glurs

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```
library(ggplot2)
library(Matrix)
library(cowplot)
library(Seurat)
```

```
## Attaching SeuratObject
```

```
## Seurat v4 was just loaded with SeuratObject v5; disabling v5 assays and
## validation routines, and ensuring assays work in strict v3/v4
## compatibility mode
```

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2
## --
```

```
## v tibble  3.2.1     v dplyr   1.1.3
## v tidyr   1.3.0     v stringr 1.5.0
## v readr   2.1.4     v forcats 0.5.2
## v purrr   1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x tidyr::expand() masks Matrix::expand()
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## x tidyr::pack()   masks Matrix::pack()
## x tidyr::unpack() masks Matrix::unpack()
```

```
library(plyr)
```

```
## ------------------------------------------------------------------------------
## You have loaded plyr after dplyr - this is likely to cause problems.
## If you need functions from both plyr and dplyr, please load plyr first, then dplyr:
## library(plyr); library(dplyr)
## ------------------------------------------------------------------------------
##
## Attaching package: 'plyr'
##
## The following objects are masked from 'package:dplyr':
##
##     arrange, count, desc, failwith, id, mutate, rename, summarise,
##     summarize
##
## The following object is masked from 'package:purrr':
##
##     compact
```

```
library(SingleCellExperiment)
```

```
## Loading required package: SummarizedExperiment
## Loading required package: MatrixGenerics
## Loading required package: matrixStats
##
## Attaching package: 'matrixStats'
##
## The following object is masked from 'package:plyr':
##
##     count
##
## The following object is masked from 'package:dplyr':
##
##     count
##
##
## Attaching package: 'MatrixGenerics'
##
## The following objects are masked from 'package:matrixStats':
##
##     colAlls, colAnyNAs, colAnys, colAvgsPerRowSet, colCollapse,
##     colCounts, colCummaxs, colCummins, colCumprods, colCumsums,
##     colDiffs, colIQRDiffs, colIQRs, colLogSumExps, colMadDiffs,
##     colMads, colMaxs, colMeans2, colMedians, colMins, colOrderStats,
##     colProds, colQuantiles, colRanges, colRanks, colSdDiffs, colSds,
##     colSums2, colTabulates, colVarDiffs, colVars, colWeightedMads,
##     colWeightedMeans, colWeightedMedians, colWeightedSds,
##     colWeightedVars, rowAlls, rowAnyNAs, rowAnys, rowAvgsPerColSet,
##     rowCollapse, rowCounts, rowCummaxs, rowCummins, rowCumprods,
##     rowCumsums, rowDiffs, rowIQRDiffs, rowIQRs, rowLogSumExps,
##     rowMadDiffs, rowMads, rowMaxs, rowMeans2, rowMedians, rowMins,
##     rowOrderStats, rowProds, rowQuantiles, rowRanges, rowRanks,
##     rowSdDiffs, rowSds, rowSums2, rowTabulates, rowVarDiffs, rowVars,
##     rowWeightedMads, rowWeightedMeans, rowWeightedMedians,
##     rowWeightedSds, rowWeightedVars
##
## Loading required package: GenomicRanges
## Loading required package: stats4
## Loading required package: BiocGenerics
##
## Attaching package: 'BiocGenerics'
##
## The following objects are masked from 'package:dplyr':
##
##     combine, intersect, setdiff, union
##
## The following object is masked from 'package:SeuratObject':
##
##     intersect
##
## The following objects are masked from 'package:stats':
##
##     IQR, mad, sd, var, xtabs
```

```
##
## The following objects are masked from 'package:base':
##
##     anyDuplicated, append, as.data.frame, basename, cbind, colnames,
##     dirname, do.call, duplicated, eval, evalq, Filter, Find, get, grep,
##     grepl, intersect, is.unsorted, lapply, Map, mapply, match, mget,
##     order, paste, pmax, pmax.int, pmin, pmin.int, Position, rank,
##     rbind, Reduce, rownames, sapply, setdiff, sort, table, tapply,
##     union, unique, unsplit, which.max, which.min
##
## Loading required package: S4Vectors
##
## Attaching package: 'S4Vectors'
##
## The following object is masked from 'package:plyr':
##
##     rename
##
## The following objects are masked from 'package:dplyr':
##
##     first, rename
##
## The following object is masked from 'package:tidyr':
##
##     expand
##
## The following objects are masked from 'package:Matrix':
##
##     expand, unname
##
## The following objects are masked from 'package:base':
##
##     expand.grid, I, unname
##
## Loading required package: IRanges
##
## Attaching package: 'IRanges'
##
## The following object is masked from 'package:plyr':
##
##     desc
##
## The following objects are masked from 'package:dplyr':
##
##     collapse, desc, slice
##
## The following object is masked from 'package:purrr':
##
##     reduce
##
## Loading required package: GenomeInfoDb
## Loading required package: Biobase
## Welcome to Bioconductor
##
```

