL7"           "IL7R"          "IRF1"
[101] "IRF2"          "IRF4"          "IRF7"          "IRF9"
[105] "ISG15"          "ITGA1"          "ITGA4"         "ITGB1"
[109] "ITK"            "IZUMO1R"       "JAK1"          "JAK2"
[113] "JUN"            "KLF2"          "KRAS"          "LAG3"
[117] "LAT"            "LCK"           "LEF1"          "LGALS1"
[121] "LY6E"           "LYPD6"          "MAF"           "MALAT1"
[125] "MAPK1"          "MAPK3"          "MAPK8"         "MTOR"
[129] "MYB"            "MYC"           "NFATC1"        "NFKB1"
[133] "NKG7"           "NLRP3"          "NR4A1"         "NRAS"
[137] "ORAI1"          "PDCD1"          "PI3"           "PIK3CA"
[141] "PLCG1"          "PML"           "PPARA"         "PPARG"
[145] "PPARGC1A"       "PPP3CC"        "PRDM1"         "PRKAA2"
[149] "PRKCQ"          "PTEN"          "PTMA"          "PTPN6"
[153] "PTPRC"          "RAC1"           "RAC2"          "RAP1A"
[157] "RGS1"           "RICTOR"        "RORC"          "RPL13A"
[161] "RPTOR"          "RUNX1"          "S100A4"        "S100A6"
[165] "S1PR1"          "SELL"           "SLC2A1"        "SLC2A3"
[169] "SOCS3"          "SREBF1"        "STAT1"         "STAT3"
[173] "STAT4"          "STAT5B"        "STMN1"         "TBX21"
[177] "TCF7"           "TGFBR2"        "TIGIT"         "TLN1"
[181] "TMSB10"         "TNF"            "TNFAIP3"       "TNFRSF18"
[185] "TNFRSF1A"       "TNFRSF1B"      "TNFRSF4"       "TNFRSF9"
[189] "TNFSF8"          "TRAF2"          "TRAF3IP2"      "TRAF5"
[193] "TXK"            "TYK2"           "VAV1"          "ZAP70"
[197] "ZBTB16"          "ZEB2"           "ZEB2"          "ZEB2"

[1]   31    9   32    5  151   35   33  146   27  165   12  102   144   174   53   90    4  110
[19]  100   168  172   54  147   169   34  155   105   28  142   104   37   50  157   153   47   56
[37]   60    43   141   91   26  187   143   159   123   109   128   137   65   38   21  162   163   85
[55]  154   99   92   30  186    2   57   88   98  140   112   180   72   24   40  127   122   17
[73]  132   171   58  183  156  115  133  117   77   29   70  145   39   51    6   71   69   67
[91]   46   108   148  184   42   20   81   64  161   138   114   95  103   66  116   189   164  111
[109]  173   124   160  158   23   55  177  119  176  130   13   49   45   94  125   106  149    7
[127]   18   185   126  182   82    3  166  182   62   61   74   16  131   96  181   121  134  188   93
[145]  120    75   68   63   14  152   22    8  179  118   48  170    1  167  107   73   11   59
[163]   52   150   25   97   10   15  175   36   89   80  178   87  135  129   19   84   76   79
[181]   44   83   78   41   86  101  113  136  139

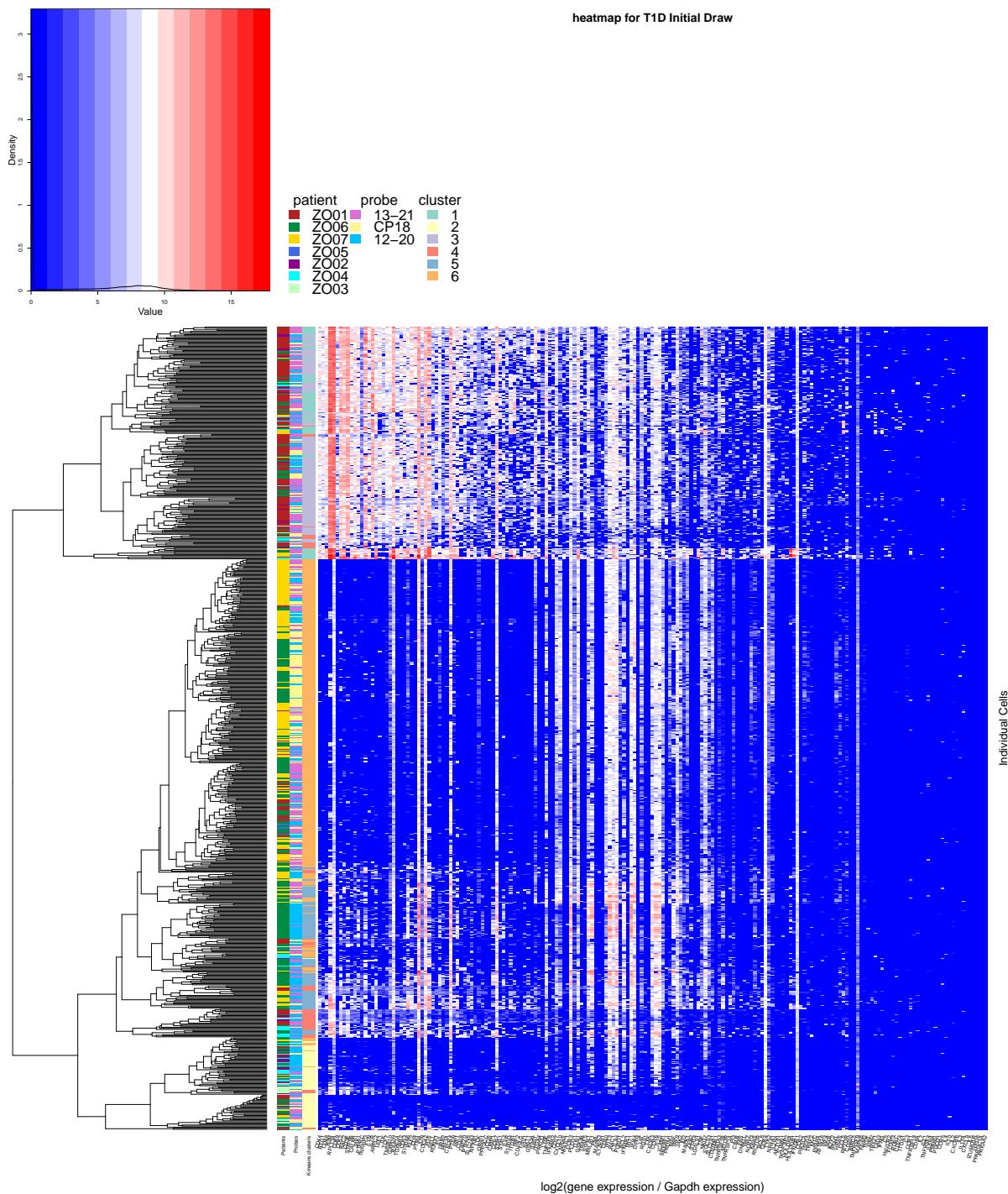
[1] "Length of pvals is 189"
uniqueAges   colorsList
"blood" "deepskyblue2"

```

```

[,1]      [,2]
[1,] "blood" "deepskyblue2"
uniqueSources   colorsList
"blood"        "blue3"
[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 CD44. The last gene is: PRKAA2"

```



[1]

```

[1]
[1] Probe vs. Cluster
      probe_13-21 probe_CP18 probe_12-20
cluster_1       33        11       16
cluster_2       21        17       39
cluster_3       62        35       49
cluster_4       20        14       20
cluster_5       22         8       59
cluster_6      110       133       87

Pearson's Chi-squared test with simulated p-value (based on 2000
replicates)

```

```

data: probeTable
X-squared = 83.151, df = NA, p-value = 0.0004998

```

```

Patient vs. Cluster
      patient_Z001 patient_Z006 patient_Z007 patient_Z005 patient_Z002
cluster_1       32        13       11        0        0
cluster_2       14        22        7        2       11
cluster_3       93        28        2        0       13
cluster_4       24         9        3        0        3
cluster_5        0        68       18        0        0
cluster_6       29       142       151        4        0

      patient_Z004 patient_Z003
cluster_1        4        0
cluster_2       13        8
cluster_3        8        2
cluster_4        8        7
cluster_5        3        0
cluster_6        4        0

```

```

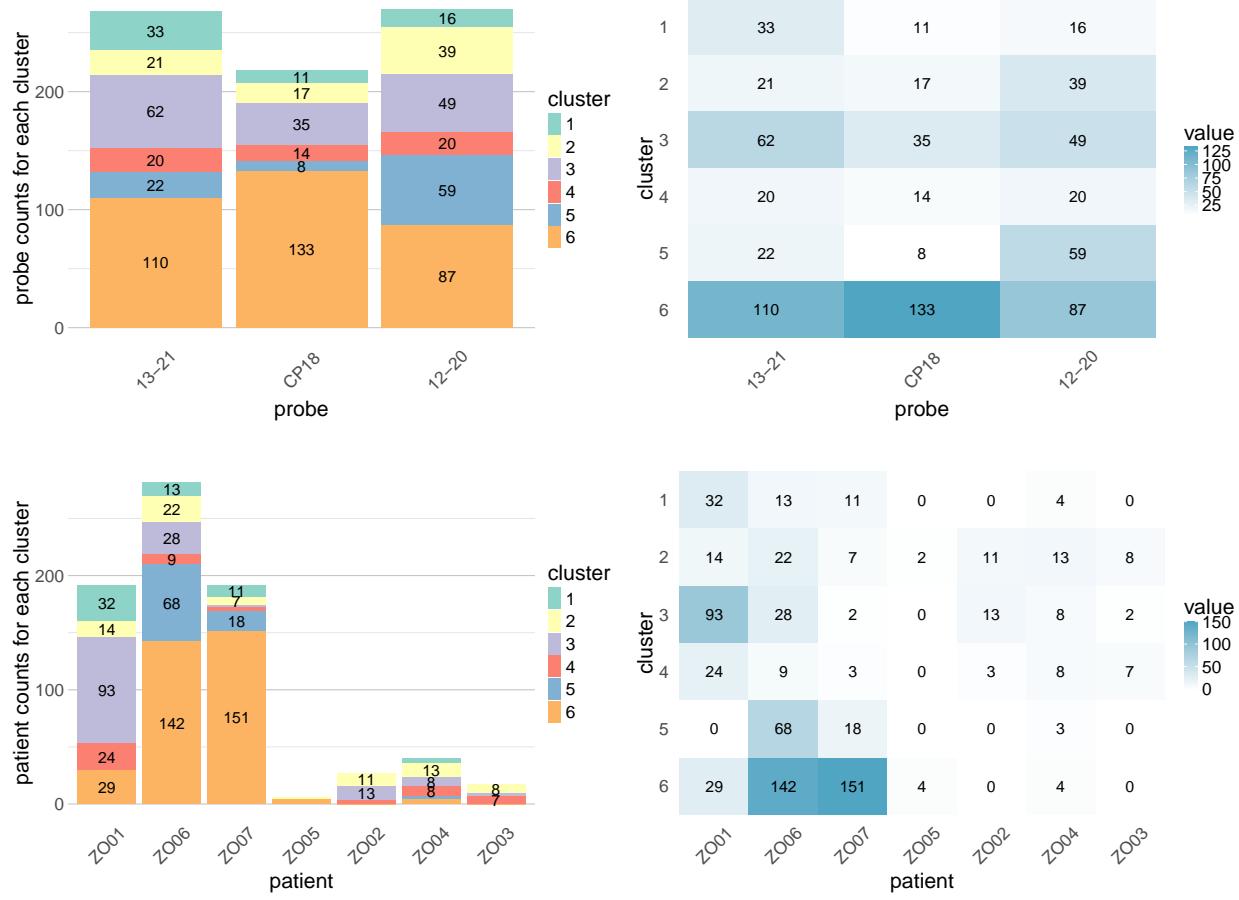
Pearson's Chi-squared test with simulated p-value (based on 2000
replicates)

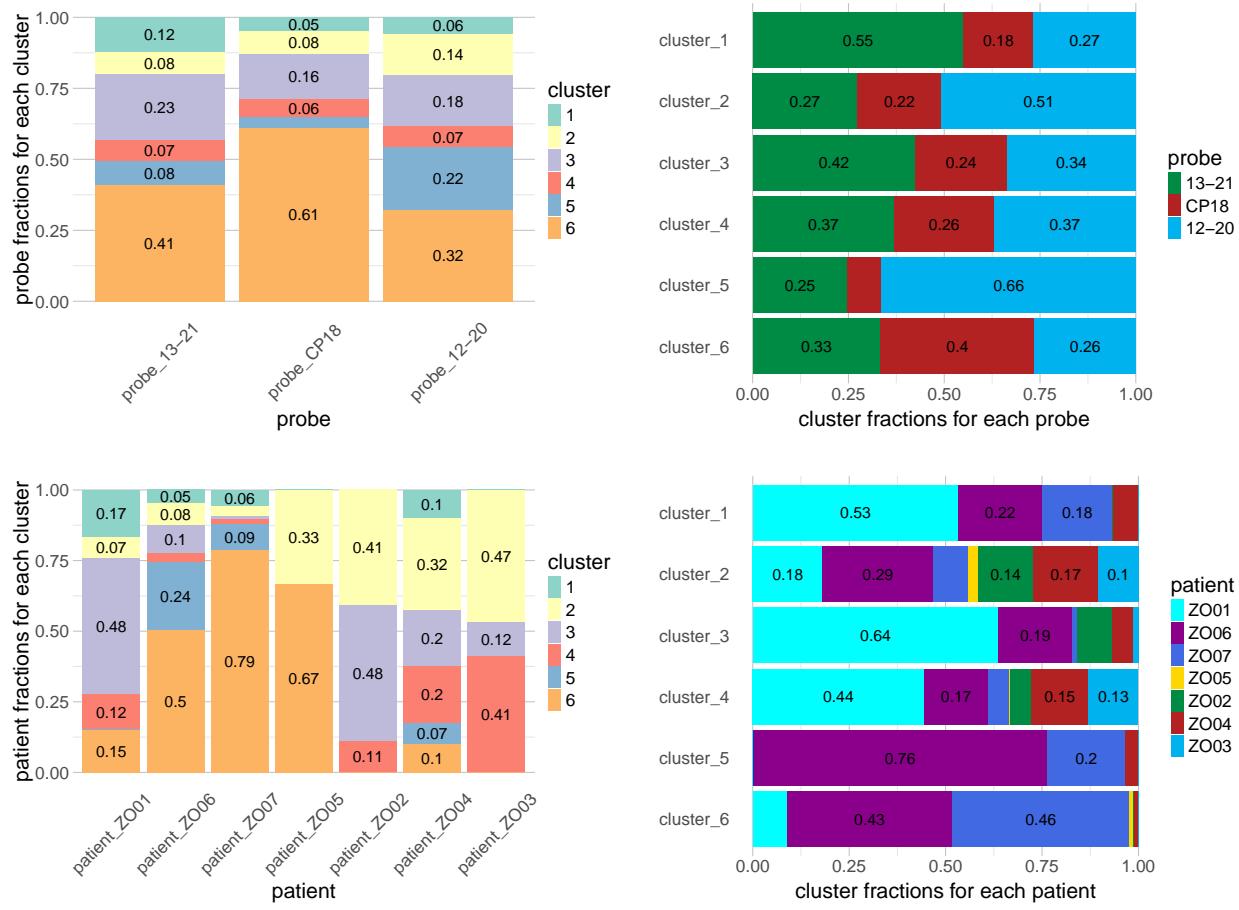
```

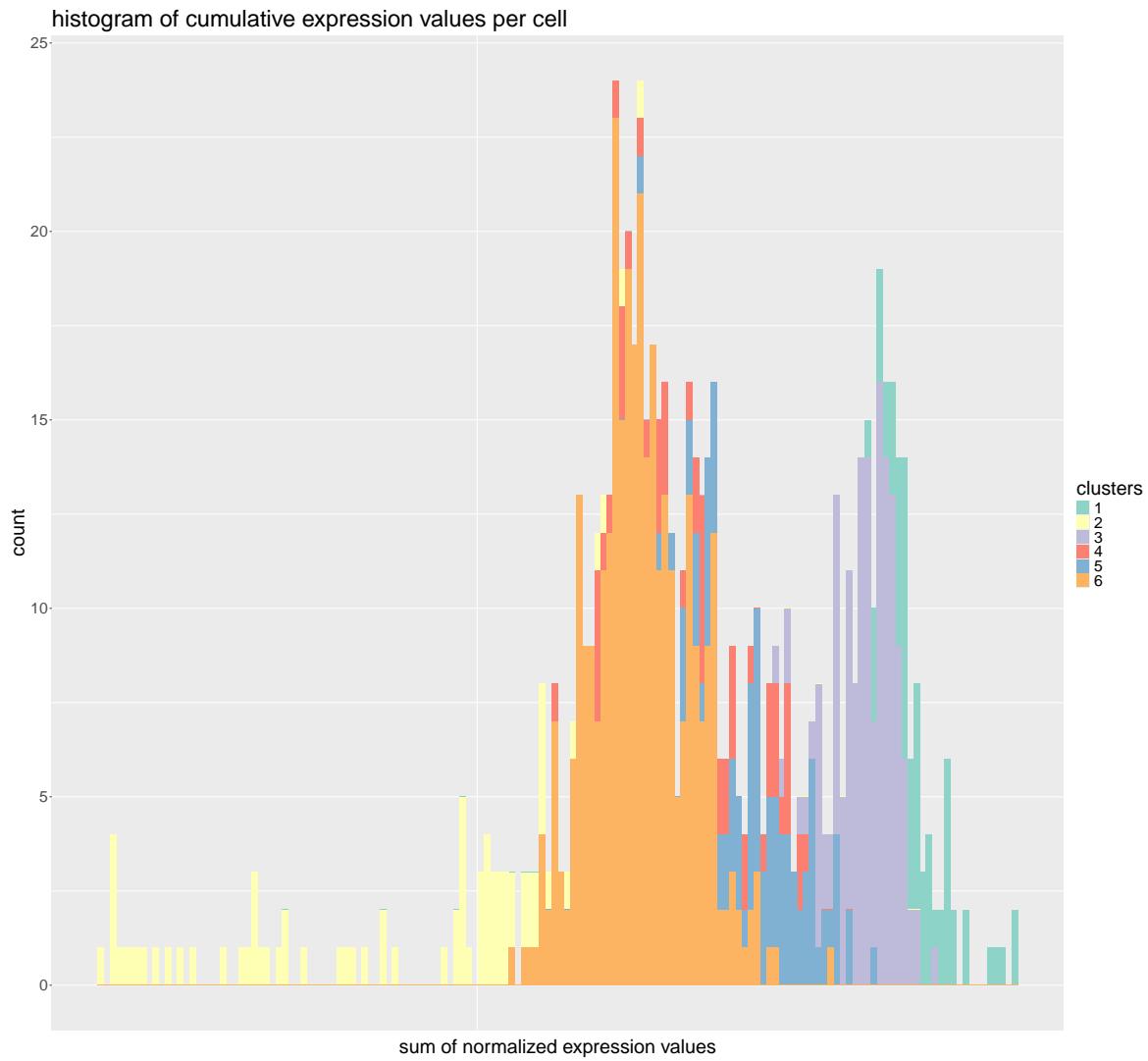
```

data: patientTable
X-squared = 502.33, df = NA, p-value = 0.0004998

```







```
[1] "Column Names are: "
[1] "cellSource"      "probe"          "age"           "patient"
[5] "SPA"            "SPAM"           "SPAMcell"       "cellType"
[9] "kmeans.cluster" "CD44"           "BTG1"          "CD48"
[13] "B2M"            "RPL13A"         "CD69"          "CD52"
[17] "RAC2"           "CD3E"           "STAT5B"        "CALM1"
[21] "JAK1"           "PTPRC"          "TNFAIP3"       "FYNN"
[25] "IL7R"           "ARPC2"          "LEF1"          "ITK"
```

```

[29] "TCF7"           "TMSB10"          "GAPDH"           "RAP1A"
[33] "TGFB2"          "CD53"            "S100A6"          "KLF2"
[37] "CD4"             "PTMA"            "JUN"              "CDC42"
[41] "FOS"             "SELL"            "RUNX1"           "EVL"
[45] "GRB2"            "HIF1A"           "CXCR4"           "PTEN"
[49] "IRF1"            "CD28"            "ZAP70"           "PTPN6"
[53] "SLC2A3"          "NFKB1"           "LCK"              "ORAI1"
[57] "PPP3CC"          "ICOS"            "CRIP1"           "CCR7"
[61] "STAT1"           "STAT3"            "IL4R"            "S100A4"
[65] "ITGB1"           "IRF2"             "CD40LG"          "VAV1"
[69] "AKT1"             "GSK3A"           "IL6ST"           "ITGA4"
[73] "PRKCQ"           "LY6E"            "TNFSF8"          "IFNAR2"
[77] "CD27"            "CXCL10"          "NRAS"            "NFATC1"
[81] "CCR3"            "PLCG1"           "TLN1"             "GSK3B"
[85] "TRAF5"           "S1PR1"           "MALAT1"          "PML"
[89] "MAPK3"            "IL12RB1"          "CD40"             "IFIT3"
[93] "RAC1"             "CTLA4"            "FOXO1"           "BCL2"
[97] "IFNAR1"           "IFIT1"            "IFI44"           "DPP4"
[101] "LAT"              "RGS1"            "TXK"              "CXCR3"
[105] "CCR6"            "IL25"             "ICAM1"           "SREBF1"
[109] "PRDM1"           "MAF"              "IRF9"             "JAK2"
[113] "ID2"              "MAPK1"            "ZEB2"             "STAT4"
[117] "LGALS1"          "TNF"              "NKG7"             "SOCS3"
[121] "SLC2A1"          "CD200R1"          "GATA3"           "TNFRSF1B"
[125] "MTOR"             "TNFRSF1A"          "PI3"              "CBLB"
[129] "FAS"              "DNM1L"            "IRF7"             "NLRP3"
[133] "KRAS"             "RICTOR"           "BCL6"             "CCR4"
[137] "TYK2"             "NR4A1"            "IL2RA"            "AKT1S1"
[141] "STMN1"            "TRAF3IP2"          "HLA.DRA"          "HLA.DQB1"
[145] "IFNGR1"           "CCR2"             "PIK3CA"           "ISG15"
[149] "TRAF2"             "MYC"              "PPARA"            "ZBTB16"
[153] "IRF4"              "MYB"              "IKZF2"            "IFI44L"
[157] "HRAS"             "CCL5"             "RPTOR"            "CD200"
[161] "BIRC5"            "TNFRSF9"          "MAPK8"            "FAIM2"
[165] "TIGIT"             "AIM2"              "TBX21"            "LAG3"
[169] "IFNG"              "C5"              "HAVCR2"           "FOXP3"
[173] "RORC"              "CD274"            "ITGA1"            "C3"
[177] "CCR1"              "TNFRSF18"          "CD8A"             "IL7"
[181] "IL21"              "TNFRSF4"           "IL5RA"            "PPARG"
[185] "PDCD1"             "CCR5"             "IL4"              "IL10"
[189] "IL2"              "CXCR6"            "IL3"              "IL17A"
[193] "CXCL9"             "IL5"              "IZUMO1R"          "LYPD6"
[197] "PPARGC1A"          "PRKAA2"           "TRUE"
[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] "Good news: The panel detected in ctInput is the same as the panel loaded by the User."
[1] "cellSource"        "probe"            "age"              "patient"
[5] "SPA"               "SPAM"             "SPAMcell"         "cellType"
[9] "kmeans.cluster"   "CD44"            "BTG1"             "CD48"
[13] "B2M"               "RPL13A"           "CD69"             "CD52"
[17] "RAC2"              "CD3E"             "STAT5B"           "CALM1"

```