```
##     Vignettes contain introductory material; view with
##     'browseVignettes()'. To cite Bioconductor, see
##     'citation("Biobase")', and for packages 'citation("pkgname")'.
##
##
## Attaching package: 'Biobase'
##
## The following object is masked from 'package:MatrixGenerics':
##
##     rowMedians
##
## The following objects are masked from 'package:matrixStats':
##
##     anyMissing, rowMedians
##
##
## Attaching package: 'SummarizedExperiment'
##
## The following object is masked from 'package:SeuratObject':
##
##     Assays
##
## The following object is masked from 'package:Seurat':
##
##     Assays
```

```
library(matrixStats)
library(umap)
library(foreach)
```

```
##
## Attaching package: 'foreach'
##
## The following objects are masked from 'package:purrr':
##
##     accumulate, when
```

```
library(DoubletFinder)
load("~/projects/wilson-lab/nat-tech/data/park_et_al_2022/GSE207799_Thirst2_SCT_trimPlus.Robj")
Thirst2_SCT_trimPlus <- UpdateSeuratObject(object = Thirst2_SCT_trimPlus)
```

```
## Validating object structure
## Updating object slots
## Ensuring keys are in the proper structure
## Updating matrix keys for DimReduc 'pca'
## Updating matrix keys for DimReduc 'umap'
## Ensuring keys are in the proper structure
## Ensuring feature names don't have underscores or pipes
## Updating slots in RNA
## Updating slots in SCT
## Updating slots in integrated
## Updating slots in integrated_nn
## Setting default assay of integrated_nn to integrated
## Updating slots in integrated_snn
## Setting default assay of integrated_snn to integrated
```

```
## Updating slots in pca
## Updating slots in umap
## Setting umap DimReduc to global
## No assay information could be found for FindIntegrationAnchors

## Warning: Adding a command log without an assay associated with it

## No assay information could be found for PairwiseIntegrateReference

## Warning: Adding a command log without an assay associated with it

## Setting assay used for JackStraw.integrated.pca to integrated
## No assay information could be found for ScoreJackStraw

## Warning: Adding a command log without an assay associated with it

## Setting assay used for RunPCA.integrated to integrated
## Setting assay used for FindNeighbors.integrated.pca to integrated
## No assay information could be found for FindClusters

## Warning: Adding a command log without an assay associated with it

## Setting assay used for RunUMAP.integrated.pca to integrated
## Validating object structure for Assay 'RNA'
## Validating object structure for Assay 'SCT'
## Validating object structure for Assay 'integrated'
## Validating object structure for Graph 'integrated_nn'
## Validating object structure for Graph 'integrated_snn'
## Validating object structure for DimReduc 'pca'
## Validating object structure for DimReduc 'umap'
## Object representation is consistent with the most current Seurat version
```

```
DefaultAssay(Thirst2_SCT_trimPlus) <- "SCT"
load("~/projects/wilson-lab/nat-tech/data/park_et_al_2022/GSE207799_Thirst2_celltypes.Robj")
#Thirst2_celltypes <- UpdateSeuratObject(object = Thirst2_celltypes)
#DefaultAssay(Thirst2_celltypes) <- "SCT"

# knit options
setwd("~/projects/wilson-lab/nat-tech/")
dir.create('images/GluR_scRNA', recursive = TRUE, showWarnings = FALSE)
knitr::opts_chunk$set(echo = FALSE,
                      include = TRUE,
                      message = FALSE,
                      warning = FALSE,
                      fig.path='images/GluR_scRNA',
                      dev = c('pdf', 'png'),
                      fig_caption = TRUE,
                      fig.align = 'center',
                      fig.height = 6,
                      fig.width = 8,
                      pdf.options(encoding = "ISOLatin9.enc"),
                      rgl=TRUE)
```

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000000	-1.1506983	0.016	0.884	0.0000000	17_SurfaceGlia	GluClalpha
0.0000000	-1.0449139	0.111	0.884	0.0000000	25_dFB/vFB	GluClalpha
0.0000000	1.0093487	1.000	0.523	0.0000000	36_Glut	GluRIA
0.0000000	-0.9847574	0.161	0.886	0.0000000	13_LF-EB	GluClalpha

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000000	-0.9617073	0.133	0.883	0.0000000	18_SurfaceGlia	GluClalpha
0.0000000	-0.9504382	0.159	0.925	0.0000000	17_SurfaceGlia	CG11155
0.0000000	-0.8586078	0.233	0.924	0.0000000	18_SurfaceGlia	CG11155
0.0000000	-0.8528569	0.267	0.883	0.0000000	41_mFB	GluClalpha
0.0000000	0.8193333	0.962	0.543	0.0000000	36_Glut	GluRIB
0.0000000	-0.7605077	0.377	0.884	0.0000000	33_GABA	GluClalpha
0.0000000	0.7582331	1.000	0.375	0.0000000	14_DA-PAM	Nmdar2
0.0000000	-0.7405913	0.412	0.890	0.0000000	1_primeKCs	GluClalpha