```

[21] "JAK1"           "PTPRC"          "TNFAIP3"        "FYN"
[25] "IL7R"            "ARPC2"          "LEF1"           "ITK"
[29] "TCF7"            "TMSB10"         "GAPDH"          "RAP1A"
[33] "TGFBR2"          "CD53"           "S100A6"         "KLF2"
[37] "CD4"              "PTMA"           "JUN"            "CDC42"
[41] "FOS"              "SELL"            "RUNX1"          "EVL"
[45] "GRB2"             "HIF1A"          "CXCR4"          "PTEN"
[49] "IRF1"             "CD28"           "ZAP70"          "PTPN6"
[53] "SLC2A3"           "NFKB1"          "LCK"            "ORAI1"
[57] "PPP3CC"           "ICOS"           "CRIP1"          "CCR7"
[61] "STAT1"             "STAT3"          "IL4R"           "S100A4"
[65] "ITGB1"             "IRF2"           "CD40LG"         "VAV1"
[69] "AKT1"              "GSK3A"          "IL6ST"          "ITGA4"
[73] "PRKCQ"             "LY6E"           "TNFSF8"         "IFNAR2"
[77] "CD27"              "CXCL10"         "NRAS"           "NFATC1"
[81] "CCR3"              "PLCG1"          "TLN1"            "GSK3B"
[85] "TRAF5"             "S1PR1"          "MALAT1"         "PML"
[89] "MAPK3"             "IL12RB1"        "CD40"           "IFIT3"
[93] "RAC1"              "CTLA4"          "FOXO1"          "BCL2"
[97] "IFNAR1"             "IFIT1"          "IFI44"          "DPP4"
[101] "LAT"               "RGS1"           "TXK"            "CXCR3"
[105] "CCR6"              "IL25"           "ICAM1"          "SREBF1"
[109] "PRDM1"             "MAF"            "IRF9"           "JAK2"
[113] "ID2"               "MAPK1"          "ZEB2"           "STAT4"
[117] "LGALS1"            "TNF"            "NKG7"           "SOCS3"
[121] "SLC2A1"             "CD200R1"        "GATA3"          "TNFRSF1B"
[125] "MTOR"              "TNFRSF1A"       "PI3"            "CBLB"
[129] "FAS"                "DNM1L"          "IRF7"           "NLRP3"
[133] "KRAS"              "RICTOR"         "BCL6"           "CCR4"
[137] "TYK2"              "NR4A1"          "IL2RA"          "AKT1S1"
[141] "STMN1"              "TRAF3IP2"        "HLA.DRA"        "HLA.DQB1"
[145] "IFNGR1"             "CCR2"           "PIK3CA"         "ISG15"
[149] "TRAF2"              "MYC"            "PPARA"          "ZBTB16"
[153] "IRF4"              "MYB"            "IKZF2"          "IFI44L"
[157] "HRAS"              "CCL5"           "RPTOR"          "CD200"
[161] "BIRC5"              "TNFRSF9"        "MAPK8"          "FAIM2"
[165] "TIGIT"              "AIM2"           "TBX21"          "LAG3"
[169] "IFNG"              "C5"             "HAVCR2"         "FOXP3"
[173] "RORC"              "CD274"          "ITGA1"          "C3"
[177] "CCR1"              "TNFRSF18"       "CD8A"           "IL7"
[181] "IL21"              "TNFRSF4"         "IL5RA"          "PPARG"
[185] "PDCD1"              "CCR5"           "IL4"            "IL10"
[189] "IL2"                "CXCR6"          "IL3"            "IL17A"
[193] "CXCL9"              "IL5"            "IZUMO1R"        "LYPD6"
[197] "PPARGC1A"           "PRKAA2"          "PRKAA2"          "PRKAA2"

```

```
[1] "Which genes are dashed in the panel? HLA-DQB1 HLA-DRA"
```

```
[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: CD44"
```

```
[1] "The last column you'll pull is: PRKAA2"
```

```
[1] "CD44"      "BTG1"      "CD48"      "B2M"       "RPL13A"     "CD69"
```

```
[7] "CD52"      "RAC2"      "CD3E"      "STAT5B"    "CALM1"      "JAK1"
```

```

[13] "PTPRC"      "TNFAIP3"     "FYN"        "IL7R"       "ARPC2"      "LEF1"
[19] "ITK"         "TCF7"        "TMSB10"     "GAPDH"     "RAP1A"      "TGFBR2"
[25] "CD53"        "S100A6"      "KLF2"       "CD4"        "PTMA"       "JUN"
[31] "CDC42"       "FOS"         "SELL"       "RUNX1"     "EVL"        "GRB2"
[37] "HIF1A"       "CXCR4"      "PTEN"       "IRF1"       "CD28"       "ZAP70"
[43] "PTPN6"       "SLC2A3"     "NFKB1"      "LCK"        "ORAI1"      "PPP3CC"
[49] "ICOS"        "CRIP1"      "CCR7"       "STAT1"     "STAT3"      "IL4R"
[55] "S100A4"      "ITGB1"      "IRF2"       "CD40LG"    "VAV1"       "AKT1"
[61] "GSK3A"        "IL6ST"      "ITGA4"      "PRKCQ"     "LY6E"       "TNFSF8"
[67] "IFNAR2"      "CD27"        "CXCL10"    "NRAS"      "NFATC1"     "CCR3"
[73] "PLCG1"        "TLN1"        "GSK3B"      "TRAF5"     "S1PR1"      "MALAT1"
[79] "PML"          "MAPK3"      "IL12RB1"   "CD40"      "IFIT3"      "RAC1"
[85] "CTLA4"        "FOXO1"      "BCL2"       "IFNAR1"    "IFIT1"      "IFI44"
[91] "DPP4"         "LAT"         "RGS1"       "TXK"        "CXCR3"      "CCR6"
[97] "IL25"         "ICAM1"      "SREBF1"    "PRDM1"     "MAF"        "IRF9"
[103] "JAK2"        "ID2"         "MAPK1"      "ZEB2"      "STAT4"      "LGALS1"
[109] "TNF"          "NKG7"        "SOCS3"     "SLC2A1"    "CD200R1"   "GATA3"
[115] "TNFRSF1B"   "MTOR"       "TNFRSF1A"  "PI3"       "CBLB"       "FAS"
[121] "DNM1L"        "IRF7"        "NLRP3"      "KRAS"      "RICTOR"     "BCL6"
[127] "CCR4"         "TYK2"        "NR4A1"      "IL2RA"     "AKT1S1"     "STMN1"
[133] "TRAF3IP2"   "HLA-DRA"   "HLA-DQB1"  "IFngr1"   "CCR2"       "PIK3CA"
[139] "ISG15"        "TRAF2"      "MYC"        "PPARA"     "ZBTB16"     "IRF4"
[145] "MYB"          "IKZF2"      "IFI44L"     "HRAS"      "CCL5"       "RPTOR"
[151] "CD200"        "BIRC5"      "TNFRSF9"   "MAPK8"     "FAIM2"      "TIGIT"
[157] "AIM2"         "TBX21"      "LAG3"       "IFNG"      "C5"         "HAVCR2"
[163] "FOXP3"        "RORC"       "CD274"     "ITGA1"     "C3"         "CCR1"
[169] "TNFRSF18"   "CD8A"       "IL7"        "IL21"      "TNFRSF4"   "IL5RA"
[175] "PPARG"        "PDCD1"     "CCR5"       "IL4"       "IL10"       "IL2"
[181] "CXCR6"        "IL3"        "IL17A"      "CXCL9"    "IL5"        "IZUMO1R"
[187] "LYPD6"        "PPARGC1A"  "PRKAA2"

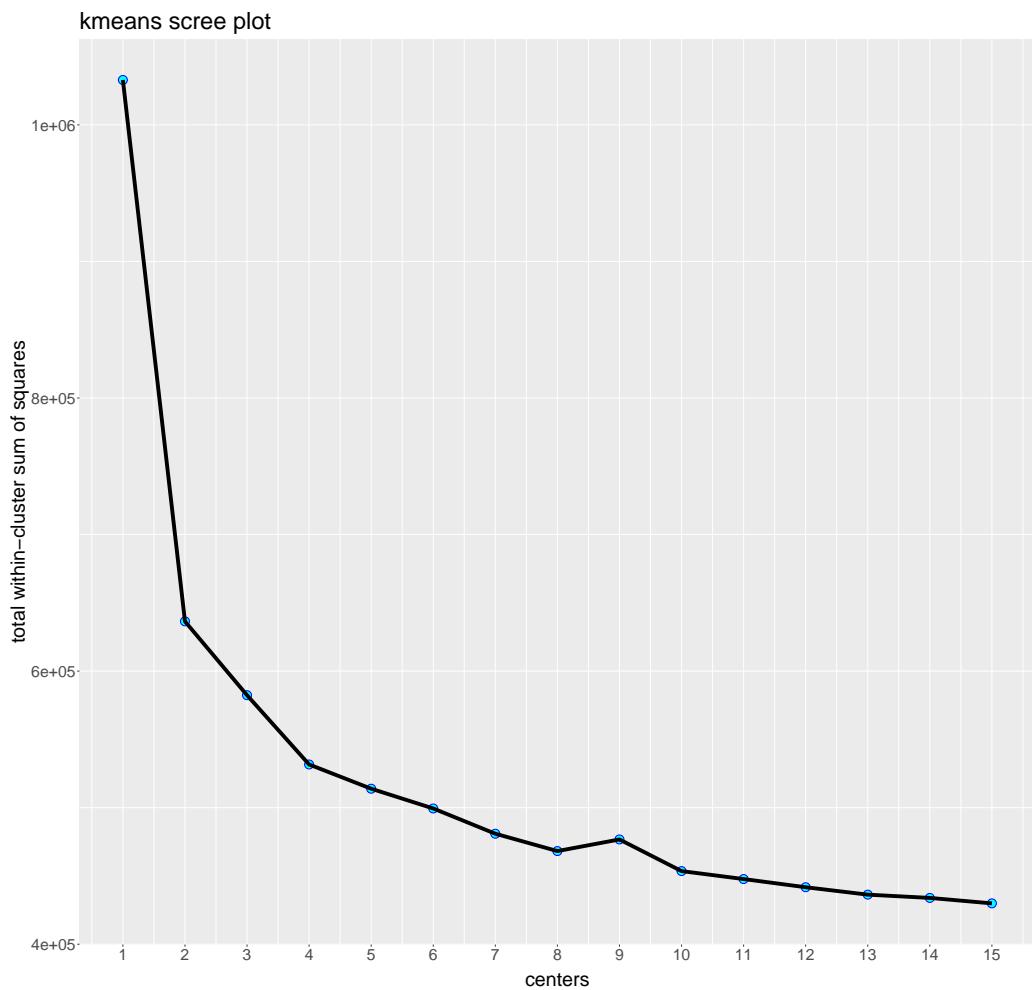
```

```

[1] "PanelNumber equals: 1 and 3 . Columns to be sent for kmeans testing: CD44 and PRKAA2"
[1] "Column names after searching for the column pattern and after selecting the right columns. The fol
[1] "CD44"        "BTG1"        "CD48"       "B2M"        "RPL13A"     "CD69"
[7] "CD52"        "RAC2"        "CD3E"       "STAT5B"     "CALM1"      "JAK1"
[13] "PTPRC"      "TNFAIP3"    "FYN"        "IL7R"       "ARPC2"      "LEF1"
[19] "ITK"         "TCF7"        "TMSB10"    "GAPDH"     "RAP1A"      "TGFBR2"
[25] "CD53"        "S100A6"      "KLF2"       "CD4"        "PTMA"       "JUN"
[31] "CDC42"       "FOS"         "SELL"       "RUNX1"     "EVL"        "GRB2"
[37] "HIF1A"       "CXCR4"      "PTEN"       "IRF1"       "CD28"       "ZAP70"
[43] "PTPN6"       "SLC2A3"     "NFKB1"      "LCK"        "ORAI1"      "PPP3CC"
[49] "ICOS"        "CRIP1"      "CCR7"       "STAT1"     "STAT3"      "IL4R"
[55] "S100A4"      "ITGB1"      "IRF2"       "CD40LG"    "VAV1"       "AKT1"
[61] "GSK3A"        "IL6ST"      "ITGA4"      "PRKCQ"     "LY6E"       "TNFSF8"
[67] "IFNAR2"      "CD27"        "CXCL10"    "NRAS"      "NFATC1"     "CCR3"
[73] "PLCG1"        "TLN1"        "GSK3B"      "TRAF5"     "S1PR1"      "MALAT1"
[79] "PML"          "MAPK3"      "IL12RB1"   "CD40"      "IFIT3"      "RAC1"
[85] "CTLA4"        "FOXO1"      "BCL2"       "IFNAR1"    "IFIT1"      "IFI44"
[91] "DPP4"         "LAT"         "RGS1"       "TXK"        "CXCR3"      "CCR6"
[97] "IL25"         "ICAM1"      "SREBF1"    "PRDM1"     "MAF"        "IRF9"
[103] "JAK2"        "ID2"         "MAPK1"      "ZEB2"      "STAT4"      "LGALS1"
[109] "TNF"          "NKG7"        "SOCS3"     "SLC2A1"    "CD200R1"   "GATA3"
[115] "TNFRSF1B"   "MTOR"       "TNFRSF1A"  "PI3"       "CBLB"       "FAS"
[121] "DNM1L"        "IRF7"        "NLRP3"      "KRAS"      "RICTOR"     "BCL6"
[127] "CCR4"         "TYK2"        "NR4A1"      "IL2RA"     "AKT1S1"     "STMN1"

```

[133]	"TRAF3IP2"	"HLA-DRA"	"HLA-DQB1"	"IFNGR1"	"CCR2"	"PIK3CA"
[139]	"ISG15"	"TRAF2"	"MYC"	"PPARA"	"ZBTB16"	"IRF4"
[145]	"MYB"	"IKZF2"	"IFI44L"	"HRAS"	"CCL5"	"RPTOR"
[151]	"CD200"	"BIRC5"	"TNFRSF9"	"MAPK8"	"FAIM2"	"TIGIT"
[157]	"AIM2"	"TBX21"	"LAG3"	"IFNG"	"C5"	"HAVCR2"
[163]	"FOXP3"	"RORC"	"CD274"	"ITGA1"	"C3"	"CCR1"
[169]	"TNFRSF18"	"CD8A"	"IL7"	"IL21"	"TNFRSF4"	"IL5RA"
[175]	"PPARG"	"PDCD1"	"CCR5"	"IL4"	"IL10"	"IL2"
[181]	"CXCR6"	"IL3"	"IL17A"	"CXCL9"	"IL5"	"IZUMO1R"
[187]	"LYPD6"	"PPARGC1A"	"PRKAA2"			



```
[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" "CD44"           "BTG1"          "CD48"
[13] "B2M"             "RPL13A"         "CD69"          "CD52"
[17] "RAC2"            "CD3E"           "STAT5B"        "CALM1"
[21] "JAK1"            "PTPRC"          "TNFAIP3"       "FYN"
[25] "IL7R"            "ARPC2"          "LEF1"          "ITK"
```

```

[29] "TCF7"           "TMSB10"          "GAPDH"           "RAP1A"
[33] "TGFB2"          "CD53"            "S100A6"          "KLF2"
[37] "CD4"             "PTMA"            "JUN"              "CDC42"
[41] "FOS"             "SELL"            "RUNX1"           "EVL"
[45] "GRB2"            "HIF1A"           "CXCR4"           "PTEN"
[49] "IRF1"            "CD28"            "ZAP70"           "PTPN6"
[53] "SLC2A3"          "NFKB1"           "LCK"              "ORAI1"
[57] "PPP3CC"          "ICOS"            "CRIP1"           "CCR7"
[61] "STAT1"           "STAT3"            "IL4R"             "S100A4"
[65] "ITGB1"           "IRF2"            "CD40LG"          "VAV1"
[69] "AKT1"             "GSK3A"           "IL6ST"           "ITGA4"
[73] "PRKCQ"           "LY6E"            "TNFSF8"          "IFNAR2"
[77] "CD27"            "CXCL10"          "NRAS"            "NFATC1"
[81] "CCR3"            "PLCG1"           "TLN1"             "GSK3B"
[85] "TRAF5"           "S1PR1"           "MALAT1"          "PML"
[89] "MAPK3"           "IL12RB1"         "CD40"             "IFIT3"
[93] "RAC1"             "CTLA4"            "FOXO1"           "BCL2"
[97] "IFNAR1"          "IFIT1"            "IFI44"           "DPP4"
[101] "LAT"              "RGS1"            "TXK"              "CXCR3"
[105] "CCR6"            "IL25"             "ICAM1"           "SREBF1"
[109] "PRDM1"           "MAF"              "IRF9"             "JAK2"
[113] "ID2"              "MAPK1"            "ZEB2"             "STAT4"
[117] "LGALS1"          "TNF"              "NKG7"             "SOCS3"
[121] "SLC2A1"          "CD200R1"          "GATA3"           "TNFRSF1B"
[125] "MTOR"             "TNFRSF1A"         "PI3"              "CBLB"
[129] "FAS"              "DNM1L"            "IRF7"             "NLRP3"
[133] "KRAS"             "RICTOR"          "BCL6"             "CCR4"
[137] "TYK2"             "NR4A1"            "IL2RA"           "AKT1S1"
[141] "STMN1"            "TRAF3IP2"         "HLA-DRA"         "HLA-DQB1"
[145] "IFNGR1"           "CCR2"             "PIK3CA"          "ISG15"
[149] "TRAF2"             "MYC"              "PPARA"           "ZBTB16"
[153] "IRF4"              "MYB"              "IKZF2"           "IFI44L"
[157] "HRAS"             "CCL5"             "RPTOR"           "CD200"
[161] "BIRC5"             "TNFRSF9"          "MAPK8"            "FAIM2"
[165] "TIGIT"             "AIM2"             "TBX21"            "LAG3"
[169] "IFNG"              "C5"              "HAVCR2"          "FOXP3"
[173] "RORC"              "CD274"            "ITGA1"           "C3"
[177] "CCR1"              "TNFRSF18"          "CD8A"             "IL7"
[181] "IL21"              "TNFRSF4"          "IL5RA"           "PPARG"
[185] "PDCD1"             "CCR5"             "IL4"              "IL10"
[189] "IL2"              "CXCR6"            "IL3"              "IL17A"
[193] "CXCL9"             "IL5"              "IZUMO1R"          "LYPD6"
[197] "PPARGC1A"          "PRKAA2"           "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"   "CD44"             "BTG1"             "CD48"
[13] "B2M"               "RPL13A"           "CD69"             "CD52"
[17] "RAC2"              "CD3E"             "STAT5B"           "CALM1"
[21] "JAK1"              "PTPRC"            "TNFAIP3"          "FYN"
[25] "IL7R"              "ARPC2"            "LEF1"             "ITK"
[29] "TCF7"              "TMSB10"           "GAPDH"           "RAP1A"
[33] "TGFB2"             "CD53"             "S100A6"           "KLF2"
[37] "CD4"               "PTMA"            "JUN"              "CDC42"

```

```

[41] "FOS"           "SELL"          "RUNX1"         "EVL"
[45] "GRB2"          "HIF1A"         "CXCR4"         "PTEN"
[49] "IRF1"          "CD28"          "ZAP70"         "PTPN6"
[53] "SLC2A3"        "NFKB1"         "LCK"           "ORAI1"
[57] "PPP3CC"        "ICOS"          "CRIP1"         "CCR7"
[61] "STAT1"         "STAT3"         "IL4R"          "S100A4"
[65] "ITGB1"         "IRF2"          "CD40LG"        "VAV1"
[69] "AKT1"          "GSK3A"         "IL6ST"         "ITGA4"
[73] "PRKCQ"         "LY6E"          "TNFSF8"        "IFNAR2"
[77] "CD27"          "CXCL10"        "NRAS"          "NFATC1"
[81] "CCR3"          "PLCG1"         "TLN1"          "GSK3B"
[85] "TRAF5"         "S1PR1"         "MALAT1"        "PML"
[89] "MAPK3"         "IL12RB1"       "CD40"          "IFIT3"
[93] "RAC1"          "CTLA4"         "FOXO1"         "BCL2"
[97] "IFNAR1"        "IFIT1"         "IFI44"         "DPP4"
[101] "LAT"           "RGS1"          "TXK"           "CXCR3"
[105] "CCR6"          "IL25"          "ICAM1"         "SREBF1"
[109] "PRDM1"         "MAF"           "IRF9"          "JAK2"
[113] "ID2"           "MAPK1"         "ZEB2"          "STAT4"
[117] "LGALS1"        "TNF"           "NKG7"          "SOCS3"
[121] "SLC2A1"        "CD200R1"       "GATA3"         "TNFRSF1B"
[125] "MTOR"          "TNFRSF1A"     "PI3"           "CBLB"
[129] "FAS"            "DNM1L"          "IRF7"          "NLRP3"
[133] "KRAS"          "RICTOR"        "BCL6"          "CCR4"
[137] "TYK2"          "NR4A1"         "IL2RA"         "AKT1S1"
[141] "STMN1"         "TRAF3IP2"      "HLA-DRA"       "HLA-DQB1"
[145] "IFNGR1"        "CCR2"          "PIK3CA"        "ISG15"
[149] "TRAF2"          "MYC"           "PPARA"         "ZBTB16"
[153] "IRF4"          "MYB"           "IKZF2"         "IFI44L"
[157] "HRAS"          "CCL5"          "RPTOR"         "CD200"
[161] "BIRC5"          "TNFRSF9"       "MAPK8"         "FAIM2"
[165] "TIGIT"          "AIM2"          "TBX21"         "LAG3"
[169] "IFNG"          "C5"           "HAVCR2"        "FOXP3"
[173] "RORC"          "CD274"         "ITGA1"         "C3"
[177] "CCR1"          "TNFRSF18"      "CD8A"          "IL7"
[181] "IL21"           "TNFRSF4"       "IL5RA"         "PPARG"
[185] "PDCD1"          "CCR5"          "IL4"           "IL10"
[189] "IL2"            "CXCR6"         "IL3"           "IL17A"
[193] "CXCL9"          "IL5"           "IZUMO1R"       "LYPD6"
[197] "PPARGC1A"       "PRKAA2"        "age"           "patient"
[1] "The values in lenghtofkmeans 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 laoded into idCols: 9 which corresponds to column kmeans.cluster. The last column name is: patient"
[1] "cellSource"      "probe"         "age"           "patient"
[5] "SPA"             "SPAM"          "SPAMcell"      "cellType"
[9] "kmeans.cluster" "CD44"          "BTG1"          "CD48"
[13] "B2M"            "RPL13A"        "CD69"          "CD52"
[17] "RAC2"           "CD3E"          "STAT5B"        "CALM1"
[21] "JAK1"           "PTPRC"         "TNFAIP3"       "FYN"
[25] "IL7R"           "ARPC2"         "LEF1"          "ITK"
[29] "TCF7"           "TMSB10"        "GAPDH"         "RAP1A"
[33] "TGFB2"          "CD53"          "S100A6"        "KLF2"
[37] "CD4"            "PTMA"          "JUN"           "CDC42"

```