0.0000000	0.7239828	0.917	0.375	0.0000000	21_DA-PAM	Nmdar2
0.0000000	-0.7221806	0.436	0.884	0.0000000	13_CortexGlia	GluClalpha
0.0000000	0.7069787	0.917	0.375	0.0000000	23_DA	Nmdar2
0.0000000	0.7039871	0.894	0.375	0.0000000	2_DA-PAM	Nmdar2
0.0000000	0.6990014	0.988	0.883	0.0000000	49_ACh	GluClalpha
0.0000000	-0.6867421	0.389	0.884	0.0000000	51_ACh	GluClalpha
0.0000000	-0.6864850	0.451	0.883	0.0000000	15_primeKCs	GluClalpha
0.0000000	-0.6780229	0.000	0.544	0.0000000	1_DA-PAM	GluRIB
0.0000000	-0.6778610	0.000	0.544	0.0005465	41_mFB	GluRIB
0.0000000	0.6713668	0.968	0.541	0.0000000	6_abKCs	GluRIB
0.0000000	-0.6623461	0.016	0.544	0.0000000	17_SurfaceGlia	GluRIB
0.0000000	-0.6600060	0.462	0.883	0.0001147	17_TA	GluClalpha
0.0000000	-0.6559261	0.022	0.544	0.0000009	3_DA-PAM	GluRIB
0.0000000	-0.6494305	0.000	0.524	0.0000000	17_SurfaceGlia	GluRIA
0.0000000	-0.6492657	0.000	0.524	0.0000025	37_Glut	GluRIA
0.0000000	-0.6491916	0.000	0.524	0.0001936	10_DA-PAM	GluRIA
0.0000001	-0.6491586	0.000	0.524	0.0013423	41_mFB	GluRIA
0.0000001	-0.6491586	0.000	0.524	0.0013423	14_DA-PAM	GluRIA
0.0000008	-0.6491257	0.000	0.524	0.0093779	18_OA	GluRIA
0.0000002	-0.6448970	0.033	0.544	0.0019516	14_DA-PAM	GluRIB
0.0000001	0.6431619	0.938	0.375	0.0006525	25_TA	Nmdar2
0.0000013	-0.6398593	0.038	0.544	0.0153445	18_OA	GluRIB
0.0000036	-0.6367237	0.042	0.544	0.0431921	21_DA-PAM	GluRIB
0.0000000	-0.6360485	0.043	0.544	0.0000011	2_DA-PAM	GluRIB
0.0000000	0.6359503	0.951	0.522	0.0000000	8_primeKCs	GluRIA
0.0000000	-0.6356722	0.014	0.524	0.0000000	51_ACh	GluRIA
0.0000000	-0.6281674	0.021	0.524	0.0000013	2_DA-PAM	GluRIA
0.0000000	-0.6276638	0.046	0.544	0.0000000	25_dFB/vFB	GluRIB
0.0000000	-0.6260372	0.019	0.524	0.0000000	25_dFB/vFB	GluRIA
0.0000000	-0.6231358	0.026	0.524	0.0001009	8_DA-PAM	GluRIA
0.0000000	-0.6230886	0.596	0.885	0.0000000	4_EnsheathingGlia	GluClalpha
0.0000001	-0.6202194	0.059	0.544	0.0008527	10_DA-PAM	GluRIB
0.0000000	-0.6186720	0.058	0.545	0.0000000	41_ACh	GluRIB
0.0000000	-0.6159374	0.030	0.525	0.0000000	13_LF-EB	GluRIA
0.0000000	-0.6098092	0.070	0.544	0.0000286	37_Glut	GluRIB
0.0000000	-0.6082171	0.071	0.544	0.0000475	3_Other-ACh	GluRIB
0.0000000	-0.6075109	0.073	0.544	0.0000000	13_CortexGlia	GluRIB
0.0000000	0.6073442	0.921	0.532	0.0000000	2_abKCs	GluRIB
0.0000000	-0.6065495	0.073	0.544	0.0000789	4_OtherNeurons	GluRIB
0.0000000	-0.6023873	0.048	0.524	0.0000507	3_Other-ACh	GluRIA
0.0000000	-0.6010366	0.079	0.544	0.0003625	8_DA-PAM	GluRIB
0.0000000	-0.6004075	0.072	0.545	0.0000000	13_LF-EB	GluRIB
0.0000000	-0.5946432	0.077	0.544	0.0000000	54_ACh	GluRIB
0.0000000	-0.5942299	0.479	0.883	0.0000000	32_Glut	GluClalpha

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000000	-0.5899845	0.035	0.524	0.0000000	49_ACh	GluRIA
0.0000000	-0.5894783	0.083	0.544	0.0000000	51_ACh	GluRIB
0.0000000	-0.5874749	0.064	0.524	0.0000000	13_CortexGlia	GluRIA
0.0000000	-0.5863338	0.058	0.525	0.0000000	41_ACh	GluRIA
0.0000000	0.5846807	0.800	0.375	0.0000055	41_mFB	Nmdar2
0.0000000	-0.5830379	0.061	0.544	0.0000000	44_ACh	GluRIB
0.0000000	-0.5827459	0.047	0.544	0.0000000	49_ACh	GluRIB
0.0000000	0.5810777	0.857	0.375	0.0004522	24_MA_Other	Nmdar2
0.0000000	-0.5797722	0.626	0.885	0.0000000	2_EnsheathingGlia	GluClalpha
0.0000000	-0.5779113	0.061	0.524	0.0000108	1_DA-PAM	GluRIA
0.0000000	-0.5719728	0.062	0.524	0.0000000	54_ACh	GluRIA
0.0000010	-0.5705496	0.062	0.524	0.0114590	12_DA-PAM	GluRIA
0.0000254	-0.5680737	0.083	0.524	0.3030092	21_DA-PAM	GluRIA
0.0000025	-0.5654423	0.067	0.524	0.0300653	18_SurfaceGlia	GluRIA
0.0000032	-0.5630186	0.100	0.544	0.0387063	18_SurfaceGlia	GluRIB
0.0000000	0.5585035	0.846	0.375	0.0000567	17_TA	Nmdar2
0.0000000	-0.5583380	0.551	0.884	0.0000000	8_primeKCs	GluClalpha
0.0000002	-0.5578038	0.079	0.524	0.0020550	7_DA-PAM	GluRIA
0.0000000	0.5574679	0.940	0.543	0.0000000	0_TA	GluRIB
0.0000000	0.5552560	0.912	0.542	0.0000000	10_abKCs	GluRIB
0.0000000	0.5521490	0.892	0.512	0.0000000	2_abKCs	GluRIA
0.0000000	-0.5507850	0.089	0.524	0.0002285	3_DA-PAM	GluRIA
0.0000020	-0.5487284	0.094	0.544	0.0240427	12_DA-PAM	GluRIB
0.0000000	-0.5473443	0.094	0.524	0.0000000	28_Glut	GluRIA
0.0000000	0.5404345	0.955	0.543	0.0000000	45_ACh	GluRIB
0.0000000	-0.5402509	0.113	0.526	0.0000000	4_EnsheathingGlia	GluRIA
0.0000000	-0.5382324	0.117	0.528	0.0000000	1_Astrocytes	GluRIA
0.0000000	0.5374336	0.838	0.543	0.0000000	34_GABA	GluRIB
0.0000000	0.5360621	0.923	0.523	0.0002882	17_TA	GluRIA
0.0000000	-0.5354654	0.150	0.544	0.0000000	50_ACh	GluRIB
0.0000000	-0.5352200	0.123	0.546	0.0000000	29_ACh	GluRIB
0.0000000	0.5317588	0.903	0.522	0.0000000	6_abKCs	GluRIA
0.0000000	0.5264928	0.912	0.543	0.0000000	53_ACh	GluRIB
0.0000000	0.5254675	0.962	0.543	0.0002250	17_TA	GluRIB