```

[41] "FOS"           "SELL"          "RUNX1"         "EVL"
[45] "GRB2"          "HIF1A"         "CXCR4"         "PTEN"
[49] "IRF1"          "CD28"          "ZAP70"         "PTPN6"
[53] "SLC2A3"        "NFKB1"         "LCK"           "ORAI1"
[57] "PPP3CC"        "ICOS"          "CRIP1"         "CCR7"
[61] "STAT1"         "STAT3"         "IL4R"          "S100A4"
[65] "ITGB1"         "IRF2"          "CD40LG"        "VAV1"
[69] "AKT1"          "GSK3A"         "IL6ST"         "ITGA4"
[73] "PRKCQ"         "LY6E"          "TNFSF8"        "IFNAR2"
[77] "CD27"          "CXCL10"        "NRAS"          "NFATC1"
[81] "CCR3"          "PLCG1"         "TLN1"          "GSK3B"
[85] "TRAF5"         "S1PR1"         "MALAT1"        "PML"
[89] "MAPK3"         "IL12RB1"       "CD40"          "IFIT3"
[93] "RAC1"          "CTLA4"         "FOXO1"         "BCL2"
[97] "IFNAR1"        "IFIT1"         "IFI44"         "DPP4"
[101] "LAT"           "RGS1"          "TXK"           "CXCR3"
[105] "CCR6"          "IL25"          "ICAM1"         "SREBF1"
[109] "PRDM1"         "MAF"           "IRF9"          "JAK2"
[113] "ID2"           "MAPK1"         "ZEB2"          "STAT4"
[117] "LGALS1"        "TNF"           "NKG7"          "SOCS3"
[121] "SLC2A1"        "CD200R1"       "GATA3"         "TNFRSF1B"
[125] "MTOR"          "TNFRSF1A"     "PI3"           "CBLB"
[129] "FAS"            "DNM1L"          "IRF7"          "NLRP3"
[133] "KRAS"          "RICTOR"        "BCL6"          "CCR4"
[137] "TYK2"          "NR4A1"         "IL2RA"         "AKT1S1"
[141] "STMN1"         "TRAF3IP2"      "HLA-DRA"       "HLA-DQB1"
[145] "IFNGR1"        "CCR2"          "PIK3CA"        "ISG15"
[149] "TRAF2"          "MYC"           "PPARA"         "ZBTB16"
[153] "IRF4"          "MYB"           "IKZF2"         "IFI44L"
[157] "HRAS"          "CCL5"          "RPTOR"         "CD200"
[161] "BIRC5"          "TNFRSF9"       "MAPK8"         "FAIM2"
[165] "TIGIT"          "AIM2"          "TBX21"         "LAG3"
[169] "IFNG"          "C5"           "HAVCR2"        "FOXP3"
[173] "RORC"          "CD274"         "ITGA1"         "C3"
[177] "CCR1"          "TNFRSF18"      "CD8A"          "IL7"
[181] "IL21"           "TNFRSF4"       "IL5RA"         "PPARG"
[185] "PDCD1"          "CCR5"          "IL4"           "IL10"
[189] "IL2"            "CXCR6"         "IL3"           "IL17A"
[193] "CXCL9"          "IL5"           "IZUMO1R"       "LYPD6"
[197] "PPARGC1A"       "PRKAA2"        "PRKAA2"        "PRKAA2

[1]   1   2   3   7  10   8   11   6  23   4   24   9  17   13   5  15   16   19
[19]  18  27  12  33  25  21  14  20  28  35  34  22  37  30  42  36  32  39
[37]  43  47  44  41  54  49  46  48  45  57  52  26  58  29  60  59  61  40
[55]  31  55  64  66  67  63  38  70  53  71  56  79  80  76  65  75  50  88
[73]  86  62  91  81  99  94  93 107  51  73 113 116 122 114  68 121 119 125
[91] 131 117 120 133  74  92 132 108  87 139 141 130 128 140 104 115 137 144
[109] 142 150 143 145  77 124 138 146 156 151  69  84 123 154 161 160 126 158
[127] 153 162 127 105 163 165 149 166 155  78 135 129 118 136  82  98 157 170
[145] 147 101 100 152 164 102 106 173  95 111 148 168 177 167  96 171 159 109
[163]  72 172  89 103 110 183 181 182  97  90 134 169 179 174 176 180 178  85
[181]  83 175 112 184 185 186 187 188 189

[1] "Length of pvals is 189"
uniqueAges    colorsList
"blood" "deepskyblue2"

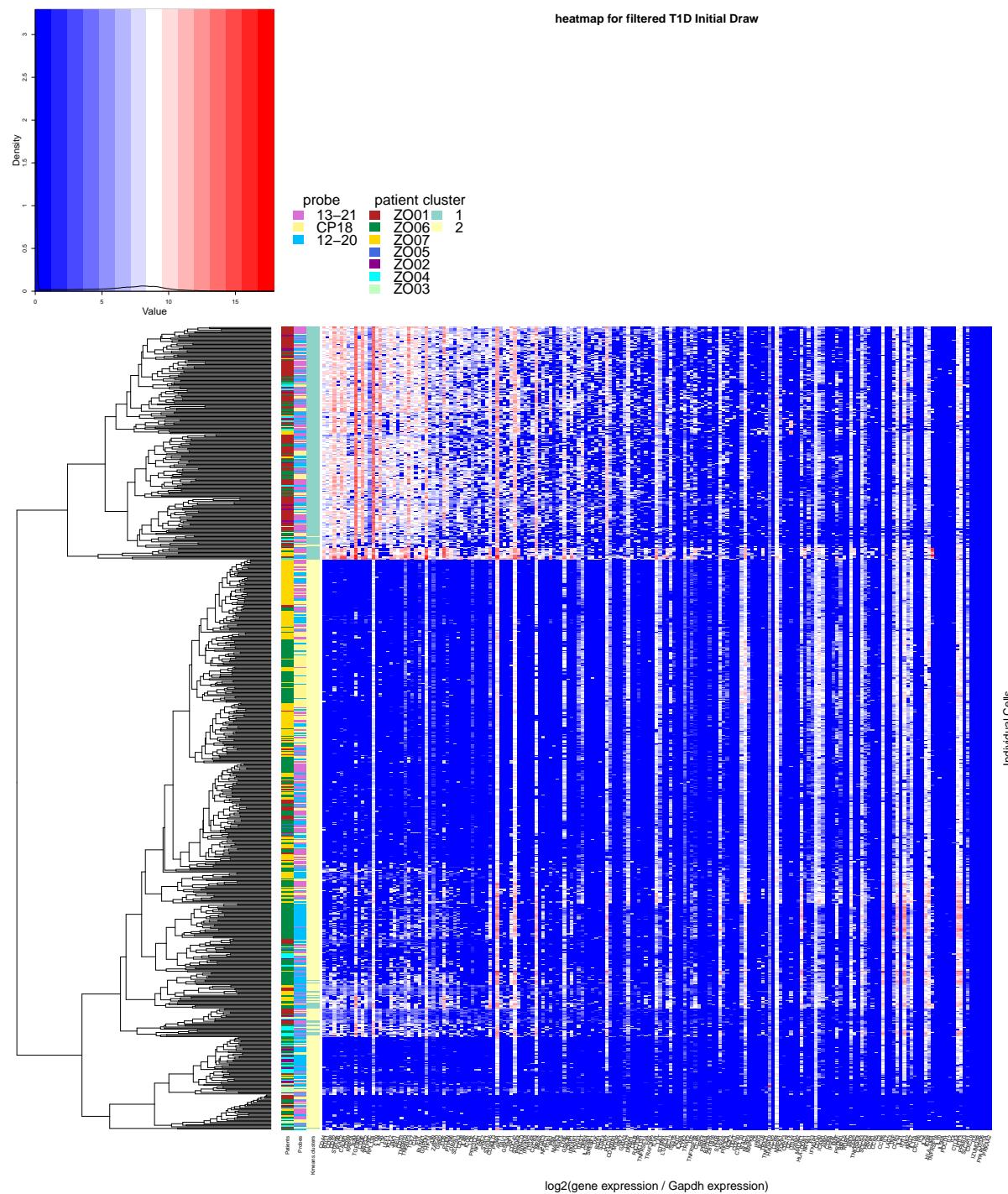
```

```

[,1]      [,2]
[1,] "blood" "deepskyblue2"
uniqueSources   colorsList
  "blood"      "blue3"
[1] "cellSource"      "probe"      "age"      "patient"
[5] "SPA"           "SPAM"       "SPAMcell" "cellType"
[9] "kmeans.cluster" "CD44"       "BTG1"     "CD48"
[13] "CD52"          "STAT5B"     "RAC2"     "CALM1"
[17] "CD69"          "RAP1A"      "B2M"      "TGFBR2"
[21] "CD3E"          "ARPC2"     "PTPRC"    "RPL13A"
[25] "FYN"           "IL7R"       "ITK"      "LEF1"
[29] "KLF2"          "JAK1"       "SELL"     "CD53"
[33] "TMSB10"        "TNFAIP3"    "TCF7"     "CD4"
[37] "EVL"           "RUNX1"      "GAPDH"    "HIF1A"
[41] "JUN"           "ZAP70"      "GRB2"     "FOS"
[45] "PTEN"          "PTPN6"      "ORAI1"    "SLC2A3"
[49] "CD28"          "IL4R"       "ICOS"     "LCK"
[53] "PPP3CC"        "NFKB1"      "IRF2"     "STAT1"
[57] "S100A6"        "CD40LG"     "PTMA"     "AKT1"
[61] "VAV1"          "GSK3A"      "IRF1"     "CDC42"
[65] "S100A4"        "PRKCQ"      "TNFSF8"   "IFNAR2"
[69] "ITGA4"         "CXCR4"      "NRAS"     "STAT3"
[73] "NFATC1"        "ITGB1"      "PML"      "MAPK3"
[77] "TRAF5"         "LY6E"       "GSK3B"    "CRIP1"
[81] "IFNAR1"        "FOXO1"      "IL6ST"    "DPP4"
[85] "IL12RB1"       "SREBF1"     "TXK"      "RGS1"
[89] "STAT4"         "CCR7"       "PLCG1"    "CD200R1"
[93] "MTOR"          "IRF7"       "GATA3"    "CD27"
[97] "DNM1L"         "CBLB"       "RICTOR"   "AKT1S1"
[101] "TNFRSF1A"     "FAS"        "TRAF3IP2" "TLN1"
[105] "LAT"           "STMN1"      "LGALS1"   "BCL2"
[109] "ISG15"         "MYC"        "IL2RA"    "TYK2"
[113] "TRAF2"         "ID2"        "TNFRSF1B" "CCR2"
[117] "IRF4"          "PPARA"      "RPTOR"    "ZBTB16"
[121] "MYB"           "S1PR1"      "KRAS"     "PIK3CA"
[125] "IKZF2"         "TIGIT"      "CD200"    "CXCL10"
[129] "RAC1"          "NLRP3"      "MAPK8"    "C5"
[133] "IFNG"          "BCL6"       "TBX21"    "TNFRSF9"
[137] "HAVCR2"        "CCR4"       "MAPK1"    "FOXP3"
[141] "CD274"         "CCL5"       "ITGA1"    "FAIM2"
[145] "MALAT1"        "HLA-DQB1"   "NR4A1"    "PI3"
[149] "IFNGR1"        "CD40"       "ICAM1"    "AIM2"
[153] "CD8A"          "IFI44L"     "MAF"      "PRDM1"
[157] "BIRC5"         "RORC"      "IRF9"     "ZEB2"
[161] "TNFRSF4"       "CXCR3"     "SOCS3"    "HRAS"
[165] "CCR1"          "CCR5"       "C3"       "CCR6"
[169] "IL7"            "LAG3"       "TNF"      "CCR3"
[173] "IL21"          "IFIT1"      "JAK2"     "NKG7"
[177] "IL17A"         "CXCR6"     "IL3"      "IL25"
[181] "IFI44"         "HLA-DRA"   "TNFRSF18" "IL10"
[185] "IL5RA"         "PDCD1"     "IL2"      "IL4"
[189] "CTLA4"         "IFIT3"     "PPARG"    "SLC2A1"
[193] "CXCL9"         "IL5"        "IZUMO1R"  "LYPD6"
[197] "PPARGC1A"      "PRKAA2"

```

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



```
[1]
```

```
[1]
```

```
[1] Probe vs. Cluster
```

```
  probe_13-21 probe_CP18 probe_12-20
```

cluster_1	108	51	79
cluster_2	160	167	191

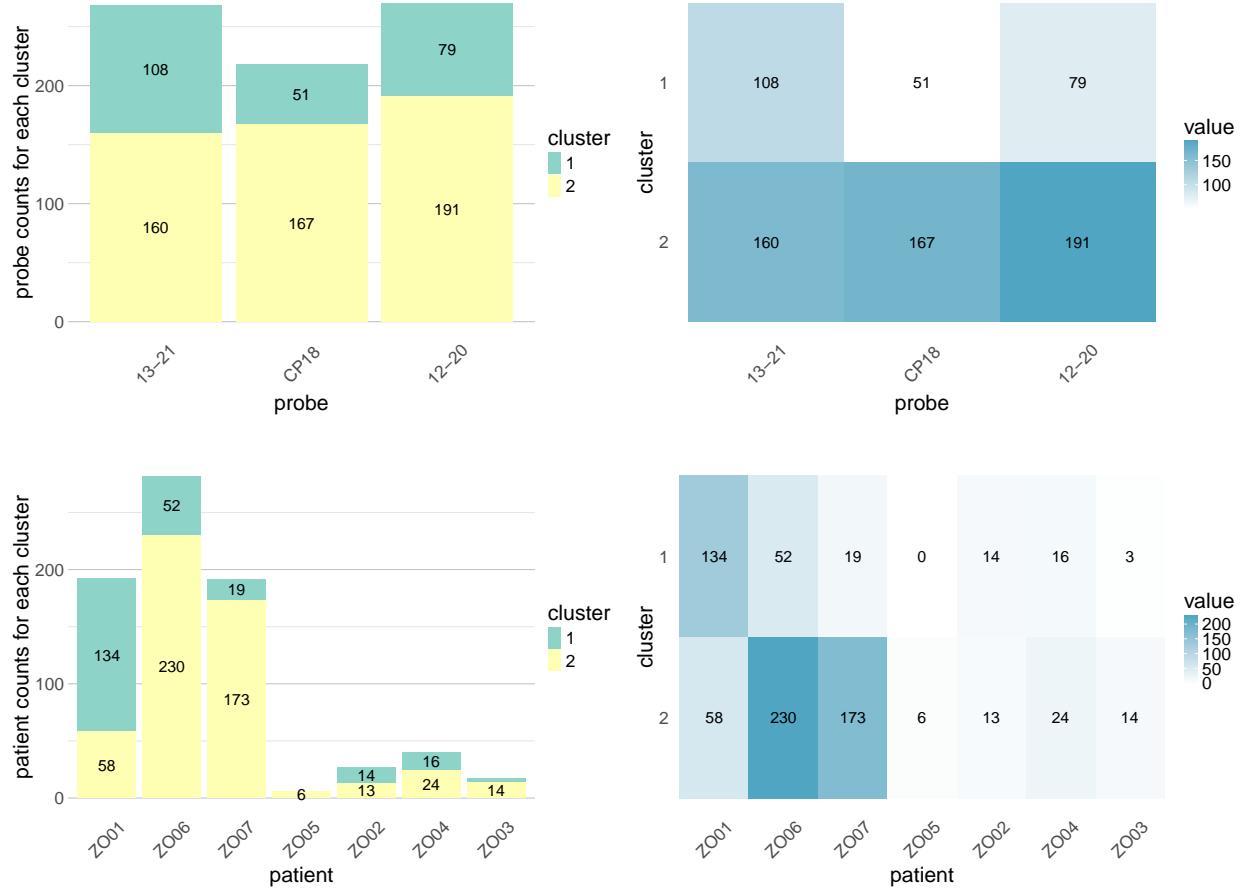
```
Pearson's Chi-squared test with simulated p-value (based on 2000  
replicates)
```

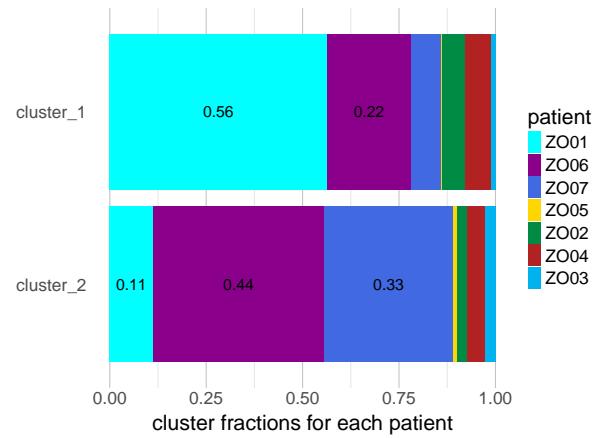
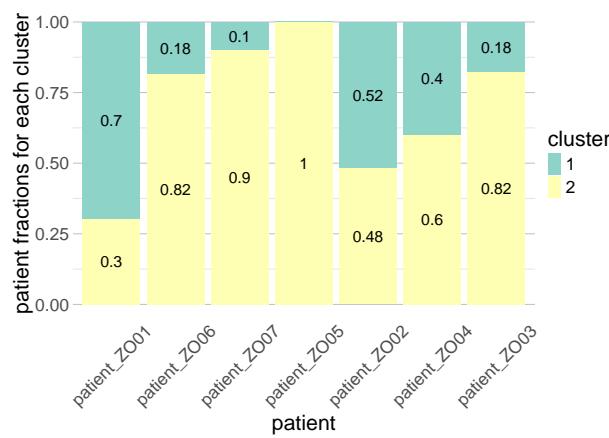
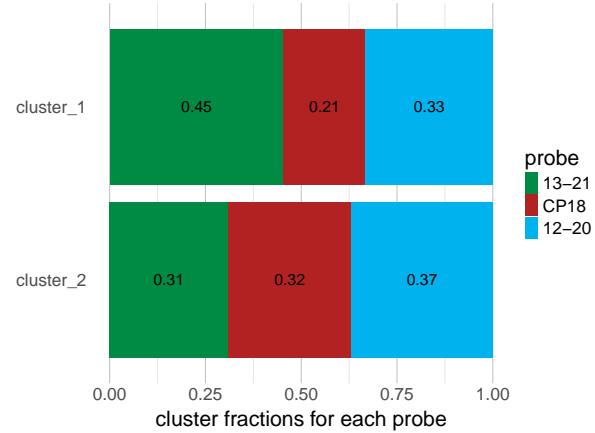
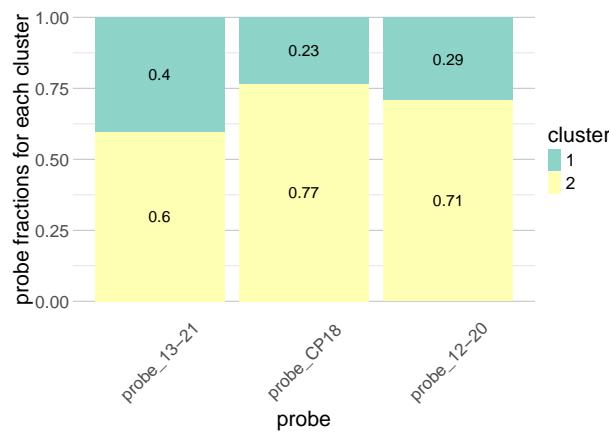
```
data: probeTable  
X-squared = 16.886, df = NA, p-value = 0.0004998
```

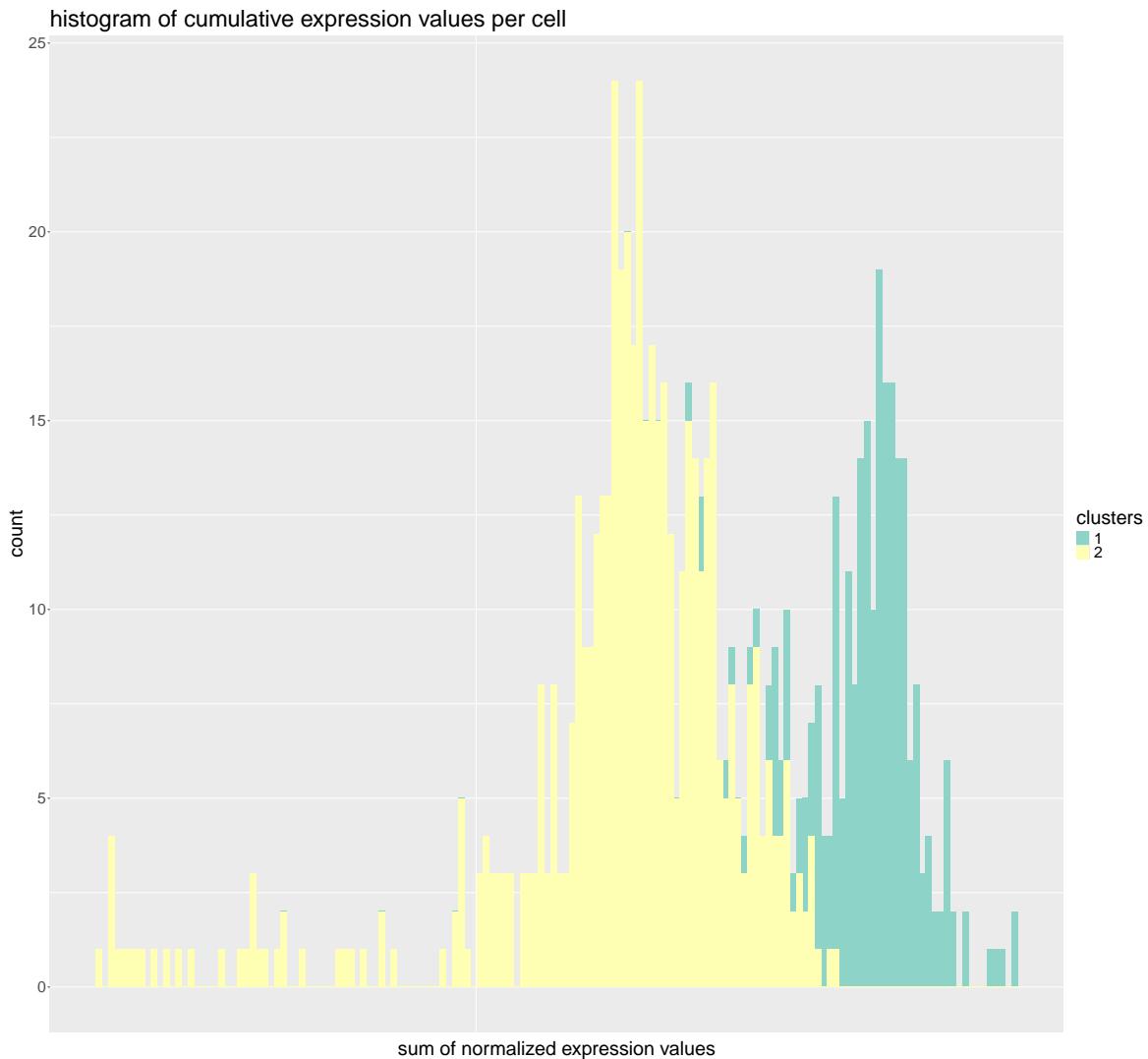
```
Patient vs. Cluster  
      patient_Z001 patient_Z006 patient_Z007 patient_Z005 patient_Z002  
cluster_1          134           52           19            0           14  
cluster_2          58            230          173            6           13  
      patient_Z004 patient_Z003  
cluster_1          16            3  
cluster_2          24           14
```

```
Pearson's Chi-squared test with simulated p-value (based on 2000  
replicates)
```