0.0000000	0.5251801	0.928	0.523	0.0000000	45_ACh	GluRIA
0.0000000	-0.5245584	0.102	0.526	0.0000000	29_ACh	GluRIA
0.0000000	-0.5234928	0.586	0.884	0.0000000	9_abKCs	GluClalpha
0.0000000	-0.5232046	0.161	0.548	0.0000000	1_Astrocytes	GluRIB
0.0000000	0.5231207	0.848	0.523	0.0000000	28_GABA	GluRIA
0.0000000	-0.5215884	0.122	0.525	0.0000000	40_ACh	GluRIA
0.0000000	0.5211350	0.818	0.271	0.0000000	6_Other-ACh	Nmdar1
0.0000000	-0.5170394	0.118	0.544	0.0000000	28_Glut	GluRIB
0.0000000	-0.5163066	0.128	0.524	0.0000000	48_ACh	GluRIA
0.0000000	-0.5133601	0.159	0.546	0.0000000	4_EnsheathingGlia	GluRIB
0.0000352	-0.5128830	0.143	0.524	0.4199000	16_DA-PAM	GluRIA
0.0000000	-0.5107124	0.121	0.525	0.0000000	35_ACh	GluRIA
0.0000000	-0.5103232	0.096	0.524	0.0000000	44_ACh	GluRIA
0.0000433	-0.5094398	0.179	0.544	0.5155618	16_DA-PAM	GluRIB
0.0000000	0.4992056	0.820	0.375	0.0000000	0_TA	Nmdar2
0.0000000	0.4959187	0.855	0.522	0.0000000	10_abKCs	GluRIA
0.0000000	-0.4948545	0.171	0.544	0.0000000	40_ACh	GluRIB
0.0000000	-0.4928352	0.128	0.546	0.0000000	31_ACh	GluRIB

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000054	-0.4914255	0.139	0.524	0.0642284	5_Other-ACh	GluRIA
0.0000000	-0.4878463	0.119	0.526	0.0000000	31_ACh	GluRIA
0.0000000	-0.4848409	0.765	0.884	0.0000000	5_EnsheathingGlia	GluClalpha
0.0000000	-0.4817554	0.208	0.546	0.0000000	2_EnsheathingGlia	GluRIB
0.0000000	-0.4815291	0.610	0.883	0.0000727	4_OtherNeurons	GluClalpha
0.0000000	0.4787491	1.000	0.883	0.0000000	36_GABA	GluClalpha
0.0064745	-0.4779047	0.214	0.543	1.0000000	11_OtherNeurons	GluRIB
0.0000000	-0.4756607	0.180	0.526	0.0000000	2_EnsheathingGlia	GluRIA
0.0000000	0.4699396	0.950	0.883	0.0000000	27_GABA	GluClalpha
0.0000000	-0.4697542	0.165	0.544	0.0000000	29_GABA	GluRIB
0.0000000	-0.4696971	0.181	0.545	0.0000000	37_ACh	GluRIB
0.0000000	-0.4670245	0.176	0.545	0.0000000	35_ACh	GluRIB
0.0000000	-0.4668864	0.190	0.525	0.0000000	5_EnsheathingGlia	GluRIA
0.0000049	-0.4661611	0.195	0.524	0.0585100	4_OtherNeurons	GluRIA
0.0000000	-0.4648074	0.175	0.524	0.0000019	50_ACh	GluRIA
0.0000000	-0.4628657	0.230	0.545	0.0000000	5_EnsheathingGlia	GluRIB
0.0000219	-0.4590655	0.118	0.524	0.2607507	11_DA-PAM	GluRIA
0.0005554	-0.4577006	0.526	0.883	1.0000000	10_ClockNeurons	GluClalpha
0.0000437	-0.4517282	0.206	0.544	0.5210516	11_DA-PAM	GluRIB
0.0000000	0.4508400	0.724	0.271	0.0000000	47_ACh	Nmdar1
0.0025888	-0.4498794	0.571	0.883	1.0000000	11_OtherNeurons	GluClalpha
0.0000234	-0.4494748	0.167	0.544	0.2793314	5_Other-ACh	GluRIB
0.0000000	0.4476959	0.935	0.542	0.0000000	8_primeKCs	GluRIB
0.0000000	0.4471555	0.986	0.883	0.0000000	35_GABA	GluClalpha
0.0000000	-0.4454420	0.158	0.525	0.0000000	39_ACh	GluRIA
0.0006207	-0.4427835	0.167	0.524	1.0000000	22_MA_Other	GluRIA
0.0000008	-0.4420494	0.192	0.524	0.0095044	2_IPCs	GluRIA
0.0000000	-0.4407654	0.769	0.883	0.0000002	2_IPCs	GluClalpha
0.0002041	0.4385865	0.833	0.523	1.0000000	23_DA	GluRIA
0.0000000	0.4380699	0.900	0.523	0.0000014	0_TA	GluRIA
0.0000446	0.4319590	0.833	0.543	0.5316917	20_DA-PAM	GluRIB
0.0001423	-0.4256509	0.129	0.524	1.0000000	7_Other-ACh	GluRIA
0.0000000	-0.4250177	0.550	0.883	0.0000867	35_Glut	GluClalpha
0.0002487	-0.4244537	0.226	0.544	1.0000000	40_GABA	GluRIB
0.0000000	0.4229844	0.993	0.883	0.0000000	42_ACh	GluClalpha
0.0000000	-0.4202944	0.000	0.376	0.0000000	15_SurfaceGlia	Nmdar2
0.0000000	-0.4202771	0.000	0.376	0.0000001	16_EnsheathingGlia	Nmdar2
0.0000000	-0.4175125	0.193	0.532	0.0000000	3_OlfactoryPNs	GluRIA
0.0000000	-0.4163388	0.234	0.544	0.0001995	33_GABA	GluRIB
0.0000952	0.4159010	0.792	0.523	1.0000000	20_DA-PAM	GluRIA
0.0000000	-0.4156503	0.155	0.524	0.0000005	29_GABA	GluRIA
0.0000000	-0.4152932	0.003	0.377	0.0000000	6_GliaOther	Nmdar2
0.0000000	-0.4139142	0.679	0.892	0.0000000	0_yKCs	GluClalpha
0.0000001	0.4124047	0.765	0.375	0.0008934	10_DA-PAM	Nmdar2
0.0000000	-0.4113582	0.009	0.376	0.0000000	13_CortexGlia	Nmdar2
0.0000000	-0.4106496	0.008	0.377	0.0000000	5_EnsheathingGlia	Nmdar2
0.0000000	0.4105291	0.798	0.543	0.0000000	28_GABA	GluRIB
0.0000000	-0.4101188	0.007	0.377	0.0000000	4_EnsheathingGlia	Nmdar2
0.0000000	-0.4094325	0.009	0.381	0.0000000	0_EnsheathingGlia	Nmdar2
0.0000000	-0.4090372	0.006	0.376	0.0000000	11_Astrocytes-like	Nmdar2
0.0000170	-0.4078450	0.731	0.883	0.2020418	18_OA	GluClalpha
0.0000000	-0.4043641	0.016	0.375	0.0000952	17_SurfaceGlia	Nmdar2

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000000	0.4036487	1.000	0.883	0.0000000	55_ACh	GluClalpha
0.0000000	-0.4032821	0.010	0.377	0.0000000	3_CortexGlia	Nmdar2
0.0000000	0.4031280	0.982	0.883	0.0000000	24_GABA	GluClalpha
0.0000000	-0.4027019	0.779	0.883	0.0000000	15_SurfaceGlia	GluClalpha
0.0000000	-0.4017623	0.014	0.379	0.0000000	1_Astrocytes	Nmdar2
0.0000000	-0.4014571	0.010	0.376	0.0000000	14_SurfaceGlia	Nmdar2
0.0000001	-0.3977730	0.217	0.544	0.0016875	34_Glut	GluRIB
0.0000081	-0.3962905	0.269	0.544	0.0969096	2_IPCs	GluRIB
0.0000000	-0.3959195	0.016	0.376	0.0000000	9_Astrocytes	Nmdar2
0.0000000	0.3955479	0.850	0.523	0.0000000	27_GABA	GluRIA
0.0000000	-0.3937202	0.024	0.378	0.0000000	2_EnsheathingGlia	Nmdar2
0.0000000	0.3932360	0.694	0.375	0.0001777	1_DA-PAM	Nmdar2
0.0000000	-0.3908801	0.217	0.544	0.0000000	39_ACh	GluRIB
0.0000000	0.3889385	0.698	0.271	0.0000009	37_Glut	Nmdar1
0.0000090	0.3881626	0.677	0.375	0.1069097	39_GABA	Nmdar2
0.0000000	0.3856672	0.984	0.882	0.0000000	12_Glut	GluClalpha
0.0000000	-0.3835866	0.242	0.547	0.0000000	17_ACh	GluRIB
0.0000008	0.3831398	0.865	0.543	0.0098676	56_ACh	GluRIB
0.0000000	-0.3831107	0.795	0.883	0.0000000	16_EnsheathingGlia	GluClalpha
0.0000000	0.3820000	0.743	0.375	0.0000002	35_GABA	Nmdar2
0.0000000	0.3814077	0.988	0.883	0.0000000	50_ACh	GluClalpha
0.0000000	0.3805182	0.703	0.374	0.0000000	16_Glut	Nmdar2
0.0000115	-0.3771115	0.595	0.883	0.1374724	3_Other-ACh	GluClalpha
0.0003602	-0.3724058	0.263	0.544	1.0000000	7_DA-PAM	GluRIB
0.0000000	0.3720190	0.848	0.509	0.0000000	0_yKCs	GluRIA
0.0000000	0.3698239	0.859	0.523	0.0000037	15_primeKCs	GluRIA
0.0015786	-0.3689269	0.290	0.524	1.0000000	40_GABA	GluRIA
0.0000005	0.3685932	0.839	0.375	0.0061962	57_ACh	Nmdar2
0.0000001	0.3684275	0.711	0.375	0.0009918	3_DA-PAM	Nmdar2
0.0000000	-0.3670535	0.566	0.883	0.0000638	31_SF-EB	GluClalpha
0.0000000	-0.3665930	0.030	0.377	0.0000000	8_EnsheathingGlia	Nmdar2
0.0000000	0.3655440	0.756	0.375	0.0000000	48_ACh	Nmdar2
0.0000019	-0.3644280	0.808	0.924	0.0231944	18_OA	CG11155
0.0000002	-0.3609310	0.707	0.924	0.0027565	4_OtherNeurons	CG11155
0.0002320	-0.3602876	0.268	0.544	1.0000000	38_Glut	GluRIB
0.0000000	0.3593087	0.854	0.530	0.0000000	0_yKCs	GluRIB
0.0008123	-0.3585990	0.278	0.524	1.0000000	9_DA-PAM	GluRIA
0.0001157	-0.3576744	0.792	0.883	1.0000000	23_DA	GluClalpha
0.0004605	-0.3547770	0.067	0.375	1.0000000	18_SurfaceGlia	Nmdar2
0.0000001	0.3532421	0.667	0.271	0.0006089	5_Other-ACh	Nmdar1
0.0000011	-0.3528413	0.247	0.544	0.0128838	32_Glut	GluRIB
0.0000034	-0.3494200	0.732	0.883	0.0407032	5_DA	GluClalpha
0.0000000	-0.3447954	0.373	0.544	0.0000000	9_Astrocytes	GluRIB
0.0000000	-0.3436617	0.076	0.377	0.0000000	6_abKCs	Nmdar2
0.0011998	-0.3429092	0.567	0.883	1.0000000	13_DA	GluClalpha
0.0000012	-0.3400696	0.203	0.524	0.0147321	34_Glut	GluRIA
0.0000000	0.3380169	0.830	0.543	0.0000002	27_GABA	GluRIB
0.0000000	0.3346967	0.838	0.523	0.0000221	34_GABA	GluRIA
0.0000000	-0.3342598	0.245	0.527	0.0000000	17_ACh	GluRIA
0.0000000	0.3342084	0.833	0.519	0.0000000	1_primeKCs	GluRIA
0.0000000	-0.3317534	0.725	0.924	0.0000000	17_GABA	CG11155
0.0000246	0.3317282	0.676	0.375	0.2932385	56_ACh	Nmdar2

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0001726	-0.3255850	0.098	0.375	1.0000000	38_Glut	Nmdar2
0.0000001	0.3246671	0.794	0.523	0.0009847	53_ACh	GluRIA
0.0000644	0.3246544	0.625	0.271	0.7679305	23_DA	Nmdar1
0.0000000	-0.3238699	0.846	0.883	0.0000000	1_Astrocytes	GluClalpha
0.0000083	0.3232121	0.683	0.375	0.0985033	5_DA	Nmdar2
0.0000002	0.3226465	1.000	0.883	0.0025789	9_DA-PAM	GluClalpha
0.0000069	-0.3224087	0.273	0.524	0.0825675	33_GABA	GluRIA
0.0000005	0.3220999	0.979	0.883	0.0061647	38_GABA	GluClalpha
0.0000004	0.3183116	0.779	0.543	0.0046950	36_GABA	GluRIB
0.0000000	-0.3178827	0.369	0.524	0.0000000	9_Astrocytes	GluRIA
0.0000000	-0.3150396	0.103	0.375	0.0002284	29_GABA	Nmdar2
0.0000000	-0.3147021	0.253	0.546	0.0000000	22_ACh	GluRIB
0.0000000	-0.3119224	0.758	0.926	0.0000000	0_GABA	CG11155
0.0009726	0.3109970	0.667	0.375	1.0000000	22_MA_Other	Nmdar2
0.0000014	0.3109562	1.000	0.883	0.0163160	57_ACh	GluClalpha
0.0000000	0.3093024	0.624	0.271	0.0000000	49_ACh	Nmdar1
0.0000000	0.3087210	0.682	0.375	0.0000046	49_ACh	Nmdar2
0.0000000	-0.3082791	0.876	0.883	0.0000000	14_SurfaceGlia	GluClalpha
0.0000001	-0.3062094	0.769	0.924	0.0013639	2_IPCs	CG11155
0.0000000	-0.3060505	0.816	0.924	0.0000000	47_ACh	CG11155
0.0049101	-0.3059402	0.258	0.544	1.0000000	7_Other-ACh	GluRIB
0.0000000	0.3052262	1.000	0.883	0.0000001	54_ACh	GluClalpha
0.0000000	-0.3038138	0.300	0.524	0.0000000	37_ACh	GluRIA
0.0000052	-0.3034003	0.233	0.524	0.0623952	32_Glut	GluRIA
0.0000120	-0.3019717	0.123	0.375	0.1431207	54_ACh	Nmdar2
0.0000586	0.3003269	0.684	0.375	0.6989018	8_DA-PAM	Nmdar2
0.0000279	-0.2998735	0.395	0.524	0.3323158	15_SurfaceGlia	GluRIA
0.0000000	0.2975363	0.999	0.880	0.0000000	3_OlfactoryPNs	GluClalpha
0.0000000	-0.2957776	0.744	0.924	0.0000088	32_GABA	CG11155
0.0000709	-0.2956371	0.096	0.375	0.8452459	2_IPCs	Nmdar2
0.0092067	0.2940903	0.476	0.271	1.0000000	24_MA_Other	Nmdar1