```
data: patientTable  
X-squared = 205.15, df = NA, p-value = 0.0004998
```



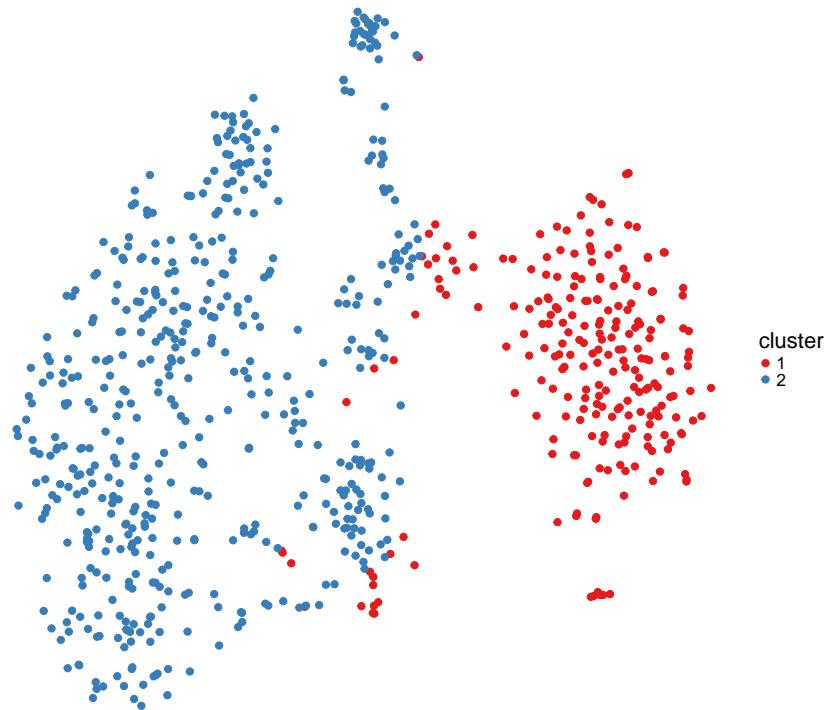




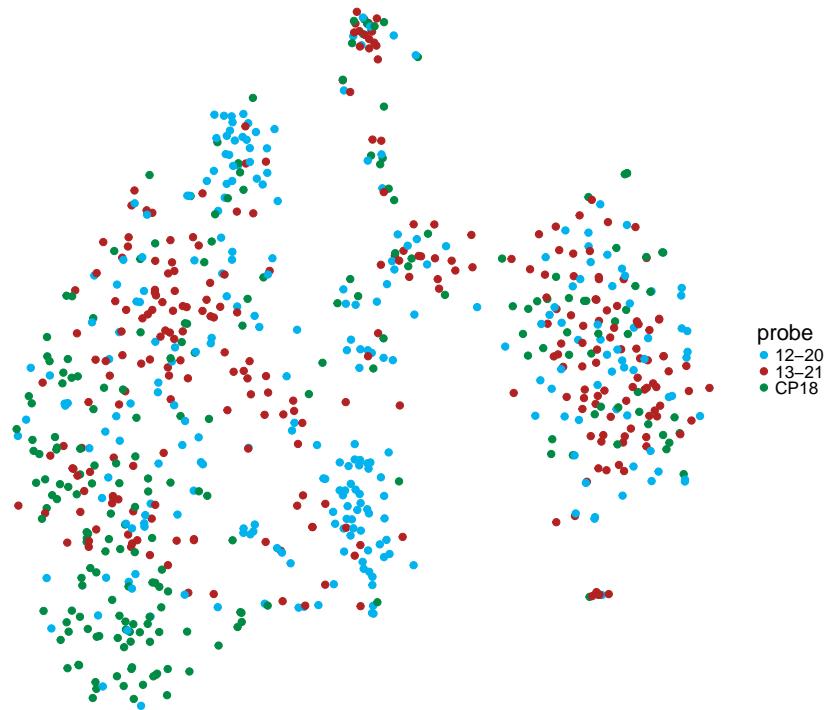
```
#### t-sne reports ####
###This function has been updated from LG's original. The colorby vector can take the following options

ctClust <- plotTSNE(ctClust, colorby = c("kmeans.cluster", "probe", "patient" , "Gene_List"), Genes = c
```

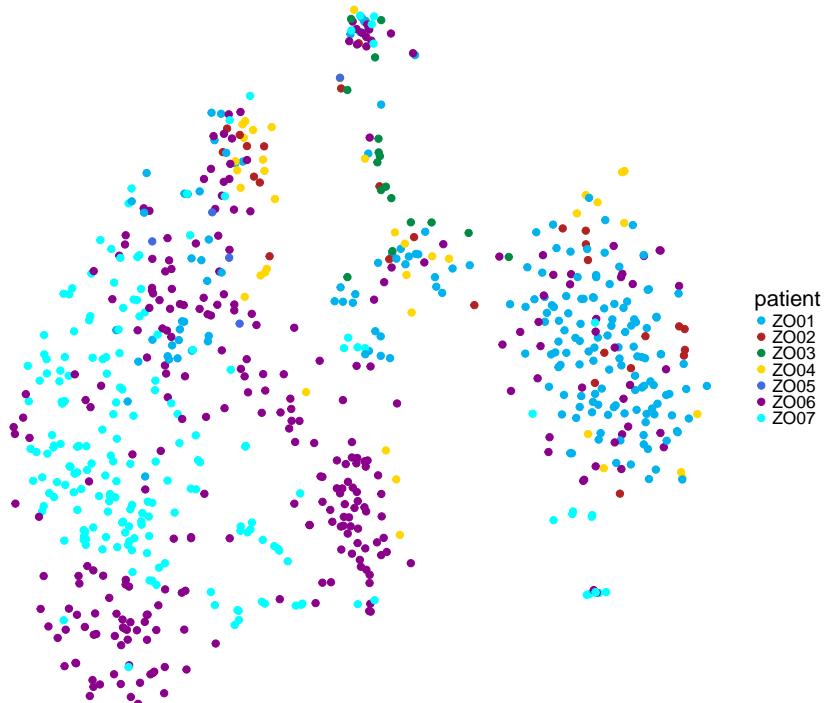
t-SNE between tissues (colored by kmeans.cluster)



t-SNE between tissues (colored by probe)



t-SNE colored by patient



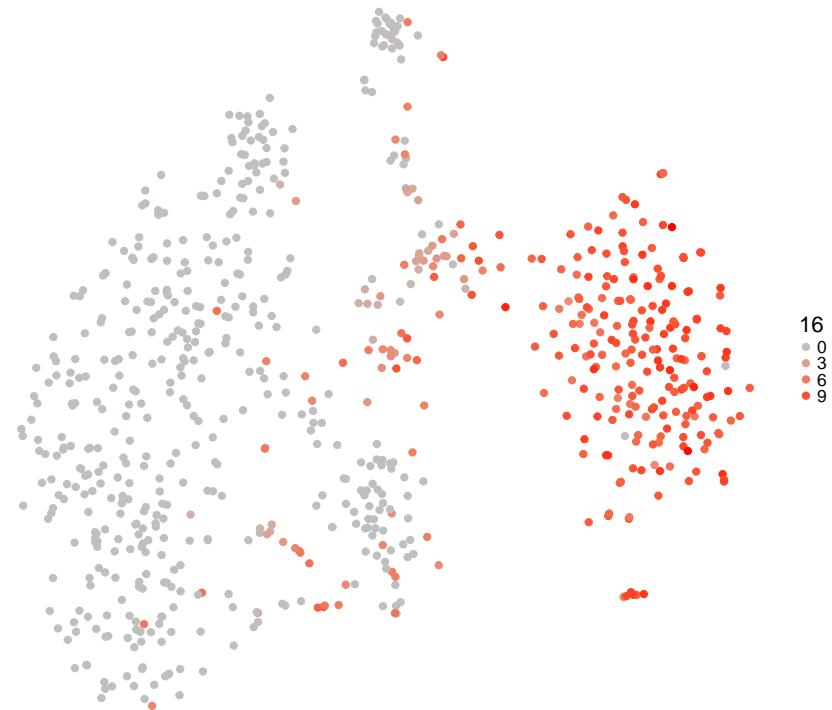
```
[1] "AIM2"      "B2M"       "BCL2"      "BCL6"      "C3"        "C5"        "C5"
[7] "CCR1"      "CCR2"      "CCR3"      "CCR4"      "CCR5"      "CCR6"      "CCR6"
[13] "CCR7"      "CD274"     "CD28"      "CD3E"      "CD4"       "CD40"      "CD40"
[19] "CD44"      "CD52"      "CD53"      "CD8A"      "CDC42"     "CTLA4"     "CTLA4"
[25] "CXCL10"    "CXCL9"     "CXCR3"     "CXCR4"     "FOXP3"     "FYN"       "FYN"
[31] "GAPDH"     "GATA3"     "GSK3A"     "GSK3B"     "HLA-DRA"   "ICAM1"     "ICAM1"
[37] "ICOS"       "IFI44"     "IFI44L"     "IFIT1"     "IFIT3"     "IFNAR1"    "IFNAR1"
[43] "IFNAR2"    "IFNG"      "IFNGR1"    "IL10"      "IL12RB1"   "IL17A"     "IL17A"
```

[49]	"IL2"	"IL21"	"IL25"	"IL2RA"	"IL3"	"IL4"
[55]	"IL4R"	"IL5"	"IL5RA"	"IL7"	"IL7R"	"IRF1"
[61]	"IRF2"	"IRF4"	"IRF7"	"IRF9"	"ISG15"	"JAK1"
[67]	"JAK2"	"LY6E"	"NFKB1"	"NLRP3"	"NR4A1"	"PDCD1"
[73]	"PPARA"	"PPARG"	"PPARGC1A"	"PTEN"	"RAC1"	"RAC2"
[79]	"RORC"	"RPL13A"	"SOCS3"	"STAT1"	"STAT3"	"STAT4"
[85]	"STAT5B"	"TBX21"	"TGFBR2"	"TNF"	"TNFAIP3"	"TNFRSF1A"
[91]	"TNFRSF1B"	"TRAF2"	"TYK2"	"VAV1"	"ZAP70"	"ZEB2"
[97]	"AKT1"	"AKT1S1"	"ARPC2"	"BIRC5"	"BTG1"	"CALM1"
[103]	"CBLB"	"CCL5"	"CD200"	"CD200R1"	"CD27"	"CD40LG"
[109]	"CD48"	"CD69"	"CRIP1"	"CXCR6"	"DNM1L"	"DPP4"
[115]	"EVL"	"FAIM2"	"FAS"	"FOS"	"FOXO1"	"FOXP3"
[121]	"GATA3"	"GRB2"	"HAVCR2"	"HIF1A"	"HLA-DQB1"	"HRAS"
[127]	"ID2"	"IKZF2"	"IL6ST"	"IL7R"	"ITGA1"	"ITGA4"
[133]	"ITGB1"	"ITK"	"IZUMO1R"	"JUN"	"KLF2"	"KRAS"
[139]	"LAG3"	"LAT"	"LCK"	"LEF1"	"LGALS1"	"LYPD6"
[145]	"MAF"	"MALAT1"	"MAPK1"	"MAPK3"	"MAPK8"	"MTOR"
[151]	"MYB"	"MYC"	"NFATC1"	"NKG7"	"NRAS"	"ORAI1"
[157]	"PI3"	"PIK3CA"	"PLCG1"	"PML"	"PPP3CC"	"PRDM1"
[163]	"PRKAA2"	"PRKCQ"	"PTMA"	"PTPN6"	"PTPRC"	"RAP1A"
[169]	"RGS1"	"RICTOR"	"RPTOR"	"RUNX1"	"S100A4"	"S100A6"
[175]	"S1PR1"	"SELL"	"SLC2A1"	"SLC2A3"	"SREBF1"	"STMN1"
[181]	"TCF7"	"TIGIT"	"TLN1"	"TMSB10"	"TNFRSF18"	"TNFRSF4"
[187]	"TNFRSF9"	"TNFSF8"	"TRAF3IP2"	"TRAF5"	"TXK"	"ZBTB16"

t-SNE colored by CD44 expression



t-SNE colored by BTG1 expression



t-SNE colored by CD48 expression



t-SNE colored by CD52 expression



t-SNE colored by STAT5B expression



t-SNE colored by RAC2 expression



t-SNE colored by CALM1 expression



t-SNE colored by CD69 expression



t-SNE colored by RAP1A expression



t-SNE colored by B2M expression



t-SNE colored by TGFBR2 expression



t-SNE colored by CD3E expression



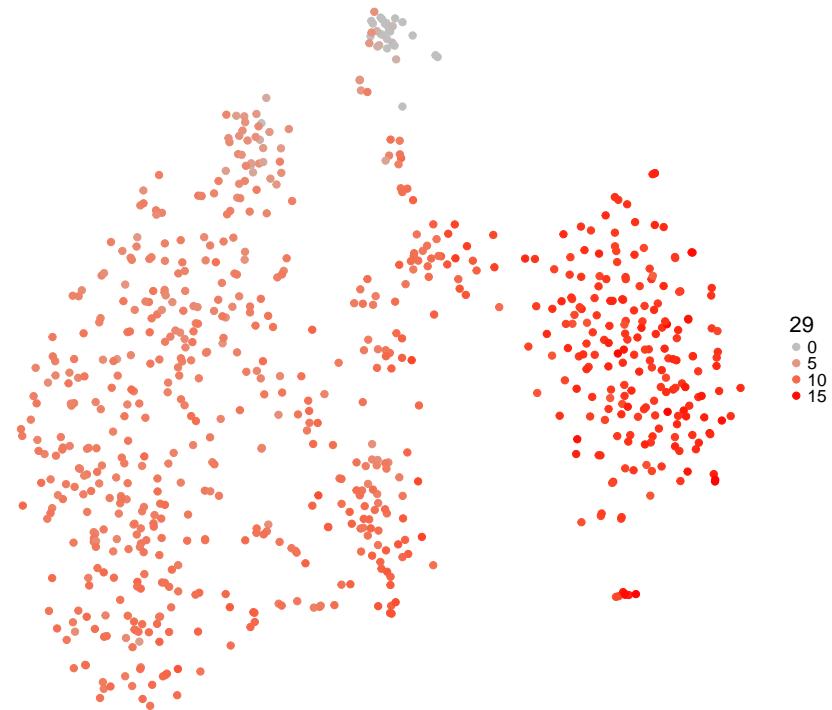
t-SNE colored by ARPC2 expression



t-SNE colored by PTPRC expression



t-SNE colored by RPL13A expression



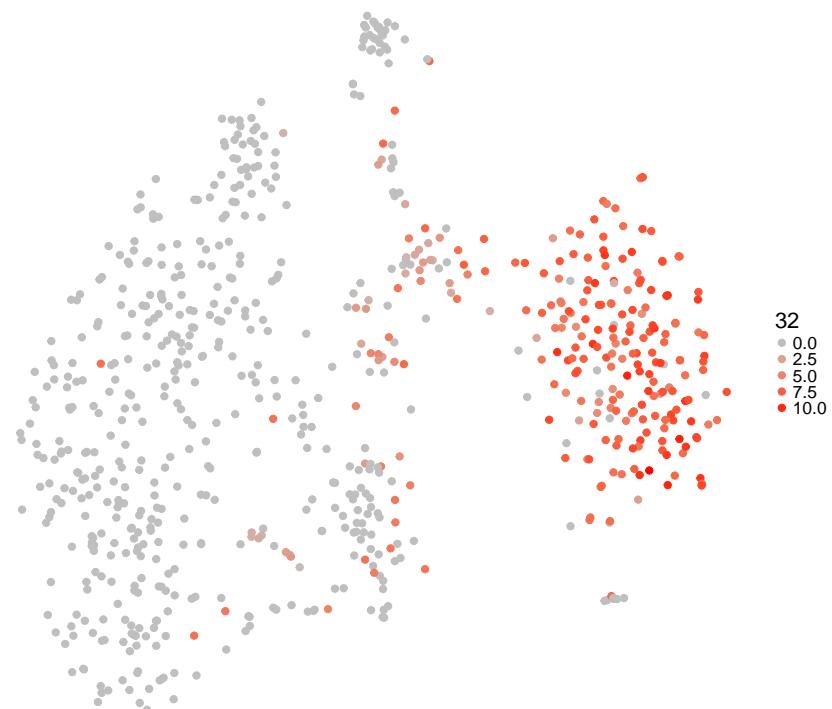
t-SNE colored by FYN expression



t-SNE colored by IL7R expression



t-SNE colored by ITK expression



t-SNE colored by LEF1 expression



t-SNE colored by KLF2 expression



t-SNE colored by JAK1 expression



t-SNE colored by SELL expression



t-SNE colored by CD53 expression



t-SNE colored by TMSB10 expression



t-SNE colored by TNFAIP3 expression



t-SNE colored by TCF7 expression



t-SNE colored by CD4 expression



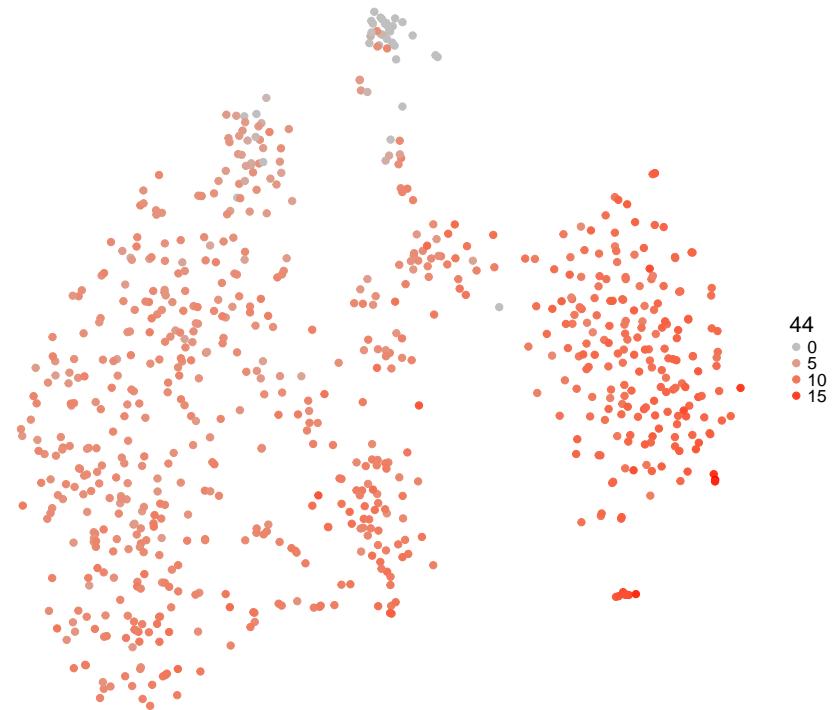
t-SNE colored by EVL expression



t-SNE colored by RUNX1 expression



t-SNE colored by GAPDH expression



t-SNE colored by HIF1A expression



t-SNE colored by JUN expression



t-SNE colored by ZAP70 expression



t-SNE colored by GRB2 expression



t-SNE colored by FOS expression



t-SNE colored by PTEN expression



t-SNE colored by PTPN6 expression



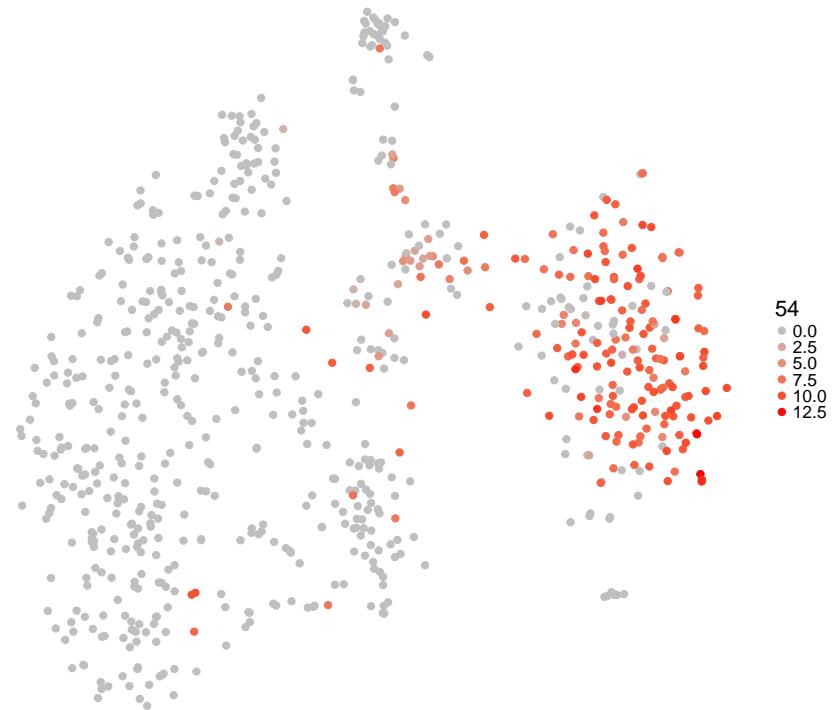
t-SNE colored by ORAI1 expression



t-SNE colored by SLC2A3 expression



t-SNE colored by CD28 expression



t-SNE colored by IL4R expression



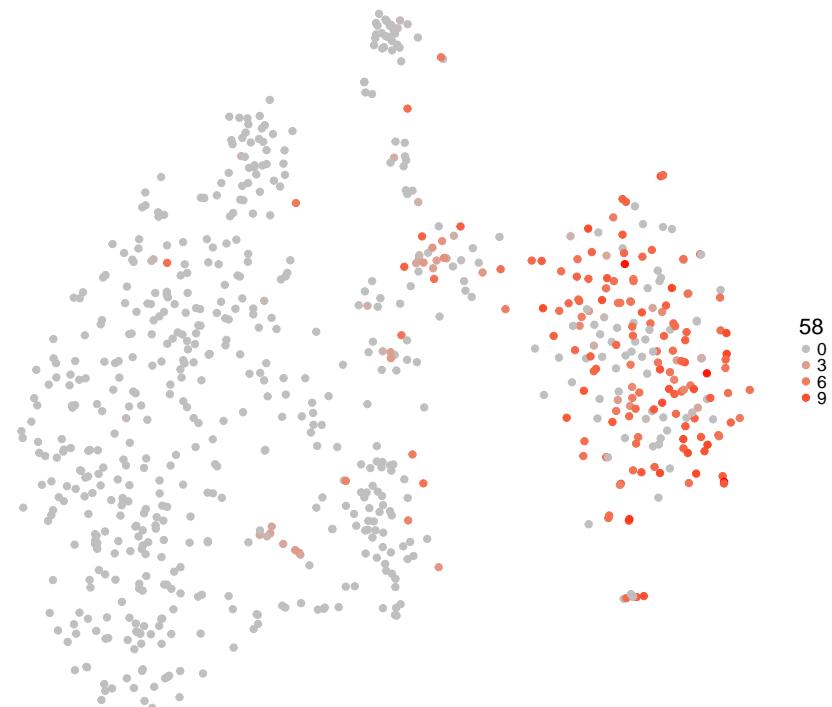
t-SNE colored by ICOS expression



t-SNE colored by LCK expression



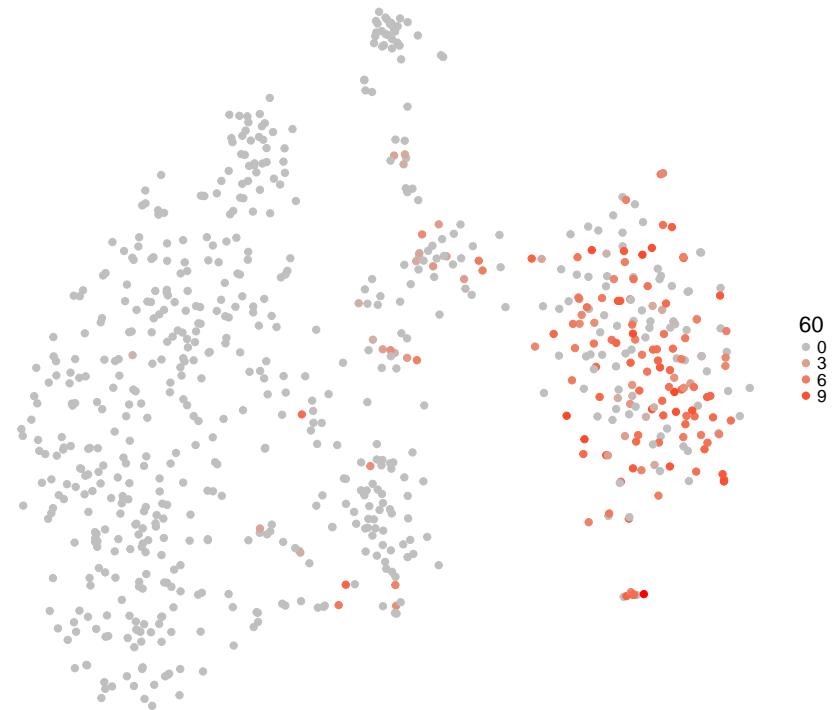
t-SNE colored by PPP3CC expression



t-SNE colored by NFKB1 expression



t-SNE colored by IRF2 expression



t-SNE colored by STAT1 expression



t-SNE colored by S100A6 expression



t-SNE colored by CD40LG expression



t-SNE colored by PTMA expression



t-SNE colored by AKT1 expression



t-SNE colored by VAV1 expression



t-SNE colored by GSK3A expression



t-SNE colored by IRF1 expression



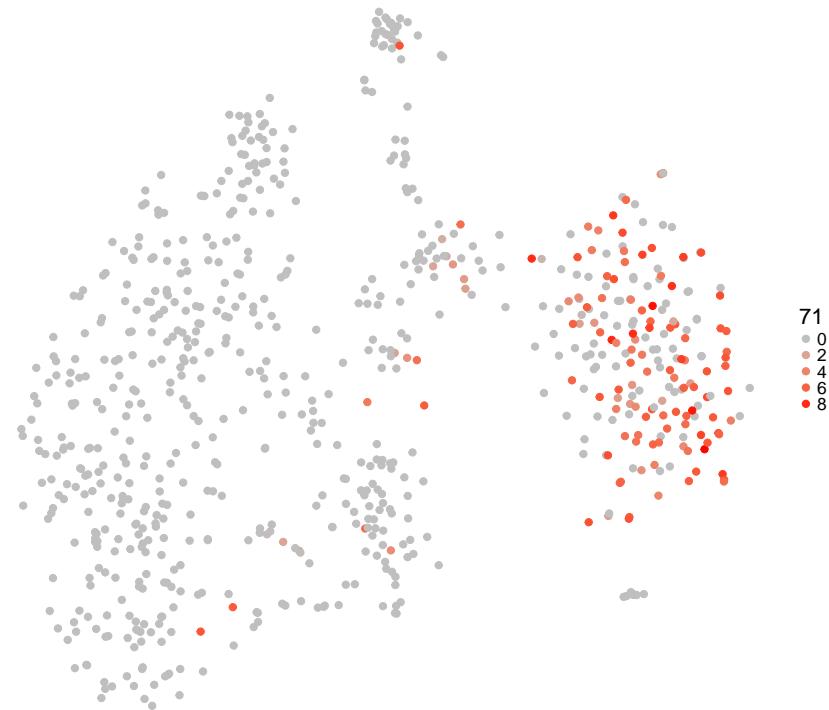
t-SNE colored by CDC42 expression



t-SNE colored by S100A4 expression