0.0000035	0.2938830	0.585	0.271	0.0419621	39_Glut	Nmdar1
0.0000000	0.2922278	0.990	0.883	0.0000000	29_GABA	GluClalpha
0.0000000	-0.2897385	0.000	0.272	0.0000000	9_Astrocytes	Nmdar1
0.0000000	-0.2891422	0.000	0.272	0.0000070	14_SurfaceGlia	Nmdar1
0.0000000	-0.2890637	0.000	0.272	0.0002476	15_SurfaceGlia	Nmdar1
0.0000000	-0.2890513	0.000	0.272	0.0004359	16_EnsheathingGlia	Nmdar1
0.0000016	-0.2889687	0.000	0.271	0.0192151	17_SurfaceGlia	Nmdar1
0.0007683	-0.2888367	0.000	0.271	1.0000000	57_ACh	Nmdar1
0.0000001	0.2873214	0.590	0.375	0.0010478	27_GABA	Nmdar2
0.0000000	-0.2865269	0.002	0.273	0.0000000	3_CortexGlia	Nmdar1
0.0035479	0.2854415	0.875	0.543	1.0000000	23_DA	GluRIB
0.0000000	-0.2845302	0.003	0.273	0.0000000	6_GliaOther	Nmdar1
0.0000000	-0.2833891	0.005	0.276	0.0000000	0_EnsheathingGlia	Nmdar1
0.0047736	-0.2821634	0.366	0.544	1.0000000	5_DA	GluRIB
0.0000000	-0.2808936	0.008	0.274	0.0000000	1_Astrocytes	Nmdar1
0.0000000	-0.2800876	0.009	0.272	0.0000096	13_CortexGlia	Nmdar1
0.0001188	-0.2792699	0.707	0.924	1.0000000	38_Glut	CG11155
0.0000000	-0.2782704	0.006	0.273	0.0000000	8_EnsheathingGlia	Nmdar1
0.0000223	-0.2782098	0.141	0.375	0.2662718	52_ACh	Nmdar2
0.0000000	-0.2776728	0.105	0.376	0.0000000	10_GliaOther	Nmdar2
0.0000000	-0.2776682	0.006	0.272	0.0000000	11_Astrocytes-like	Nmdar1

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000421	0.2770974	1.000	0.883	0.5022112	14_DA-PAM	GluClalpha
0.0000000	-0.2761845	0.008	0.273	0.0000000	5_EnsheathingGlia	Nmdar1
0.0000000	-0.2760117	0.831	0.883	0.0000516	46_ACh	GluClalpha
0.0000530	0.2756063	0.651	0.543	0.6320831	31_SF-EB	GluRIB
0.0034080	0.2738662	0.786	0.543	1.0000000	9_Other-ACh	GluRIB
0.0000000	-0.2738358	0.013	0.273	0.0000000	2_EnsheathingGlia	Nmdar1
0.0030569	0.2733940	0.542	0.271	1.0000000	22_MA_Other	Nmdar1
0.0000323	0.2714098	0.705	0.375	0.3846306	4_DA-PAM	Nmdar2
0.0000000	-0.2697680	0.018	0.278	0.0000000	3_OlfactoryPNs	Nmdar1
0.0000000	-0.2684079	0.756	0.925	0.0000000	9_GABA	CG11155
0.0000052	0.2679890	1.000	0.883	0.0623872	56_ACh	GluClalpha
0.0000000	0.2678894	0.678	0.523	0.0000000	7_GABA	GluRIA
0.0000000	0.2675965	0.795	0.540	0.0000000	1_primeKCs	GluRIB
0.0000000	-0.2669722	0.020	0.273	0.0000000	4_EnsheathingGlia	Nmdar1
0.0001815	-0.2668308	0.453	0.544	1.0000000	15_SurfaceGlia	GluRIB
0.0000000	-0.2665465	0.017	0.272	0.0000000	40_ACh	Nmdar1
0.0028953	-0.2653977	0.273	0.524	1.0000000	4_DA-PAM	GluRIA
0.0000000	-0.2639326	0.337	0.544	0.0001422	17_GABA	GluRIB
0.0000000	-0.2630273	0.275	0.526	0.0000000	22_ACh	GluRIA
0.0000010	-0.2626748	0.272	0.524	0.0113257	24_GABA	GluRIA
0.0008538	-0.2620716	0.027	0.271	1.0000000	56_ACh	Nmdar1
0.0000000	0.2604552	0.661	0.375	0.0000022	43_ACh	Nmdar2
0.0000000	0.2587984	0.966	0.883	0.0000000	15_GABA	GluClalpha
0.0000000	0.2586064	0.743	0.543	0.0000096	42_ACh	GluRIB
0.0000000	-0.2584565	0.949	0.883	0.0000000	3_CortexGlia	GluClalpha
0.0027723	-0.2569211	0.032	0.271	1.0000000	7_Other-ACh	Nmdar1
0.0000001	0.2568381	0.605	0.375	0.0006249	24_GABA	Nmdar2
0.0000000	-0.2562042	0.115	0.377	0.0000000	20_ACh	Nmdar2
0.0000334	-0.2549217	0.162	0.375	0.3986040	50_ACh	Nmdar2
0.0051662	0.2534236	0.667	0.375	1.0000000	20_DA-PAM	Nmdar2
0.0000000	0.2520576	0.942	0.883	0.0000000	25_Glut	GluClalpha
0.0000000	0.2517325	0.501	0.269	0.0000000	19_ACh	Nmdar1
0.0006708	-0.2515808	0.446	0.524	1.0000000	16_EnsheathingGlia	GluRIA
0.0000000	-0.2514923	0.967	0.881	0.0000000	0_EnsheathingGlia	GluClalpha
0.0007770	0.2513633	0.688	0.375	1.0000000	12_DA-PAM	Nmdar2
0.0044929	0.2509412	0.556	0.375	1.0000000	9_DA-PAM	Nmdar2
0.0000000	-0.2506869	0.033	0.272	0.0000000	35_ACh	Nmdar1
0.0000002	0.2497560	0.611	0.375	0.0019455	25_dFB/vFB	Nmdar2
0.0000074	-0.2493512	0.380	0.544	0.0878260	23_GABA	GluRIB
0.0000000	0.2490395	0.963	0.883	0.0000000	37_ACh	GluClalpha
0.0008239	-0.2478500	0.494	0.543	1.0000000	16_EnsheathingGlia	GluRIB
0.0000506	0.2476939	0.735	0.523	0.6035830	36_GABA	GluRIA
0.0000932	-0.2476370	0.337	0.524	1.0000000	26_GABA	GluRIA
0.0000147	0.2468651	0.789	0.543	0.1756098	15_primeKCs	GluRIB
0.0000000	-0.2464782	0.131	0.381	0.0000000	3_OlfactoryPNs	Nmdar2
0.0000003	0.2458626	0.543	0.271	0.0032457	35_GABA	Nmdar1
0.0000234	-0.2454942	0.044	0.271	0.2786464	53_ACh	Nmdar1
0.0000000	0.2449126	0.978	0.879	0.0000000	2_ACh	GluClalpha
0.0000014	-0.2447665	0.045	0.271	0.0167860	46_ACh	Nmdar1
0.0004920	0.2444728	0.529	0.271	1.0000000	10_DA-PAM	Nmdar1
0.0000001	-0.2442541	0.354	0.544	0.0010947	19_Glut	GluRIB
0.0000000	0.2433560	0.759	0.543	0.0000000	9_abKCs	GluRIB

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000025	-0.2432345	0.047	0.271	0.0292970	48_ACh	Nmdar1
0.0000000	-0.2430713	0.371	0.525	0.0000000	2_GABA	GluRIA
0.0000000	0.2413382	0.975	0.882	0.0000000	5_Glut	GluClalpha
0.0000000	-0.2408697	0.904	0.883	0.0000000	9_Astrocytes	GluClalpha
0.0000000	0.2406647	0.510	0.264	0.0000000	1_ACh	Nmdar1
0.0000000	0.2403941	0.960	0.883	0.0000011	27_Glut	GluClalpha
0.0000198	0.2387778	1.000	0.883	0.2362229	37_Glut	GluClalpha
0.0000004	-0.2377521	0.040	0.272	0.0048235	28_GABA	Nmdar1
0.0007694	-0.2377297	0.442	0.544	1.0000000	48_ACh	GluRIB
0.0000000	0.2374548	0.742	0.522	0.0000000	3_GABA	GluRIA
0.0009979	0.2372075	0.838	0.523	1.0000000	56_ACh	GluRIA
0.0000000	-0.2367922	0.991	0.882	0.0000000	8_EnsheathingGlia	GluClalpha
0.0000000	-0.2366148	0.819	0.925	0.0000000	6_Glut	CG11155
0.0014093	0.2355764	0.583	0.271	1.0000000	21_DA-PAM	Nmdar1
0.0000000	0.2332477	0.981	0.882	0.0000000	29_ACh	GluClalpha
0.0094262	-0.2321776	0.833	0.883	1.0000000	20_DA-PAM	GluClalpha
0.0000000	-0.2316094	0.807	0.924	0.0000068	24_GABA	CG11155
0.0002396	-0.2310882	0.791	0.924	1.0000000	37_Glut	CG11155
0.0000001	0.2300201	0.533	0.375	0.0014733	21_GABA	Nmdar2
0.0000002	-0.2289476	0.179	0.376	0.0019286	41_ACh	Nmdar2
0.0000000	-0.2281876	0.046	0.272	0.0000000	10_GliaOther	Nmdar1
0.0068064	0.2268317	0.588	0.375	1.0000000	11_DA-PAM	Nmdar2
0.0000000	0.2267573	0.606	0.374	0.0000000	13_LF-EB	Nmdar2
0.0034606	0.2267363	1.000	0.883	1.0000000	21_DA-PAM	GluClalpha
0.0032919	-0.2264910	0.397	0.524	1.0000000	33_Glut	GluRIA
0.0000000	0.2243218	0.538	0.271	0.0002588	1_Other-ACh	Nmdar1
0.0000000	0.2233458	0.963	0.882	0.0000000	22_ACh	GluClalpha
0.0000000	-0.2226232	0.986	0.882	0.0000000	6_GliaOther	GluClalpha
0.0000003	-0.2226090	0.053	0.272	0.0034577	44_ACh	Nmdar1
0.0019627	0.2215369	0.632	0.375	1.0000000	7_DA-PAM	Nmdar2
0.0000682	0.2200256	0.979	0.883	0.8126164	2_DA-PAM	GluClalpha
0.0000050	0.2198704	0.620	0.543	0.0597401	17_Glut	GluRIB
0.0000447	0.2189618	0.756	0.523	0.5321458	32_GABA	GluRIA
0.0000016	-0.2187341	0.072	0.272	0.0193266	45_ACh	Nmdar1
0.0000000	-0.2181240	0.914	0.924	0.0000002	14_SurfaceGlia	CG11155
0.0000000	0.2164310	0.519	0.271	0.0002445	25_dFB/vFB	Nmdar1
0.0022591	-0.2161857	0.842	0.883	1.0000000	7_DA-PAM	GluClalpha
0.0000000	0.2159846	0.606	0.374	0.0000153	20_Glut	Nmdar2
0.0000000	0.2154352	0.957	0.882	0.0000000	27_ACh	GluClalpha
0.0000855	-0.2153775	0.068	0.271	1.0000000	34_GABA	Nmdar1
0.0007025	-0.2145741	0.189	0.375	1.0000000	34_GABA	Nmdar2
0.0005457	-0.2145546	0.416	0.544	1.0000000	26_GABA	GluRIB
0.0000000	0.2136400	0.501	0.268	0.0000000	0_GABA	Nmdar1
0.0000007	0.2121263	0.930	0.883	0.0082537	52_ACh	GluClalpha
0.0000014	0.2120967	0.534	0.271	0.0163076	33_Glut	Nmdar1
0.0048206	0.2116804	0.780	0.543	1.0000000	39_Glut	GluRIB
0.0000000	-0.2103818	0.384	0.524	0.0000006	10_Glut	GluRIA
0.0000028	-0.2102595	0.928	0.883	0.0328506	34_Glut	GluClalpha
0.0009110	0.2089773	0.742	0.543	1.0000000	6_MA_Other	GluRIB
0.0000000	0.2087296	0.740	0.542	0.0000000	27_ACh	GluRIB
0.0000607	-0.2087124	0.824	0.883	0.7230217	34_GABA	GluClalpha
0.0000000	0.2055479	0.475	0.271	0.0000174	20_Glut	Nmdar1

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000000	0.2046946	0.937	0.883	0.0000000	5_GABA	GluClalpha
0.0000031	-0.2045394	0.214	0.375	0.0364197	20_GABA	Nmdar2
0.0000000	-0.2042938	0.078	0.272	0.0000004	9_abKCs	Nmdar1
0.0085987	0.2041498	0.606	0.375	1.0000000	6_Other-ACh	Nmdar2
0.0000000	0.2041159	0.478	0.269	0.0000000	6_Glut	Nmdar1
0.0000000	0.2029170	0.587	0.369	0.0000000	1_ACh	Nmdar2
0.0039886	0.2020300	1.000	0.924	1.0000000	24_MA_Other	CG11155
0.0000087	-0.2005890	0.853	0.924	0.1038683	36_GABA	CG11155
0.0000000	-0.2005645	0.197	0.376	0.0000000	28_ACh	Nmdar2
0.0000876	0.2000577	0.793	0.543	1.0000000	32_GABA	GluRIB
0.0004627	-0.1997856	0.386	0.544	1.0000000	24_GABA	GluRIB
0.0090603	0.1997684	0.903	0.883	1.0000000	40_GABA	GluClalpha
0.0049199	0.1992718	0.723	0.543	1.0000000	37_GABA	GluRIB
0.0000000	-0.1989710	0.094	0.279	0.0000000	0_yKCs	Nmdar1
0.0000000	0.1988730	0.475	0.267	0.0000000	0_Glut	Nmdar1
0.0000000	0.1983870	0.589	0.374	0.0000000	32_ACh	Nmdar2
0.0000156	0.1981842	0.507	0.271	0.1854842	15_primeKCs	Nmdar1
0.0000000	0.1977411	0.566	0.358	0.0000000	4_ACh	Nmdar2
0.0054238	0.1974727	0.500	0.271	1.0000000	13_DA	Nmdar1
0.0015856	-0.1973580	0.310	0.524	1.0000000	30_Glut	GluRIA
0.0000007	-0.1969205	0.339	0.524	0.0087241	16_GABA	GluRIA
0.0000000	0.1967610	0.483	0.270	0.0000000	13_LF-EB	Nmdar1
0.0006287	-0.1948291	0.097	0.271	1.0000000	51_ACh	Nmdar1
0.0000630	-0.1942052	0.349	0.524	0.7509027	21_GABA	GluRIA
0.0000256	-0.1940878	0.761	0.883	0.3051477	26_Glut	GluClalpha
0.0011811	-0.1938076	0.398	0.544	1.0000000	26_Glut	GluRIB
0.0083058	0.1919357	0.702	0.523	1.0000000	37_GABA	GluRIA
0.0000003	-0.1906072	0.860	0.924	0.0038490	15_SurfaceGlia	CG11155
0.0026189	0.1901851	0.531	0.271	1.0000000	12_DA-PAM	Nmdar1