t-SNE colored by PRKCQ expression



t-SNE colored by TNFSF8 expression



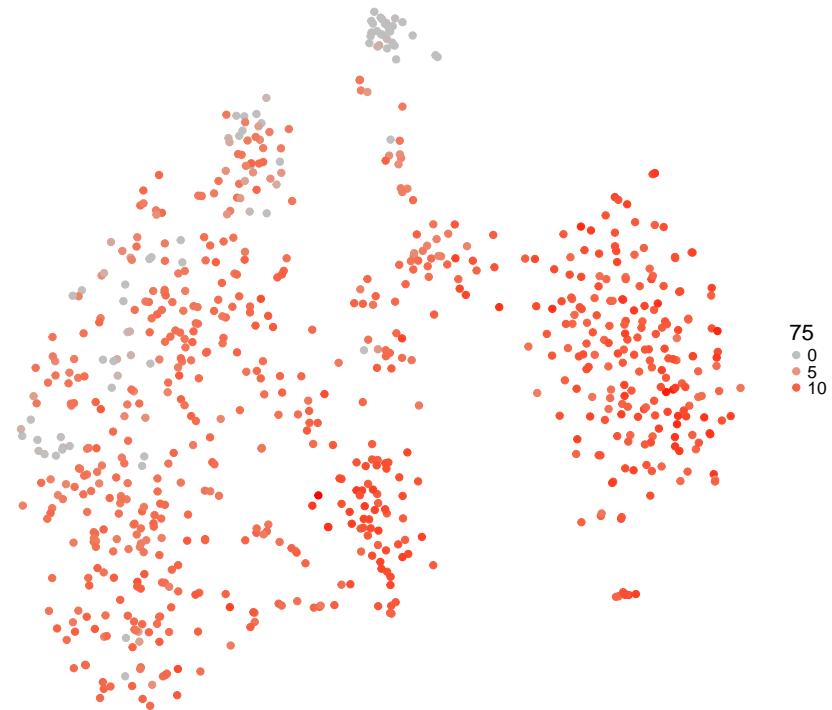
t-SNE colored by IFNAR2 expression



t-SNE colored by ITGA4 expression



t-SNE colored by CXCR4 expression



t-SNE colored by NRAS expression



t-SNE colored by STAT3 expression



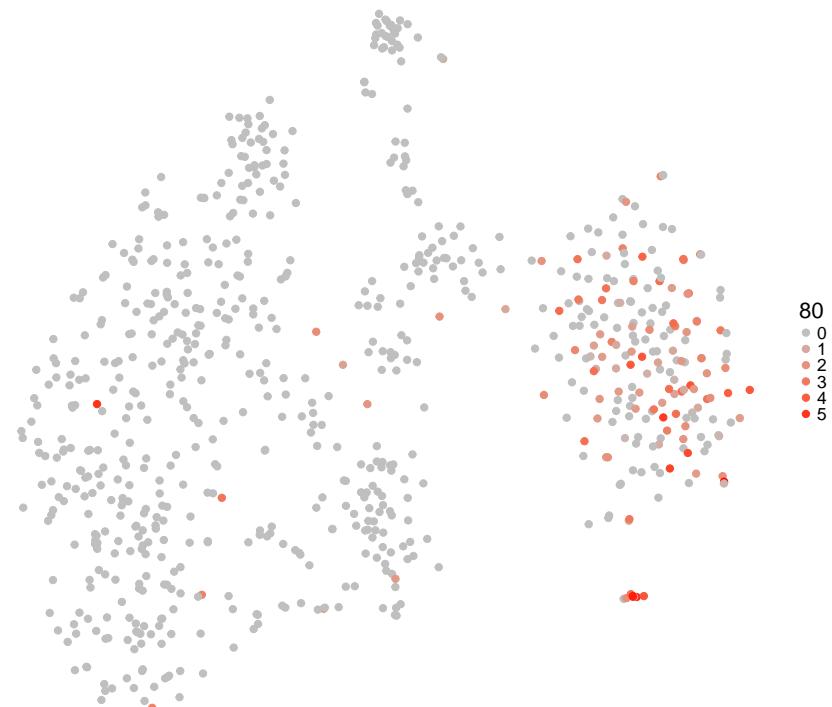
t-SNE colored by NFATC1 expression



t-SNE colored by ITGB1 expression



t-SNE colored by PML expression



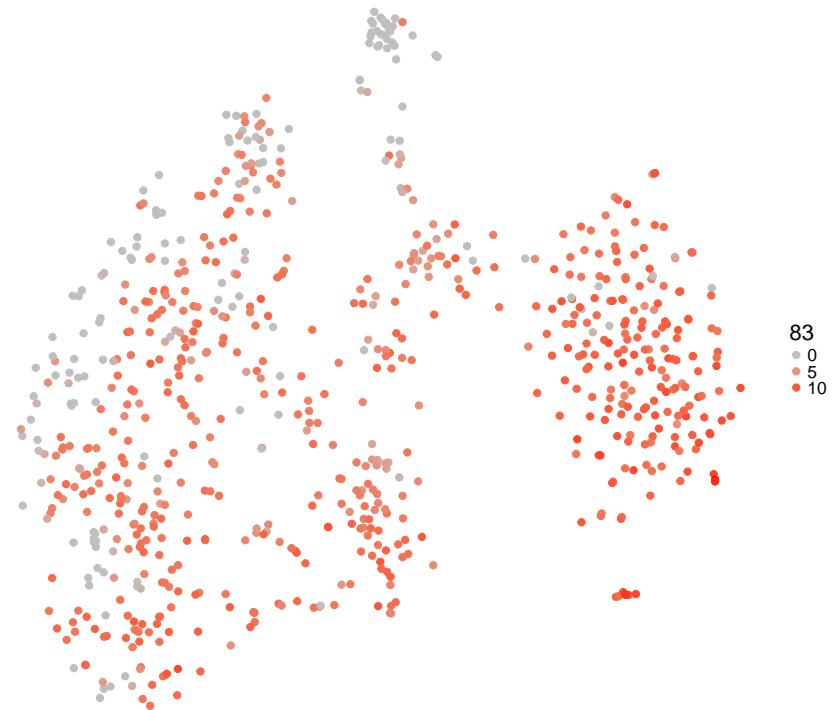
t-SNE colored by MAPK3 expression



t-SNE colored by TRAF5 expression



t-SNE colored by LY6E expression



t-SNE colored by GSK3B expression



t-SNE colored by CRIP1 expression



t-SNE colored by IFNAR1 expression



t-SNE colored by FOXO1 expression



t-SNE colored by IL6ST expression



t-SNE colored by DPP4 expression



t-SNE colored by IL12RB1 expression



t-SNE colored by SREBF1 expression



t-SNE colored by TXK expression



t-SNE colored by RGS1 expression



t-SNE colored by STAT4 expression



t-SNE colored by CCR7 expression



t-SNE colored by PLCG1 expression



t-SNE colored by CD200R1 expression



t-SNE colored by MTOR expression



t-SNE colored by IRF7 expression



t-SNE colored by GATA3 expression



t-SNE colored by CD27 expression



t-SNE colored by DNM1L expression



t-SNE colored by CBLB expression



t-SNE colored by RICTOR expression



t-SNE colored by AKT1S1 expression



t-SNE colored by TNFRSF1A expression



t-SNE colored by FAS expression



t-SNE colored by TRAF3IP2 expression



t-SNE colored by TLN1 expression



t-SNE colored by LAT expression



t-SNE colored by STMN1 expression



t-SNE colored by LGALS1 expression



t-SNE colored by BCL2 expression



t-SNE colored by ISG15 expression



t-SNE colored by MYC expression



t-SNE colored by IL2RA expression



t-SNE colored by TYK2 expression



t-SNE colored by TRAF2 expression



t-SNE colored by ID2 expression



t-SNE colored by TNFRSF1B expression



t-SNE colored by CCR2 expression



t-SNE colored by IRF4 expression



t-SNE colored by PPARA expression



t-SNE colored by RPTOR expression



t-SNE colored by ZBTB16 expression



t-SNE colored by MYB expression



t-SNE colored by S1PR1 expression



t-SNE colored by KRAS expression



t-SNE colored by PIK3CA expression



t-SNE colored by IKZF2 expression



t-SNE colored by TIGIT expression



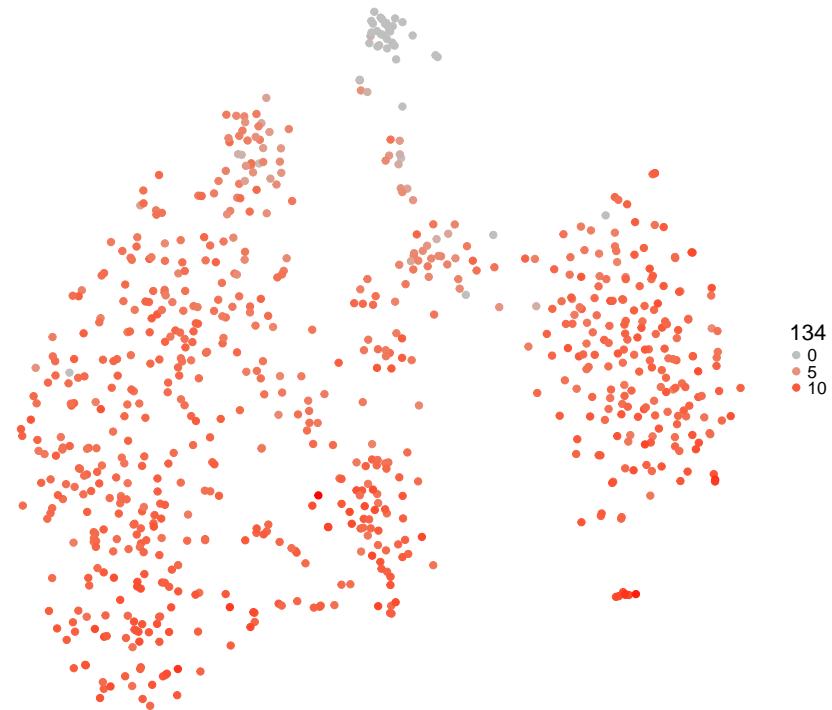
t-SNE colored by CD200 expression



t-SNE colored by CXCL10 expression



t-SNE colored by RAC1 expression



t-SNE colored by NLRP3 expression



t-SNE colored by MAPK8 expression



t-SNE colored by C5 expression



t-SNE colored by IFNG expression



t-SNE colored by BCL6 expression



t-SNE colored by TBX21 expression



t-SNE colored by TNFRSF9 expression



t-SNE colored by HAVCR2 expression



t-SNE colored by CCR4 expression



t-SNE colored by MAPK1 expression



t-SNE colored by FOXP3 expression



t-SNE colored by CD274 expression



t-SNE colored by CCL5 expression



t-SNE colored by ITGA1 expression



t-SNE colored by FAIM2 expression



t-SNE colored by MALAT1 expression



t-SNE colored by HLA-DQB1 expression



t-SNE colored by NR4A1 expression



t-SNE colored by PI3 expression



t-SNE colored by IFNGR1 expression



t-SNE colored by CD40 expression



t-SNE colored by ICAM1 expression



t-SNE colored by AIM2 expression



t-SNE colored by CD8A expression



t-SNE colored by IFI44L expression



t-SNE colored by MAF expression



t-SNE colored by PRDM1 expression



t-SNE colored by BIRC5 expression



t-SNE colored by RORC expression



t-SNE colored by IRF9 expression



t-SNE colored by ZEB2 expression



t-SNE colored by TNFRSF4 expression



t-SNE colored by CXCR3 expression



t-SNE colored by SOCS3 expression



t-SNE colored by HRAS expression



t-SNE colored by CCR1 expression



t-SNE colored by CCR5 expression



t-SNE colored by C3 expression



t-SNE colored by CCR6 expression



t-SNE colored by IL7 expression



t-SNE colored by LAG3 expression



t-SNE colored by TNF expression



t-SNE colored by CCR3 expression



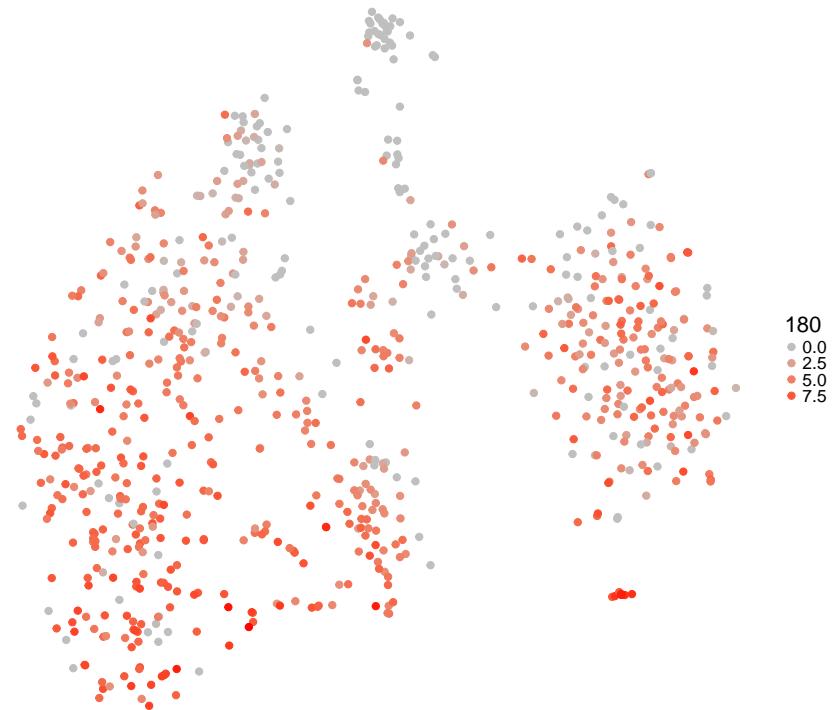
t-SNE colored by IL21 expression



t-SNE colored by IFIT1 expression



t-SNE colored by JAK2 expression



t-SNE colored by NKG7 expression



t-SNE colored by IL17A expression



t-SNE colored by CXCR6 expression



t-SNE colored by IL3 expression



t-SNE colored by IL25 expression



t-SNE colored by IFI44 expression



t-SNE colored by HLA-DRA expression



t-SNE colored by TNFRSF18 expression



t-SNE colored by IL10 expression



t-SNE colored by IL5RA expression



t-SNE colored by PDCD1 expression



t-SNE colored by IL2 expression



t-SNE colored by IL4 expression



t-SNE colored by CTLA4 expression



t-SNE colored by IFIT3 expression



t-SNE colored by PPARG expression

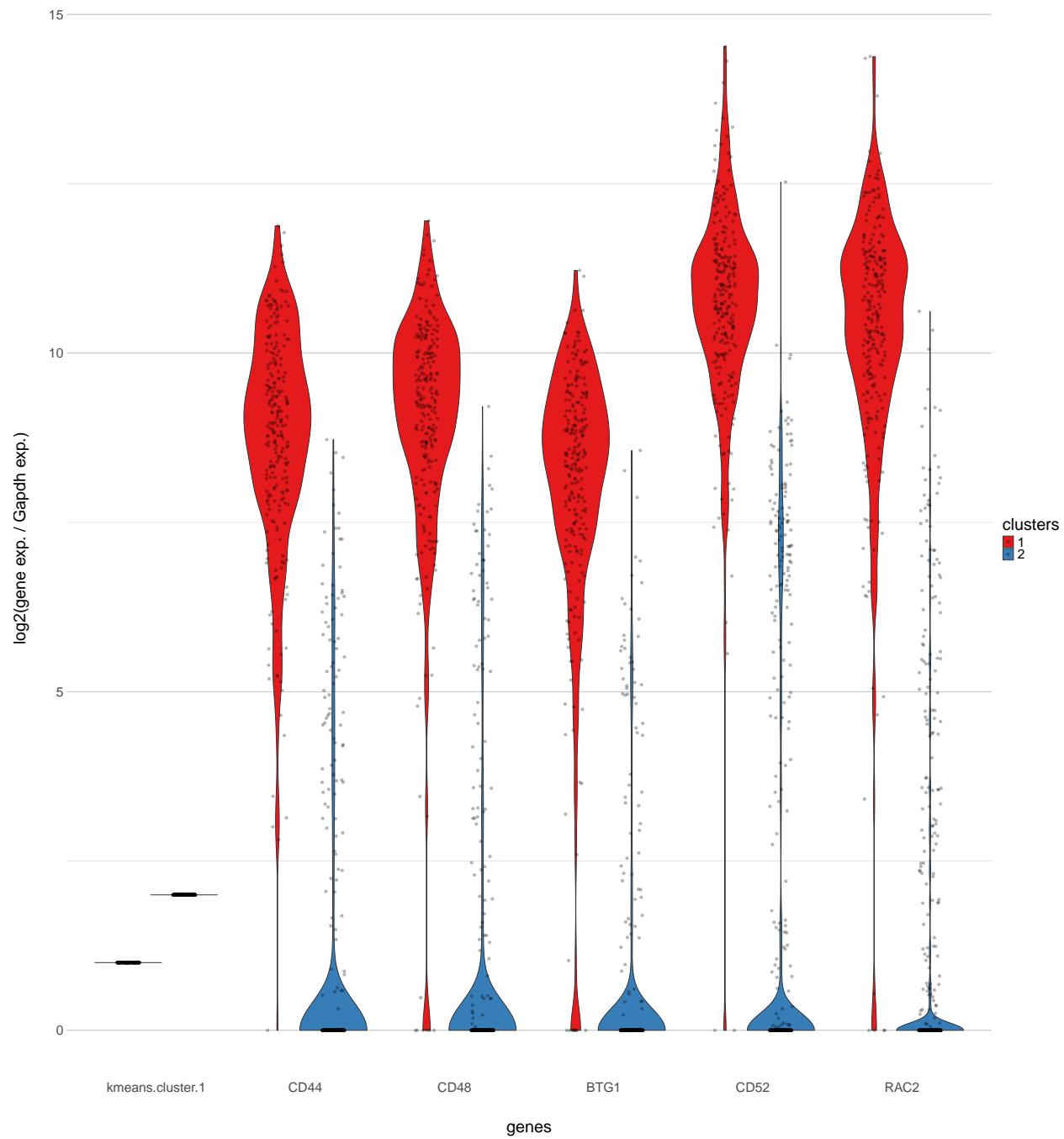


```
[1] Differentially expressed genes between clusters :  
[1] kmeans.cluster.1: 3.02e-164 CD44: 3.02e-164  
[3] CD48: 7.475e-122 BTG1: 1.015e-120  
[5] CD52: 2.687e-119 RAC2: 1.169e-112  
[7] STAT5B: 1.823e-111 CALM1: 3.646e-111  
[9] RAP1A: 4.547e-111 CD69: 3.162e-110  
[11] B2M: 2.789e-109 CD3E: 1.858e-108  
[13] TGFBR2: 2.354e-107 ARPC2: 1.648e-105
```

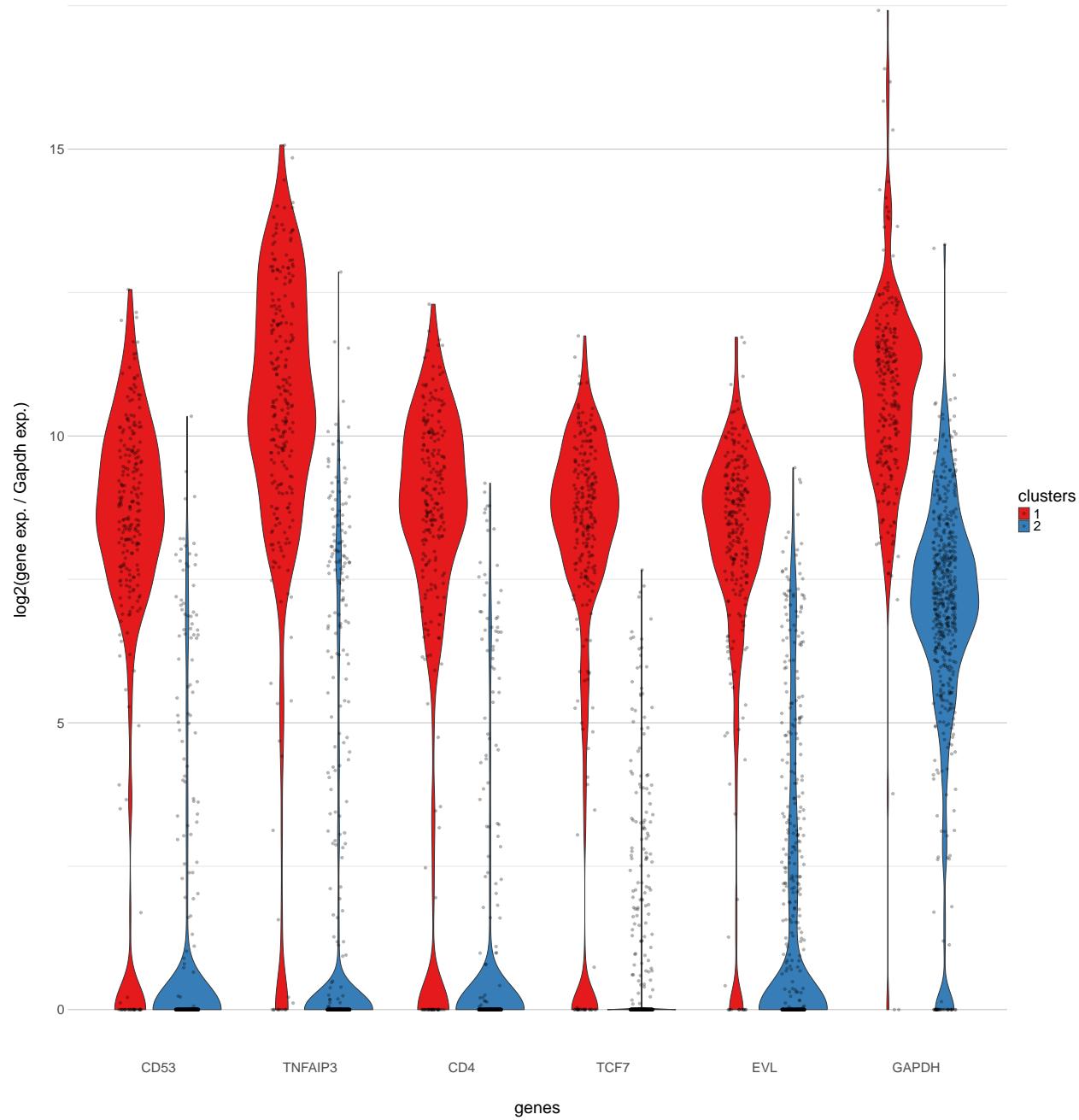
[15]	RPL13A:	1.61e-104	PTPRC:	4.354e-104
[17]	FYN:	2.819e-102	ITK:	1.237e-100
[19]	IL7R:	2.617e-100	LEF1:	6.319e-100
[21]	JAK1:	2.603e-99	KLF2:	5.062e-99
[23]	SELL:	9.117e-99	TMSB10:	1.039e-98
[25]	CD53:	2e-98	TNFAIP3:	6.838e-98
[27]	CD4:	1.467e-97	TCF7:	2.469e-97
[29]	EVL:	9.45e-97	GAPDH:	4.297e-88
[31]	RUNX1:	1.008e-87	HIF1A:	8.129e-87
[33]	ZAP70:	1.355e-85	JUN:	1.227e-84
[35]	GRB2:	6.85e-79	PTEN:	7.605e-79
[37]	FOS:	3.073e-78	PTPN6:	1.686e-75
[39]	SLC2A3:	1.899e-75	ORAI1:	3.174e-72
[41]	CD28:	3.56e-72	ICOS:	8.277e-72
[43]	IL4R:	4.145e-68	LCK:	4.476e-68
[45]	NFKB1:	8.415e-68	PPP3CC:	8.415e-68
[47]	IRF2:	1.364e-67	S100A6:	9.379e-65
[49]	STAT1:	3.631e-64	CD40LG:	9.884e-64
[51]	AKT1:	1.445e-62	PTMA:	4.809e-62
[53]	VAV1:	1.895e-61	IRF1:	2.931e-61
[55]	GSK3A:	1.352e-59	CDC42:	4.833e-59
[57]	PRKCQ:	4.833e-59	S100A4:	1.567e-58
[59]	TNFSF8:	5.218e-58	ITGA4:	3.246e-57
[61]	IFNAR2:	8.865e-57	CXCR4:	2.597e-56
[63]	STAT3:	1.186e-55	NRAS:	2.609e-54
[65]	NFATC1:	3.105e-53	PML:	1.021e-52
[67]	ITGB1:	1.796e-52	MAPK3:	2.524e-52
[69]	LY6E:	8.097e-52	TRAF5:	8.659e-52
[71]	GSK3B:	1.404e-47	IFNAR1:	2.127e-46
[73]	CRIP1:	3.465e-46	FOXO1:	5.994e-46
[75]	DPP4:	5.202e-45	IL6ST:	9.932e-45
[77]	IL12RB1:	7.594e-44	TXK:	2.814e-43
[79]	SREBF1:	1.127e-41	RGS1:	5.321e-41
[81]	CCR7:	3.593e-39	STAT4:	1.193e-38
[83]	PLCG1:	7.763e-38	MTOR:	1.228e-32
[85]	CD200R1:	3.837e-31	IRF7:	2.584e-30
[87]	CD27:	5.658e-30	GATA3:	1.122e-29
[89]	DNM1L:	1.795e-28	RICTOR:	8.326e-28
[91]	CBLB:	6.305e-25	AKT1S1:	2.696e-23
[93]	FAS:	7.185e-22	TNFRSF1A:	4.295e-21
[95]	TRAF3IP2:	7.018e-21	LAT:	9.666e-21
[97]	TLN1:	5.526e-19	STMN1:	2.667e-18
[99]	BCL2:	8.829e-18	LGALS1:	2.766e-17
[101]	ISG15:	3.138e-16	IL2RA:	5.156e-16
[103]	MYC:	1.109e-14	TYK2:	5.116e-14
[105]	ID2:	3.502e-13	TRAF2:	9.093e-13
[107]	TNFRSF1B:	1.691e-12	IRF4:	1.834e-12
[109]	CCR2:	1.413e-11	PPARA:	3.182e-11
[111]	ZBTB16:	3.92e-11	RPTOR:	4.763e-11
[113]	MYB:	6.934e-11	KRAS:	1.229e-10
[115]	S1PR1:	3.585e-10	PIK3CA:	1.487e-09
[117]	TIGIT:	1.369e-08	IKZF2:	2.124e-08
[119]	CD200:	2.617e-08	RAC1:	1.264e-07
[121]	CXCL10:	1.71e-07	NLRP3:	2.459e-07

[128]	C5:	2.836e-07	MAPK8:	1.153e-06
[125]	IFNG:	1.483e-06	TBX21:	1.503e-06
[127]	BCL6:	1.927e-06	TNFRSF9:	2.236e-06
[129]	CCR4:	3.107e-06	HAVCR2:	6.59e-06
[131]	MAPK1:	6.899e-06	CD274:	1.195e-05
[133]	FOXP3:	3.025e-05	CCL5:	4.32e-05
[135]	FAIM2:	8.202e-05	ITGA1:	0.0001204
[137]	MALAT1:	0.0001215	NR4A1:	0.0002041
[139]	HLA-DQB1:	0.0002279	PI3:	0.0002757
[141]	CD40:	0.0002842	IFNGR1:	0.0005509
[143]	ICAM1:	0.000704	CD8A:	0.0007753
[145]	AIM2:	0.001107	IFI44L:	0.001377
[147]	PRDM1:	0.001477	MAF:	0.001815
[149]	BIRC5:	0.003358	IRF9:	0.003818
[151]	RORC:	0.007755	ZEB2:	0.009081
[153]	CXCR3:	0.01043	TNFRSF4:	0.01194
[155]	SOCS3:	0.01275	CCR1:	0.01596
[157]	HRAS:	0.02904	CCR5:	0.03086

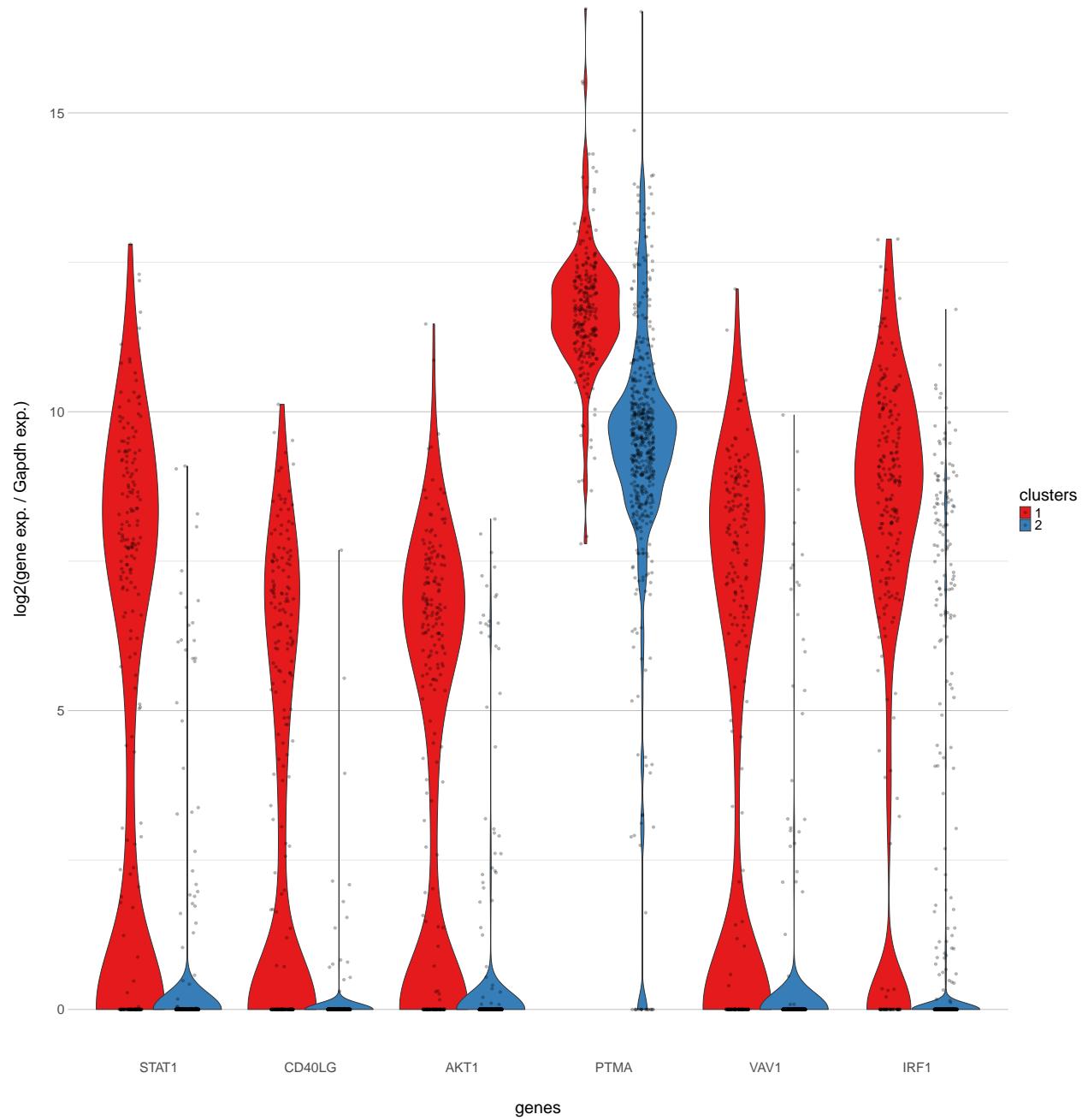
most significant expression differences between clusters (plot #1)



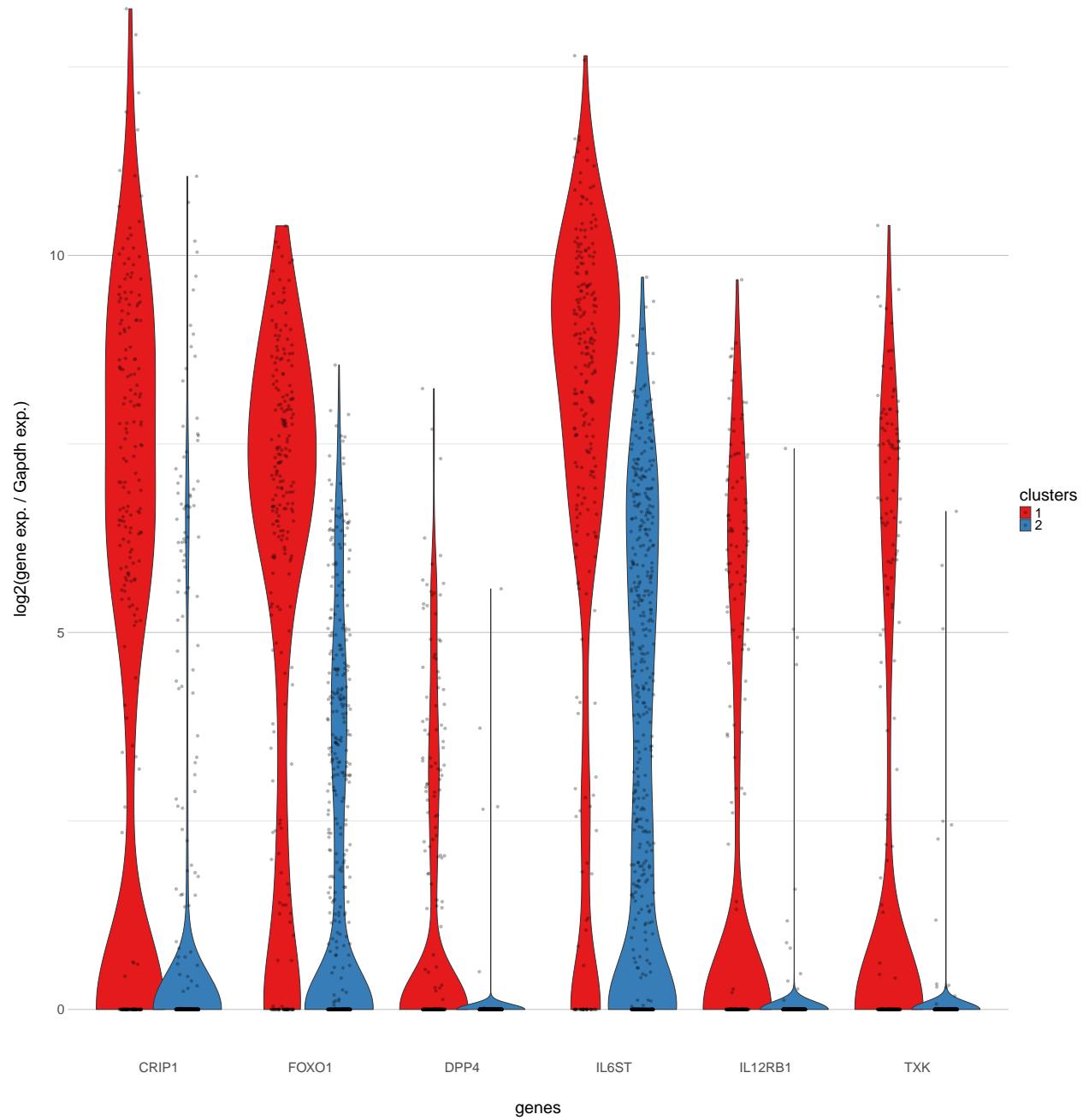
most significant expression differences between clusters (plot #5)



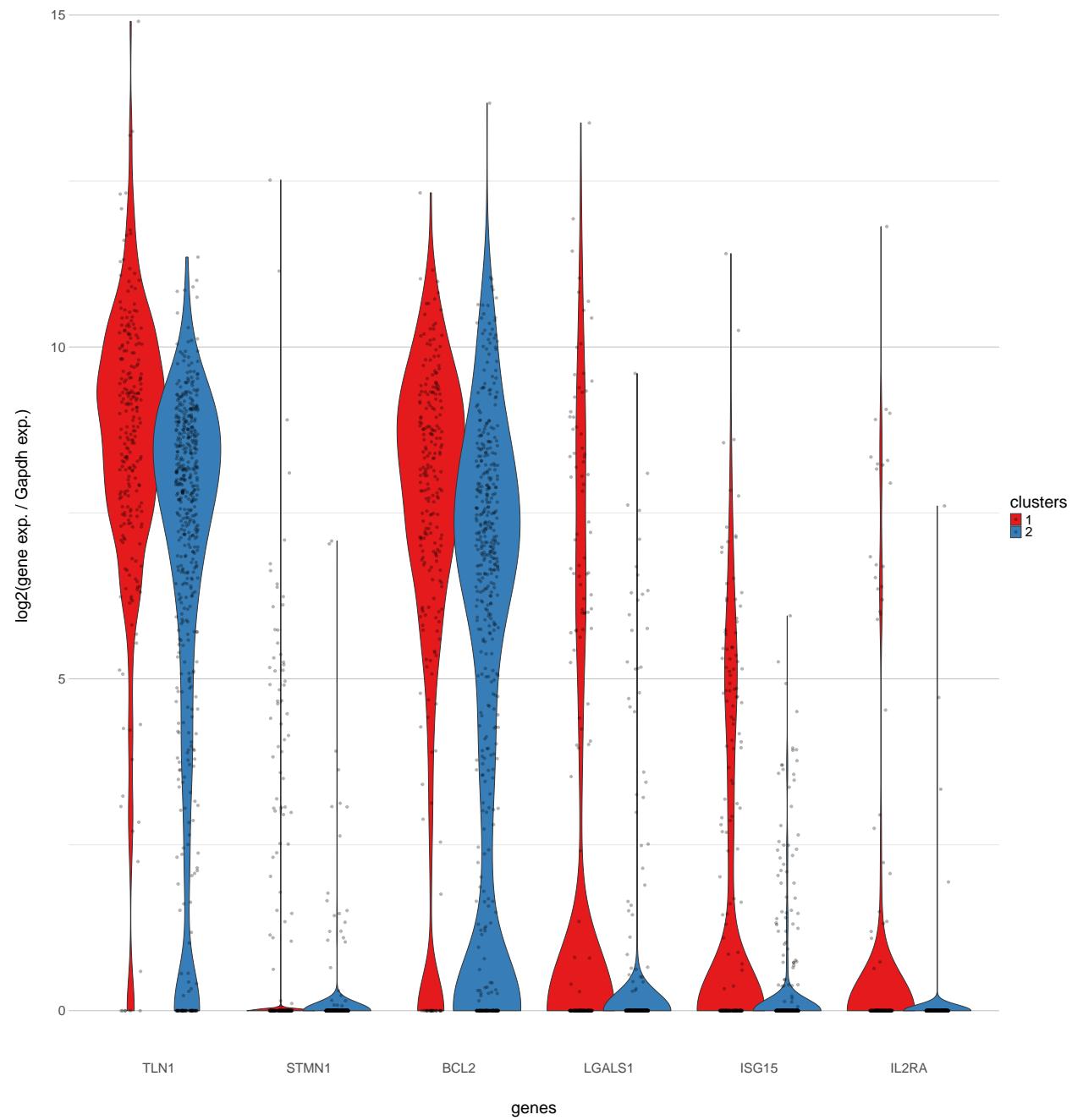
most significant expression differences between clusters (plot #9)



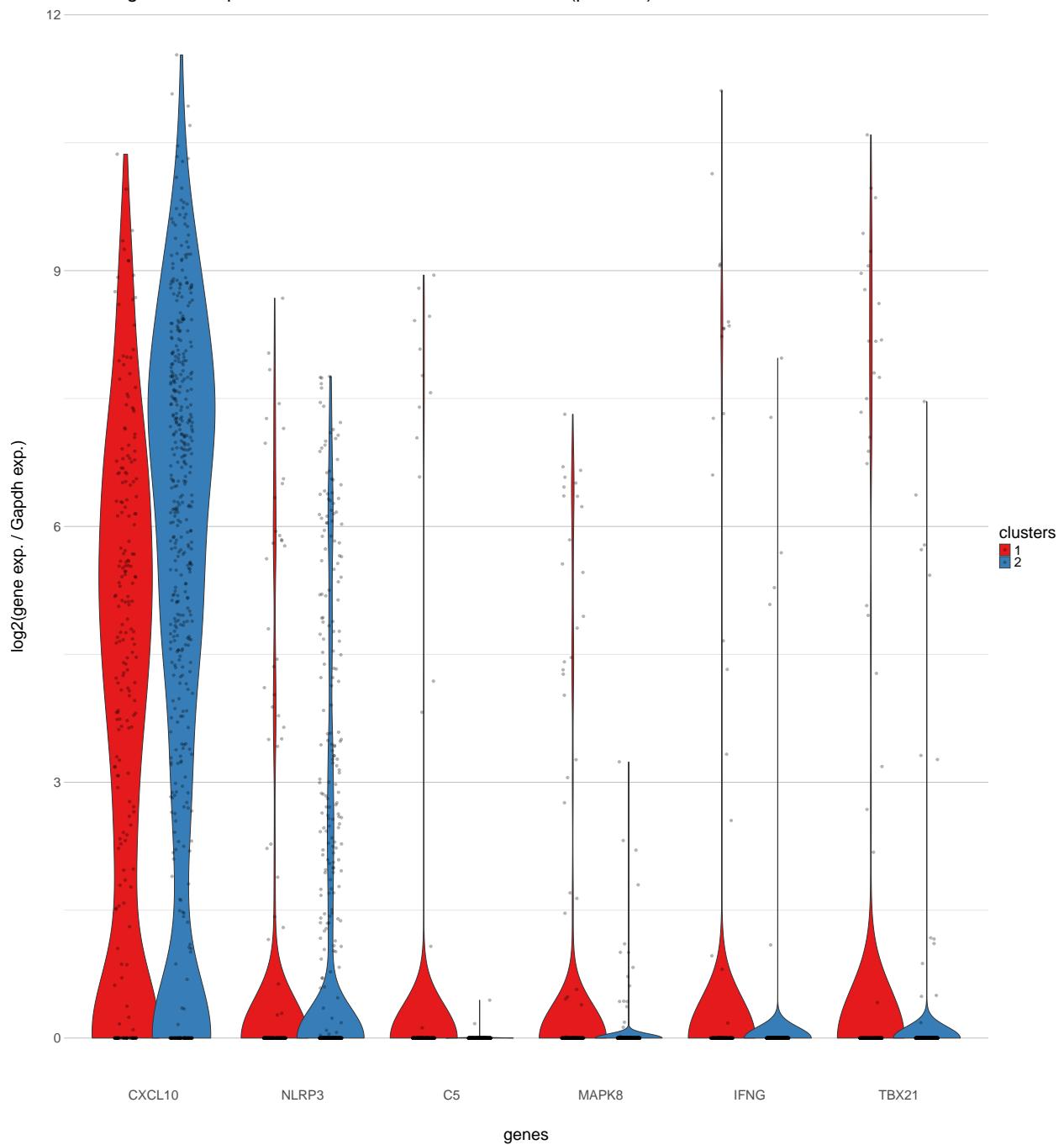
most significant expression differences between clusters (plot #13)



most significant expression differences between clusters (plot #17)



most significant expression differences between clusters (plot #21)

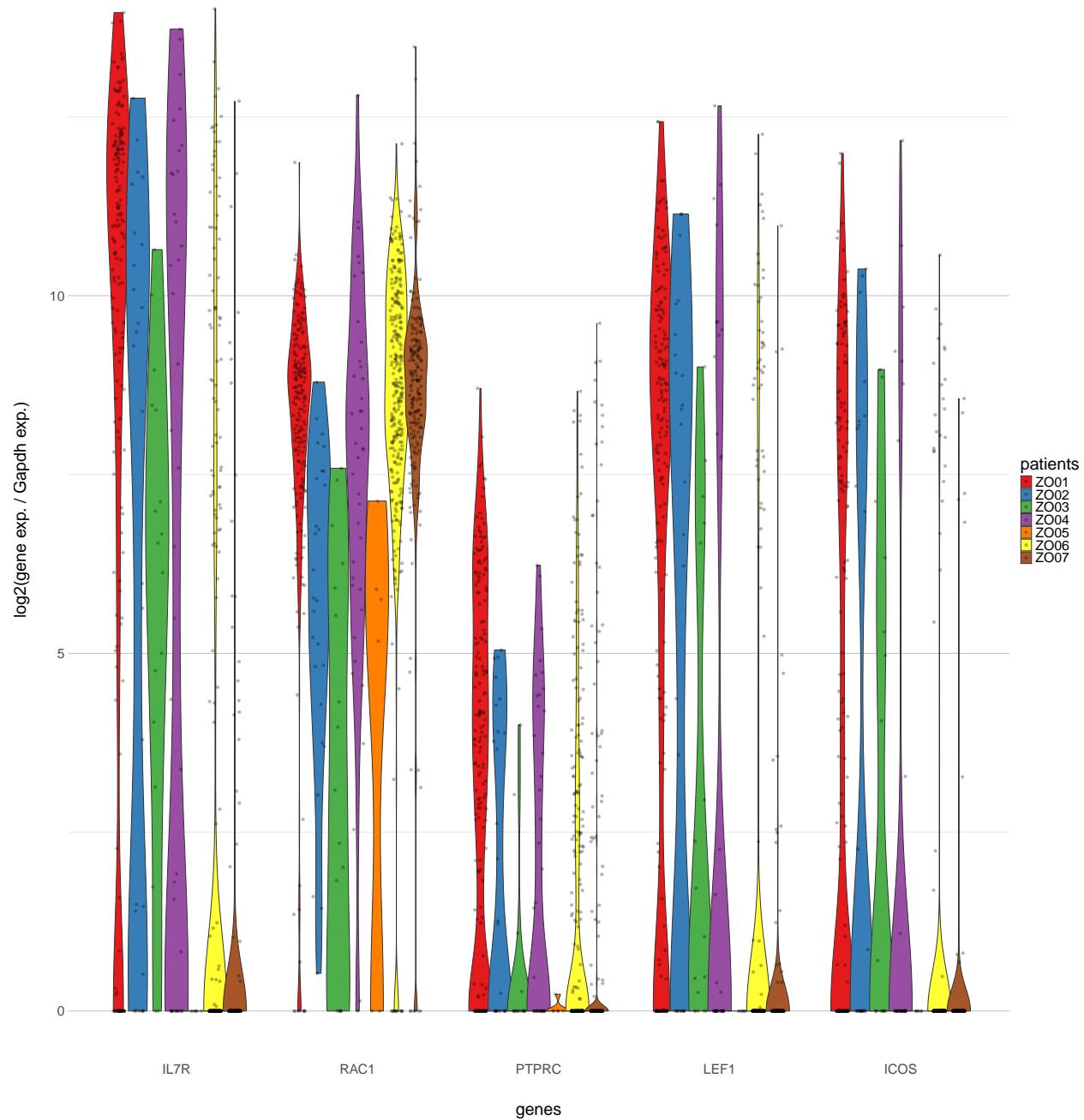


```
[1] Differentially expressed genes between patients :
[1] IL7R: 1.131e-54
[3] PTPRC: 6.36e-52
[5] LEF1: 7.614e-50
[7] FYN: 4.222e-45
[9] CD52: 4.004e-44
[11] EVL: 6.218e-43
[13] TGFBR2: 4.171e-41
[1] RAC1: 1.131e-54
[3] LEF1: 3.493e-51
[5] ICOS: 1.257e-48
[7] RAP1A: 2.261e-44
[9] CD40: 4.339e-44
[11] EVL: 9.278e-43
[13] kmeans.cluster.1.1: 2.128e-40
```

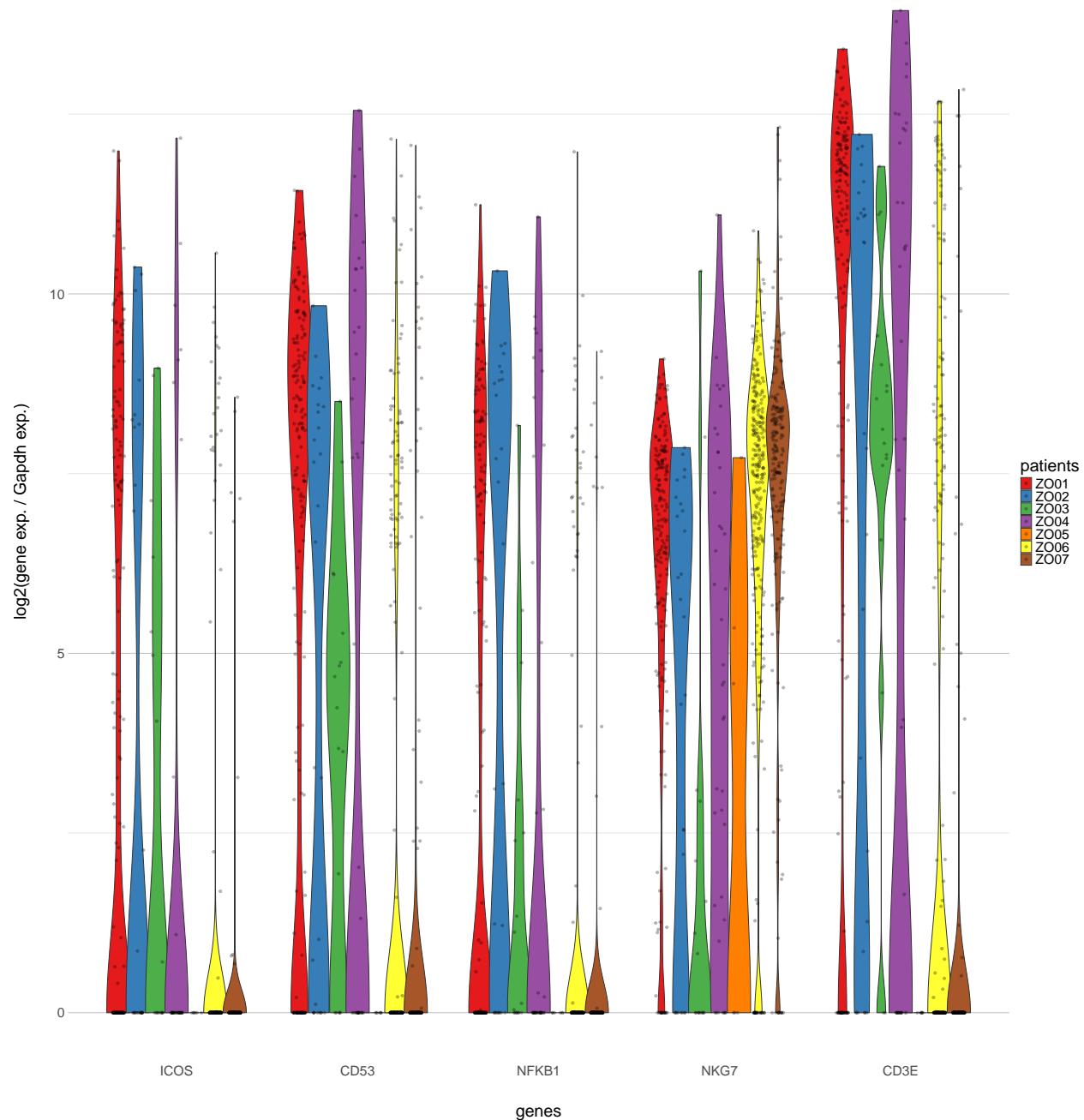
[15]	BTG1:	2.128e-40	STAT5B:	2.233e-40
[17]	BTG1:	4.585e-40	AKT1:	5.525e-40
[19]	KLF2:	8.214e-40	TCF7:	2.757e-39
[21]	STAT5B:	4.875e-37	CD52:	2.872e-36
[23]	LCK:	5.858e-36	CD69:	9.071e-36
[25]	CD53:	1.938e-35	ICOS:	1.237e-33
[27]	CD53:	1.456e-33	NFKB1:	1.809e-33
[29]	NKG7:	2.495e-33	CD3E:	2.622e-33
[31]	PI3:	5.433e-33	B2M:	6.072e-33
[33]	FOS:	1.353e-32	PRDM1:	2.775e-32
[35]	IFNAR2:	1.036e-31	IL4R:	1.151e-31
[37]	ICAM1:	1.37e-31	MAPK8:	9.722e-31
[39]	IRF2:	1.978e-30	TXK:	2.36e-30
[41]	GAPDH:	8.92e-30	TNFRSF18:	1.512e-29
[43]	CALM1:	2.359e-29	CD53:	8.095e-28
[45]	IL12RB1:	7.011e-27	RPL13A:	3.17e-26
[47]	TXK:	5.533e-26	CD274:	1.02e-25
[49]	FOS:	6.23e-25	IRF1:	9.476e-25
[51]	ZAP70:	2.354e-24	NRAS:	2.547e-24
[53]	ITGB1:	2.547e-24	PTEN:	6.431e-24
[55]	IRF2:	1.006e-22	HLA-DQB1:	2.114e-22
[57]	RPL13A:	3.292e-22	DPP4:	2.468e-21
[59]	IL7:	2.521e-21	GSK3B:	3.005e-21
[61]	CXCR3:	2.54e-20	CDC42:	3.631e-20
[63]	STAT3:	4.633e-20	PTEN:	1.772e-19
[65]	TNFSF8:	1.909e-19	CD200R1:	2.713e-19
[67]	EVL:	2.918e-19	RPL13A:	6.507e-19
[69]	MAPK8:	7.614e-19	VAV1:	9.151e-19
[71]	MAPK1:	1.696e-18	TCF7:	2.651e-18
[73]	GSK3B:	2.972e-18	IFI44:	3.872e-18
[75]	CD40LG:	5.924e-18	JUN:	6.223e-18
[77]	TRAF5:	9.565e-18	JUN:	1.066e-17
[79]	IL12RB1:	1.178e-17	IL17A:	2.707e-17
[81]	patientColor:	2.887e-17	ORAI1:	5.143e-17
[83]	IFIT3:	6.327e-17	SLC2A3:	9.2e-17
[85]	CCR3:	9.969e-17	ITGA4:	1.22e-16
[87]	MTOR:	1.22e-16	IRF9:	2.465e-16
[89]	PPP3CC:	3.742e-16	NKG7:	5.662e-16
[91]	IFNGR1:	8.796e-16	CXCR4:	1.034e-15
[93]	GSK3A:	4.099e-15	ITGB1:	1.51e-14
[95]	CCR3:	2.438e-14	IL6ST:	3.43e-14
[97]	LY6E:	4.096e-14	MAF:	4.812e-14
[99]	CCR7:	5.051e-14	TNFRSF9:	9.051e-14
[101]	MAPK3:	9.505e-14	PLCG1:	2.746e-13
[103]	CDC42:	3.014e-13	PI3:	2.4e-12
[105]	LGALS1:	3.628e-12	STAT3:	1.105e-11
[107]	DNM1L:	1.12e-11	STMN1:	1.626e-11
[109]	CBLB:	9.206e-11	TLN1:	3.398e-10
[111]	TRAF2:	5.398e-10	BCL2:	1.726e-09
[113]	PRKCQ:	2.396e-09	RICTOR:	2.766e-09
[115]	CD200R1:	5.25e-09	AKT1:	5.257e-09
[117]	HAVCR2:	2.319e-08	C3:	2.943e-08
[119]	GATA3:	3.248e-08	FOXO1:	3.53e-08
[121]	AKT1S1:	3.606e-08	HRAS:	8.142e-08

[123] DPP4:	1.151e-07	TYK2:	1.985e-07
[125] PPARA:	2.149e-07	HLA-DQB1:	3.842e-07
[127] MTOR:	4.118e-07	CD274:	5.199e-07
[129] IL10:	2.446e-06	GATA3:	2.527e-06
[131] patientColor:	4.145e-06	PTMA:	1.368e-05
[133] TRAF2:	3.471e-05	IL2RA:	4.576e-05
[135] TRAF3IP2:	6.062e-05	ZEB2:	7.147e-05
[137] TNFRSF1B:	0.0002067	CD200:	0.0002895
[139] HLA-DQB1:	0.0004002	MYB:	0.001146
[141] MYB:	0.001235	FAS:	0.001262
[143] CCR2:	0.002202	CCR5:	0.002812
[145] CD200:	0.002971	PIK3CA:	0.003307
[147] PIK3CA:	0.00566	ISG15:	0.007717
[149] RPTOR:	0.008107	KRAS:	0.008148
[151] TIGIT:	0.009742	LGALS1:	0.009987
[153] IRF9:	0.01166	MAF:	0.01581
[155] ITGA1:	0.0219	SOCS3:	0.0219
[157] CCR1:	0.02568	FAIM2:	0.03826
[159] TNFRSF1A:	0.04138		

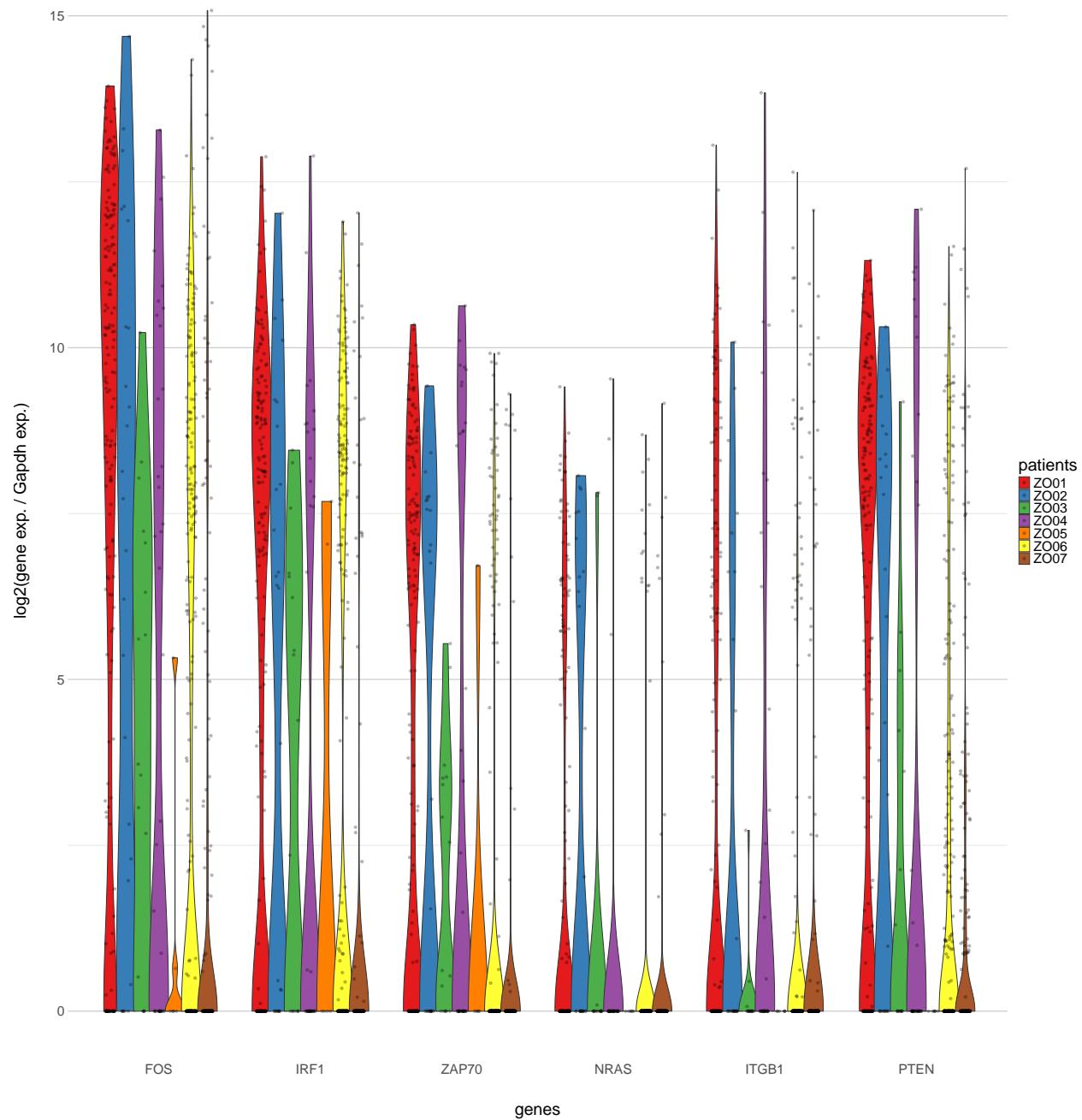
most significant expression differences between patients (plot #1)



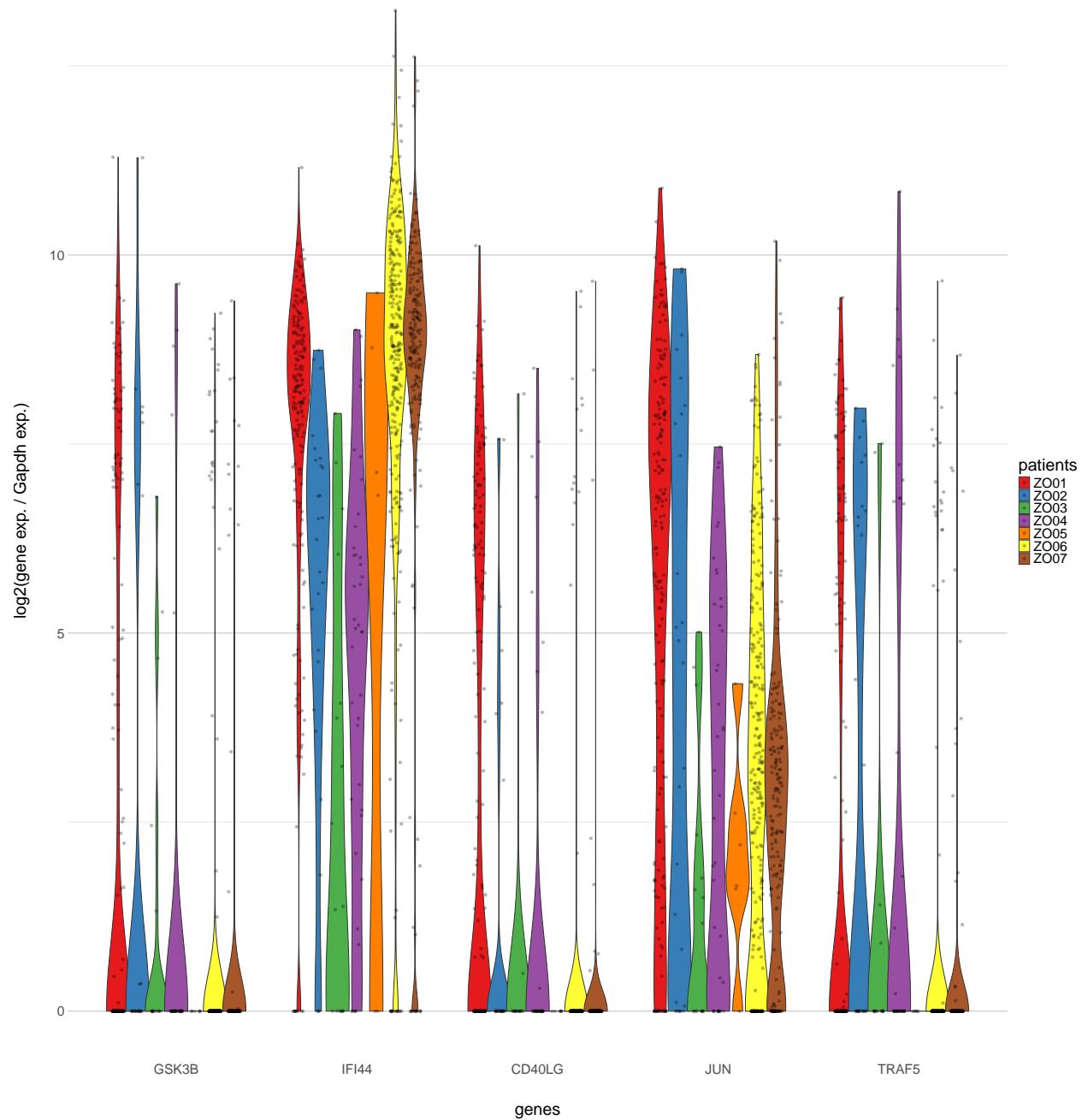
most significant expression differences between patients (plot #5)



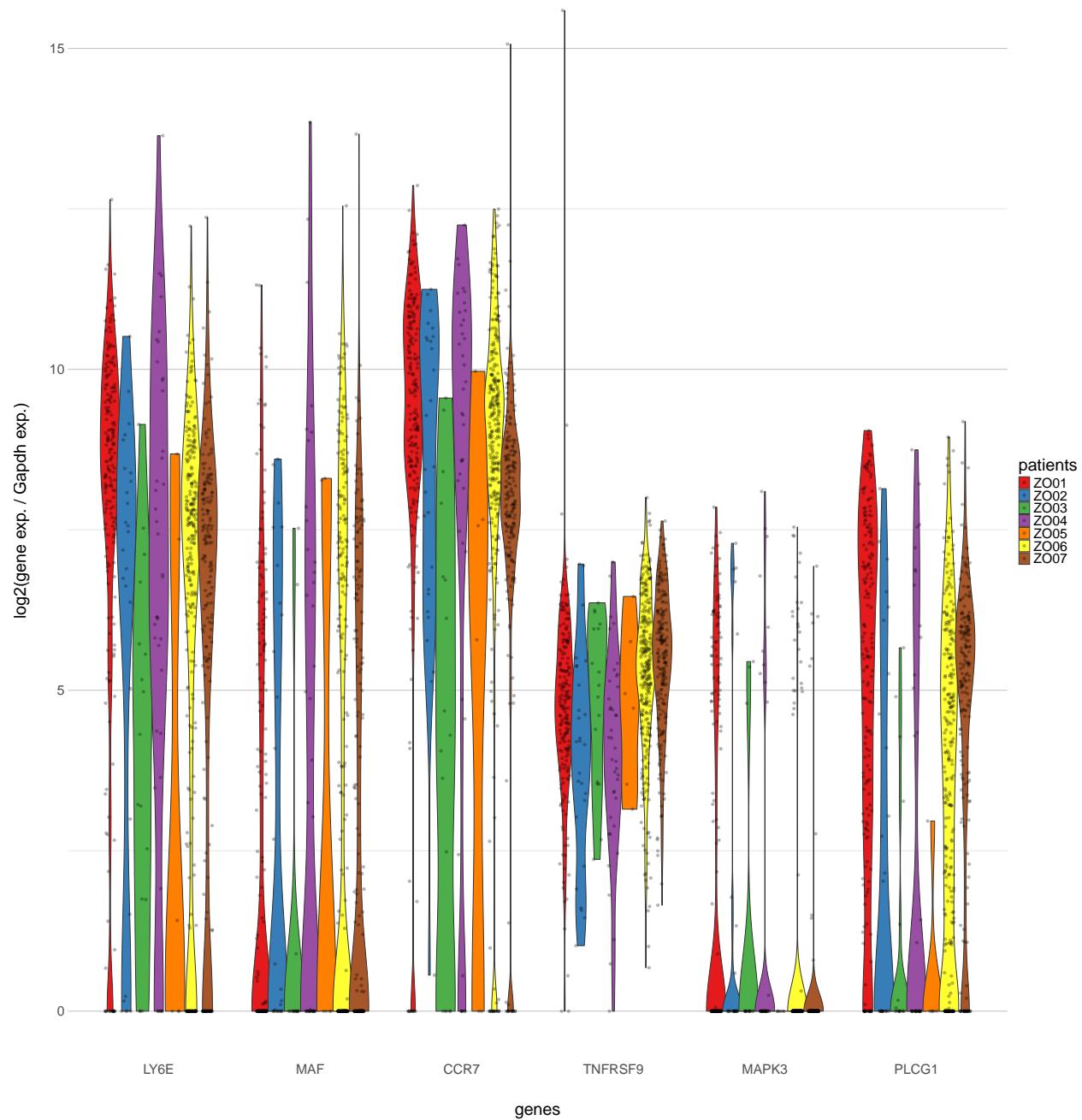
most significant expression differences between patients (plot #9)



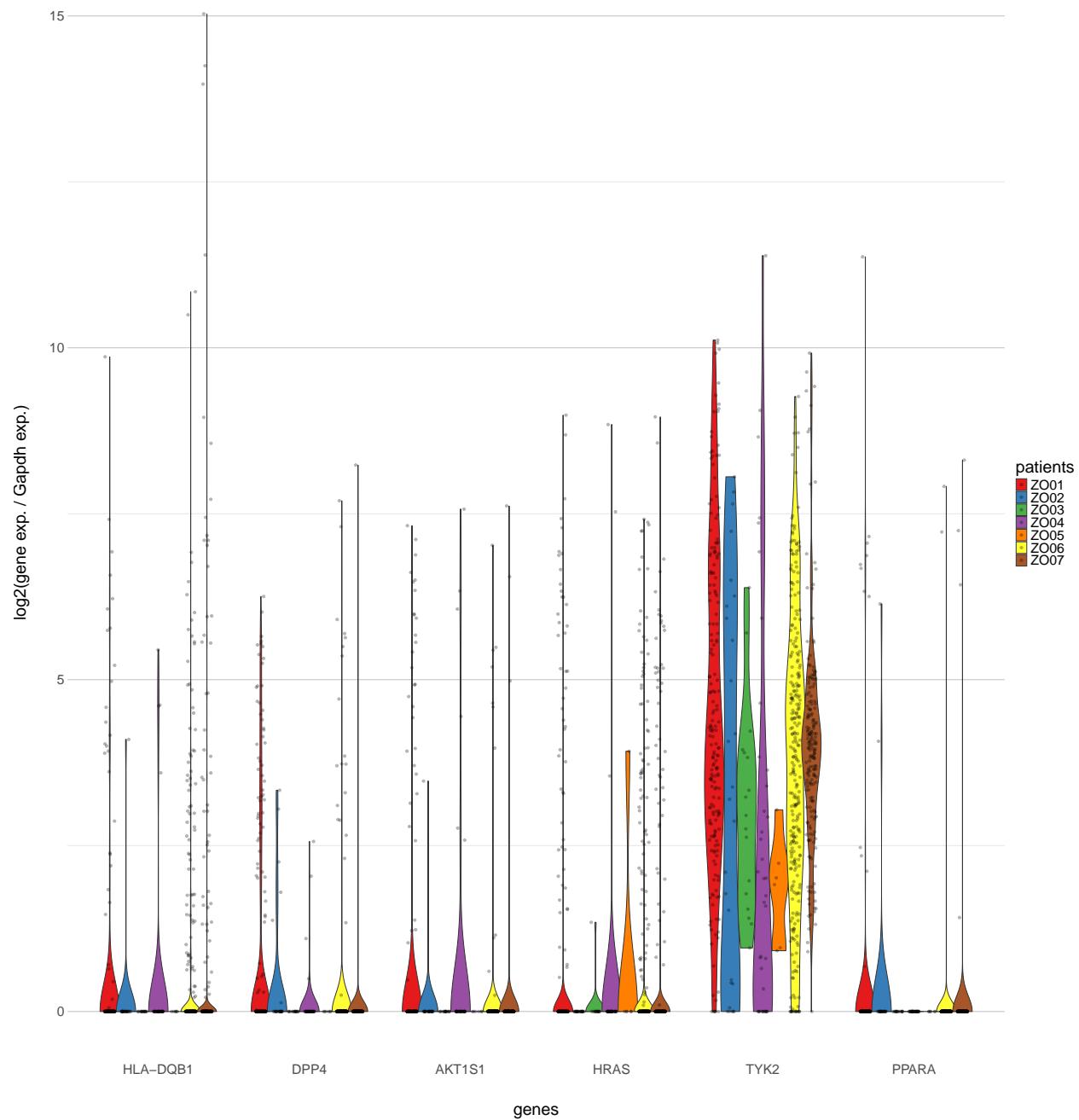
most significant expression differences between patients (plot #13)



most significant expression differences between patients (plot #17)



most significant expression differences between patients (plot #21)

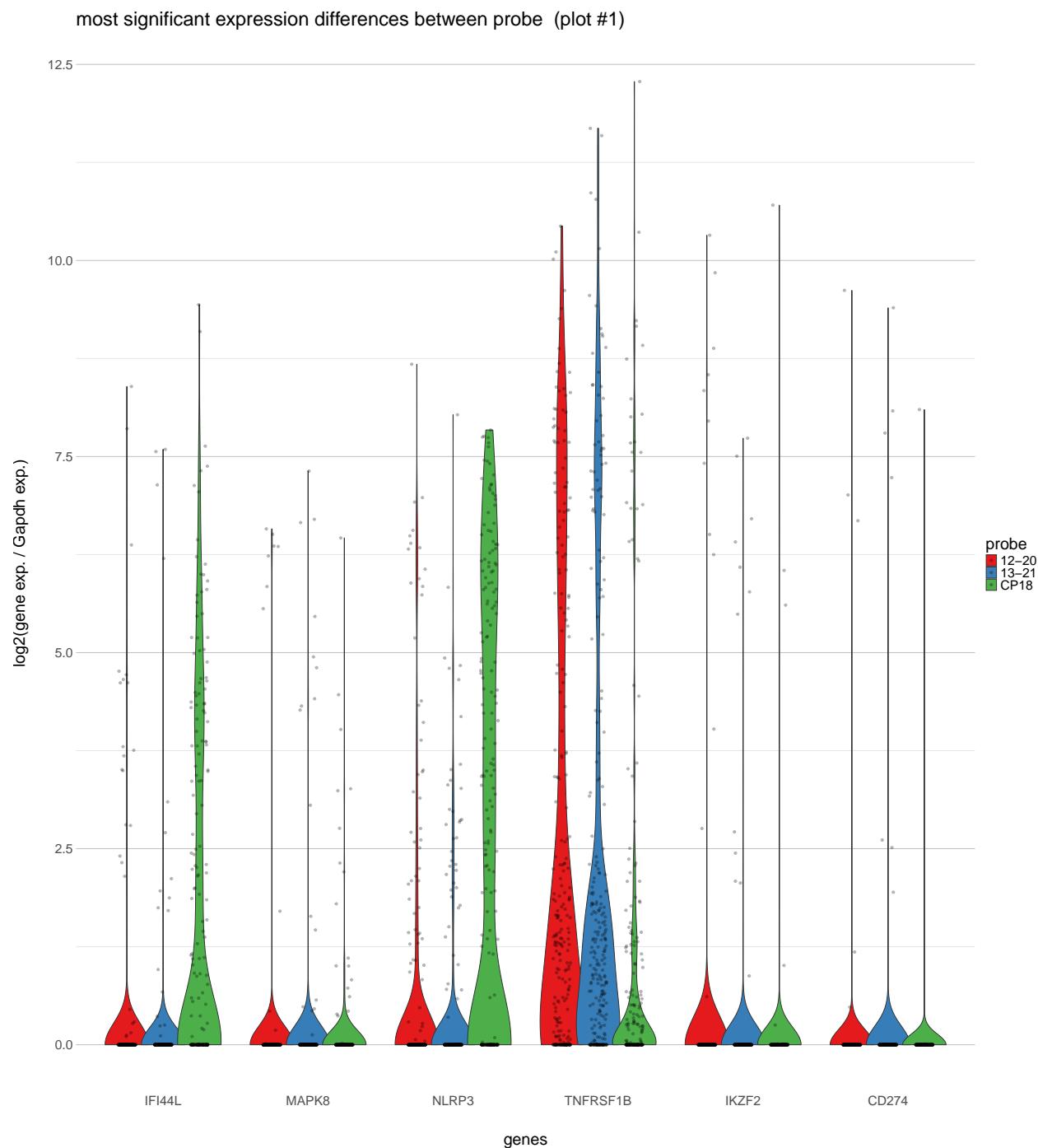


```
[1] Differentially expressed genes between probe :
[1] IFI44L: 9.554e-34
[3] NLRP3: 5.214e-13
[5] IKZF2: 4.369e-11
[7] PRDM1: 9.92e-11
[9] HLA-DQB1: 1.851e-09
[11] IFNAR1: 9.441e-09
[13] IFNGR1: 6.413e-08
[1] MAPK8: 2.034e-29
[3] TNFRSF1B: 2.548e-11
[5] CD274: 9.631e-11
[7] CCR6: 3.668e-10
[9] CD40: 2.728e-09
[11] FOXP3: 5.421e-08
[13] PI3: 6.428e-08
```

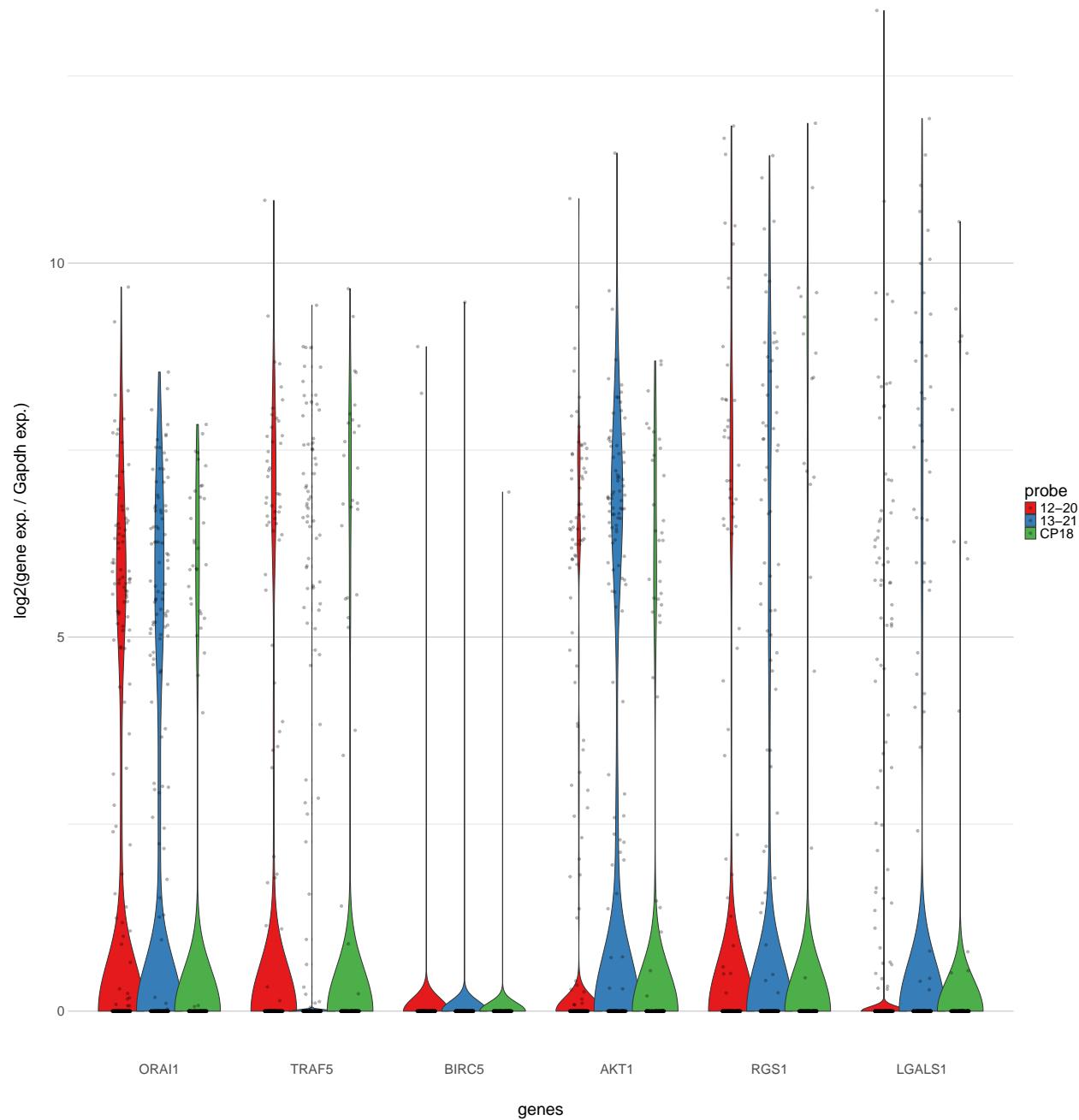
[15]	ISG15:	1.346e-06	IL6ST:	8.466e-06
[17]	ITGA1:	8.466e-06	PML:	1.606e-05
[19]	ITGA4:	2.196e-05	PTEN:	4.265e-05
[21]	LAG3:	4.781e-05	RAC1:	5.042e-05
[23]	TNFRSF18:	6.414e-05	RPL13A:	0.0001239
[25]	ORAI1:	0.0001239	TRAF5:	0.0001239
[27]	BIRC5:	0.0001314	AKT1:	0.0001763
[29]	RGS1:	0.0001809	LGALS1:	0.0001809
[31]	ZEB2:	0.0002188	TMSB10:	0.0002252
[33]	RUNX1:	0.0002524	HIF1A:	0.0003123
[35]	CD200R1:	0.0003543	CD4:	0.0003714
[37]	RAP1A:	0.0004255	JAK1:	0.0004255
[39]	FAS:	0.0004255	TYK2:	0.0004255
[41]	CD52:	0.0004558	PPARG:	0.0004593
[43]	ICOS:	0.0004834	JAK2:	0.0004834
[45]	CD53:	0.0004999	STAT3:	0.0005516
[47]	IFNAR2:	0.0005766	CD3E:	0.0006761
[49]	CALM1:	0.0007179	AKT1:	0.0007323
[51]	CD44:	0.0007707	kmeans.cluster.1.1:	0.0007707
[53]	CCR3:	0.0007906	PTPRC:	0.001095
[55]	ICAM1:	0.001111	BTG1:	0.001113
[57]	LAT:	0.001113	PTPRC:	0.001173
[59]	CD28:	0.001275	ITK:	0.001379
[61]	ISG15:	0.001379	NKG7:	0.001379
[63]	B2M:	0.001392	CD28:	0.001392
[65]	IL6ST:	0.001392	LEF1:	0.001403
[67]	NFKB1:	0.001403	CBLB:	0.001511
[69]	CCR7:	0.001621	S100A4:	0.001808
[71]	STAT5B:	0.001854	PLCG1:	0.001927
[73]	BTG1:	0.002121	ZEB2:	0.002144
[75]	CALM1:	0.002301	IL25:	0.002578
[77]	IRF4:	0.002611	LCK:	0.003838
[79]	TGFBR2:	0.003838	FOS:	0.003984
[81]	TMSB10:	0.004128	IFIT3:	0.00442
[83]	STAT3:	0.0055	MYC:	0.005734
[85]	MALAT1:	0.007267	IL21:	0.007392
[87]	CD69:	0.007621	CD40LG:	0.008071
[89]	IFNG:	0.008071	TXK:	0.008436
[91]	IL2RA:	0.008481	LEF1:	0.008981
[93]	CD200R1:	0.009745	ZBTB16:	0.009745
[95]	MAPK3:	0.01062	IL6ST:	0.01062
[97]	FAS:	0.01062	NRAS:	0.01092
[99]	GSK3B:	0.01179	DPP4:	0.01549
[101]	RPTOR:	0.01573	PIK3CA:	0.016
[103]	PTPN6:	0.01761	HLA-DRA:	0.01792
[105]	FOS:	0.01811	IFNAR2:	0.0199
[107]	IRF7:	0.02016	S100A4:	0.02278
[109]	RUNX1:	0.02303	GATA3:	0.02419
[111]	NFKB1:	0.02448	IRF2:	0.02537
[113]	HAVCR2:	0.0262	RAC1:	0.02741
[115]	STAT1:	0.03053	IRF1:	0.03053
[117]	PTMA:	0.03228	ITGB1:	0.03228
[119]	CCR1:	0.03511	IFNAR2:	0.03639
[121]	CXCR6:	0.03716	IL5RA:	0.03895

[123] IRF2: 0.03979
[125] MTOR: 0.03979

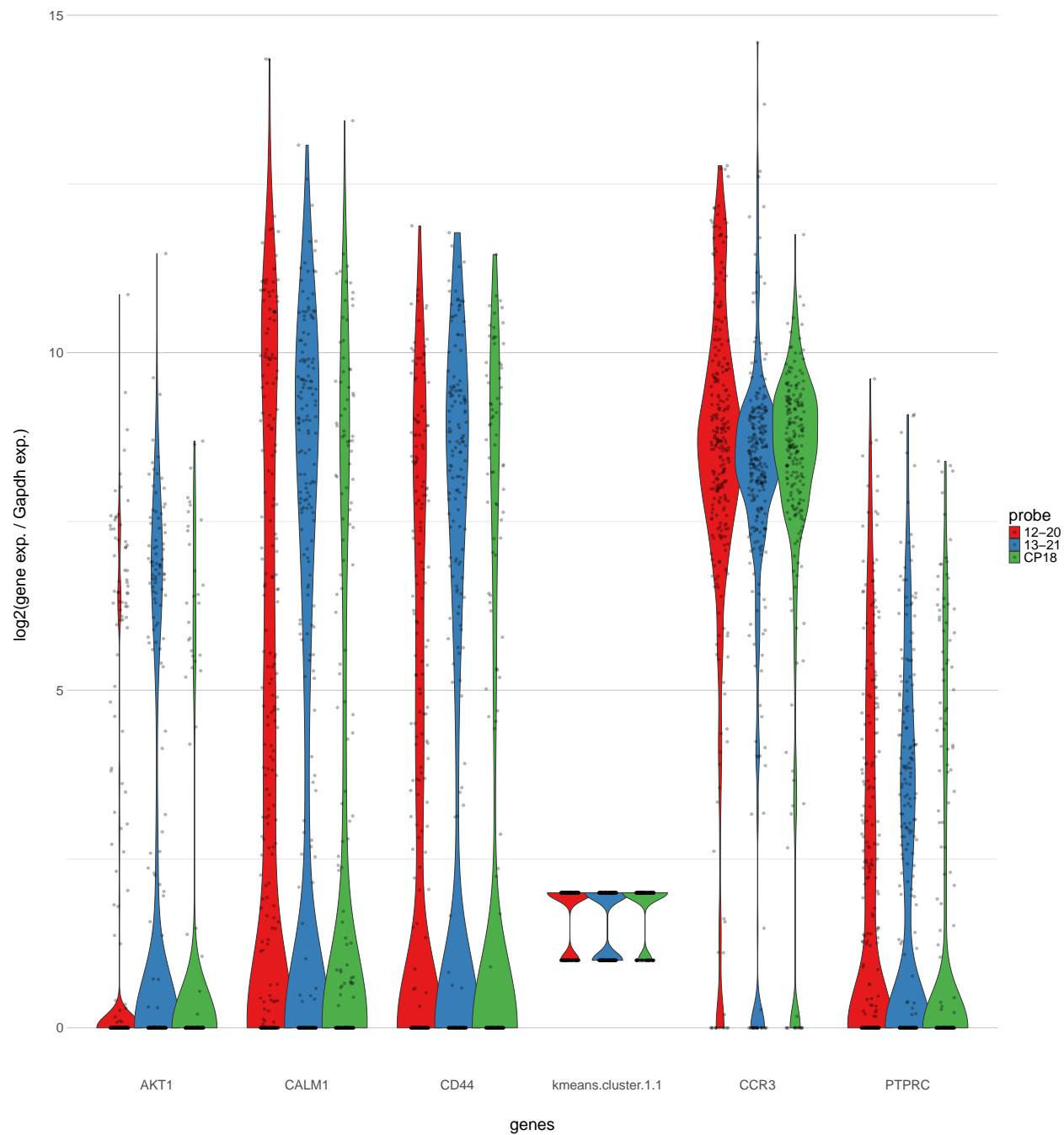
VAV1: 0.03979
STMN1: 0.04582



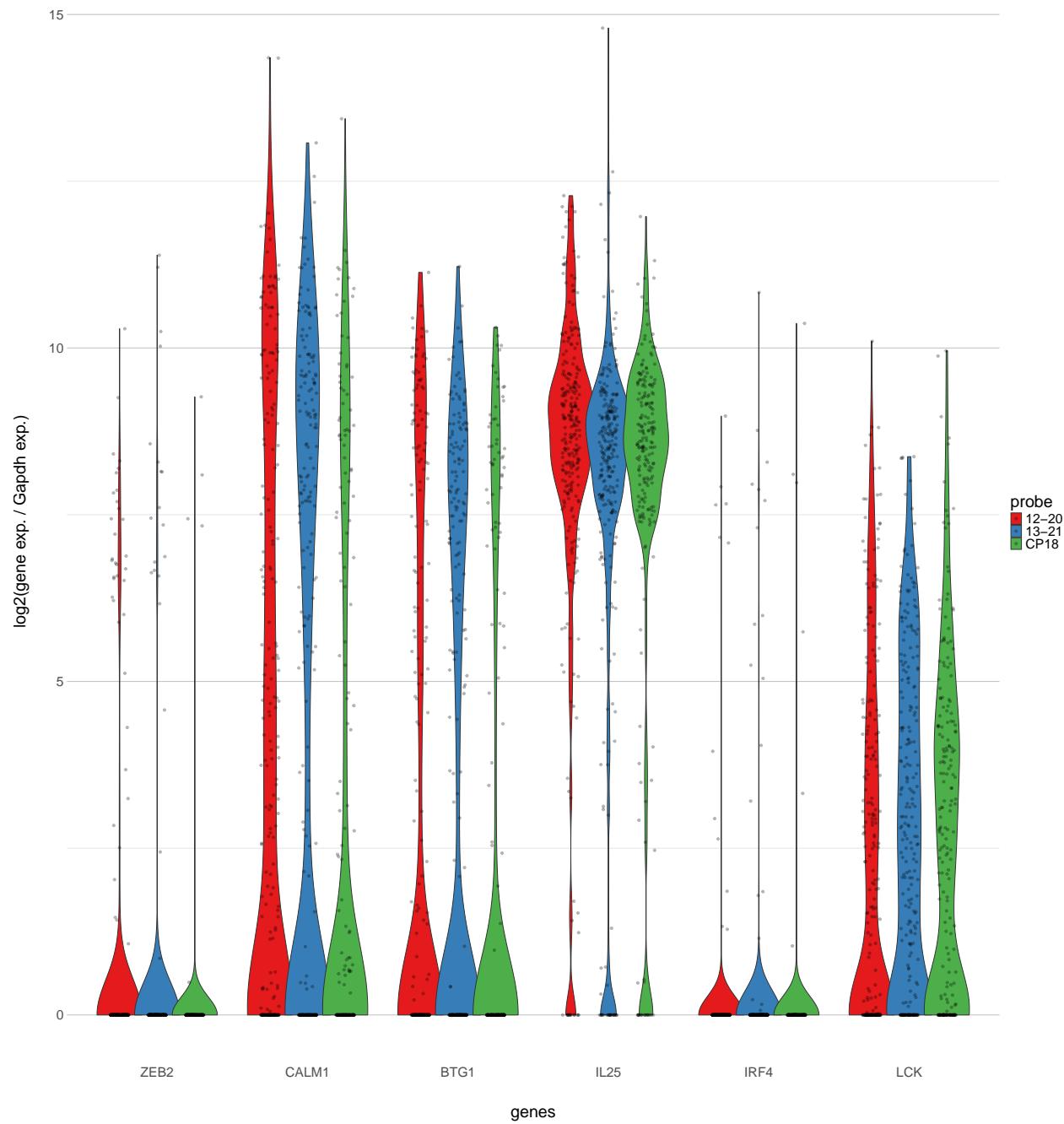
most significant expression differences between probe (plot #5)



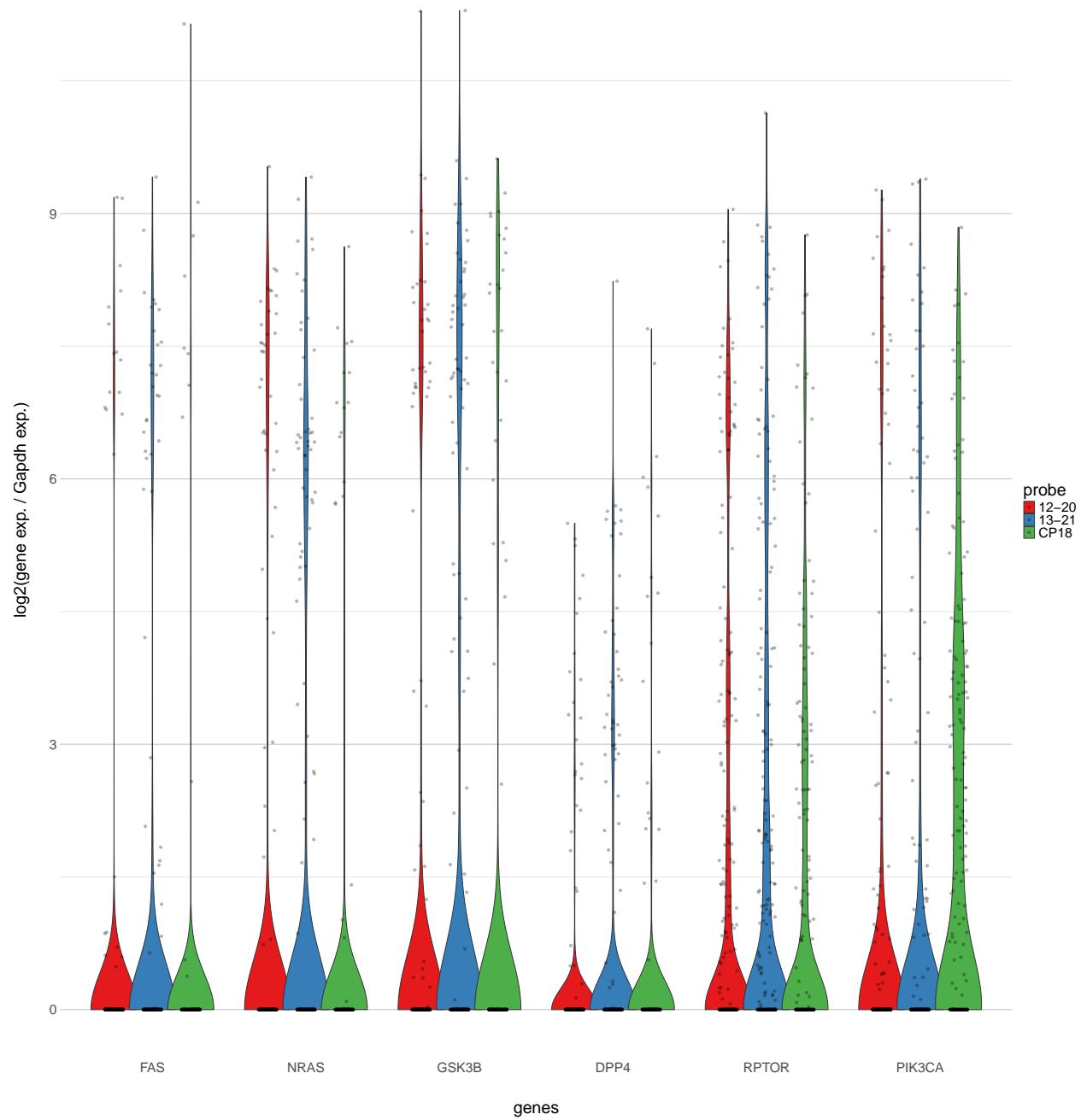
most significant expression differences between probe (plot #9)



most significant expression differences between probe (plot #13)



most significant expression differences between probe (plot #17)



most significant expression differences between probe (plot #21)