0.0000114	-0.1898739	0.844	0.924	0.1356053	33_GABA	CG11155
0.0000000	-0.1897422	1.000	0.883	0.0000000	11_Astrocytes-like	GluClalpha
0.0000435	-0.1893514	0.835	0.883	0.5185139	1_Other-ACh	GluClalpha
0.0000001	0.1886201	0.650	0.543	0.0008542	14_Glut	GluRIB
0.0003873	-0.1885607	0.072	0.271	1.0000000	34_Glut	Nmdar1
0.0034782	-0.1883993	0.219	0.375	1.0000000	32_Glut	Nmdar2
0.0009482	0.1881728	0.974	0.924	1.0000000	7_DA-PAM	CG11155
0.0000000	-0.1879380	0.402	0.544	0.0000323	10_Glut	GluRIB
0.0000000	0.1878225	0.454	0.270	0.0000000	12_Glut	Nmdar1
0.0000001	-0.1876687	0.211	0.376	0.0014583	9_abKCs	Nmdar2
0.0036260	-0.1873443	0.211	0.375	1.0000000	15_primeKCs	Nmdar2
0.0023514	-0.1872168	0.872	0.883	1.0000000	37_GABA	GluClalpha
0.0000000	0.1870780	0.465	0.374	0.0000076	5_GABA	Nmdar2
0.0082151	-0.1864107	0.780	0.924	1.0000000	39_Glut	CG11155
0.0011898	-0.1864003	0.426	0.524	1.0000000	23_GABA	GluRIA
0.0024529	-0.1852581	0.077	0.271	1.0000000	2_IPCs	Nmdar1
0.0000000	-0.1852379	0.834	0.883	0.0003392	19_Glut	GluClalpha
0.0000000	0.1849344	0.944	0.881	0.0000000	2_abKCs	GluClalpha
0.0000000	0.1848501	0.658	0.543	0.0000604	7_GABA	GluRIB
0.0000000	-0.1845078	0.837	0.924	0.0000002	15_GABA	CG11155
0.0000002	0.1840870	0.982	0.883	0.0027842	45_ACh	GluClalpha
0.0020261	-0.1838622	0.803	0.883	1.0000000	6_MA_Other	GluClalpha
0.0027486	0.1837674	0.976	0.883	1.0000000	38_Glut	GluClalpha

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000000	0.1837329	0.674	0.523	0.0000020	11_Glut	GluRIA
0.0000044	-0.1836075	0.234	0.376	0.0525174	18_Glut	Nmdar2
0.0000003	-0.1834711	0.820	0.883	0.0031424	19_GABA	GluClalpha
0.0057115	0.1801913	0.444	0.271	1.0000000	3_DA-PAM	Nmdar1
0.0000225	-0.1801297	0.804	0.924	0.2677820	29_GABA	CG11155
0.0000000	0.1800142	0.944	0.883	0.0000001	16_Glut	GluClalpha
0.0000000	0.1797713	0.973	0.924	0.0000141	13_CortexGlia	CG11155
0.0000000	0.1797659	0.619	0.543	0.0000407	5_GABA	GluRIB
0.0000001	0.1793583	0.938	0.883	0.0017195	24_Glut	GluClalpha
0.0000000	-0.1779062	0.084	0.273	0.0000000	20_ACh	Nmdar1
0.0003693	-0.1774255	0.078	0.271	1.0000000	0_Other-ACh-DA	Nmdar1
0.0000000	-0.1771005	0.084	0.273	0.0000000	17_ACh	Nmdar1
0.0000000	-0.1760318	0.416	0.544	0.0000585	8_Glut	GluRIB
0.0000000	0.1760253	0.964	0.883	0.0000005	17_Glut	GluClalpha
0.0006403	0.1745030	0.510	0.271	1.0000000	1_DA-PAM	Nmdar1
0.0059290	0.1744805	0.447	0.271	1.0000000	38_GABA	Nmdar1
0.0000000	0.1739190	0.381	0.270	0.0000014	5_GABA	Nmdar1
0.0069952	0.1728376	0.455	0.271	1.0000000	4_DA-PAM	Nmdar1
0.0000000	-0.1726766	0.825	0.924	0.0000111	14_GABA	CG11155
0.0000000	0.1723959	0.551	0.374	0.0000001	31_ACh	Nmdar2
0.0003047	-0.1718438	0.837	0.883	1.0000000	48_ACh	GluClalpha
0.0015363	-0.1705679	0.099	0.271	1.0000000	52_ACh	Nmdar1
0.0000000	-0.1702025	0.441	0.544	0.0000526	2_GABA	GluRIB
0.0075152	0.1701765	0.875	0.883	1.0000000	12_DA-PAM	GluClalpha
0.0002666	-0.1687552	0.399	0.524	1.0000000	17_GABA	GluRIA
0.0000155	0.1679224	0.562	0.375	0.1850572	24_Glut	Nmdar2
0.0000015	-0.1678713	0.239	0.376	0.0173474	8_primeKCs	Nmdar2
0.0000002	-0.1677932	0.435	0.544	0.0017952	9_Glut	GluRIB
0.0001482	0.1677722	1.000	0.883	1.0000000	0_Other-ACh-DA	GluClalpha
0.0072100	0.1672987	0.697	0.523	1.0000000	6_MA_Other	GluRIA
0.0000001	-0.1671850	0.094	0.272	0.0007864	39_ACh	Nmdar1
0.0088769	-0.1661283	0.396	0.544	1.0000000	1_Other-ACh	GluRIB
0.0005311	-0.1657977	0.094	0.271	1.0000000	28_Glut	Nmdar1
0.0000017	0.1655787	0.475	0.271	0.0199756	25_Glut	Nmdar1
0.0000000	0.1654971	0.937	0.883	0.0000000	2_GABA	GluClalpha
0.0000000	-0.1653785	0.432	0.547	0.0000000	9_ACh	GluRIB
0.0000000	-0.1653241	0.211	0.376	0.0000032	6_GABA	Nmdar2
0.0000000	0.1648656	0.538	0.374	0.0000000	19_ACh	Nmdar2
0.0032626	0.1645759	1.000	0.924	1.0000000	10_DA-PAM	CG11155
0.0001594	-0.1644746	0.859	0.883	1.0000000	28_GABA	GluClalpha
0.0000000	0.1640619	0.565	0.374	0.0000057	14_Glut	Nmdar2
0.0002674	-0.1627686	0.849	0.924	1.0000000	33_Glut	CG11155
0.0000000	-0.1625033	0.986	0.924	0.0000000	6_GliaOther	CG11155
0.0000000	0.1615279	0.966	0.882	0.0000000	10_Glut	GluClalpha
0.0000029	0.1609485	0.465	0.271	0.0342269	23_GABA	Nmdar1
0.0000000	0.1607366	0.966	0.882	0.0000000	11_Glut	GluClalpha
0.0053180	-0.1597048	0.188	0.375	1.0000000	34_Glut	Nmdar2
0.0000000	-0.1596708	0.242	0.377	0.0000000	1_primeKCs	Nmdar2
0.0023959	0.1593975	0.885	0.883	1.0000000	36_Glut	GluClalpha
0.0000000	-0.1591746	0.402	0.545	0.0000000	16_ACh	GluRIB
0.0000000	-0.1585317	0.868	0.924	0.0001719	18_GABA	CG11155
0.0000000	-0.1583646	0.118	0.272	0.0000028	6_abKCs	Nmdar1

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0010571	-0.1581008	0.192	0.375	1.0000000	28_GABA	Nmdar2
0.0049603	0.1580438	0.746	0.543	1.0000000	52_ACh	GluRIB
0.0011444	0.1576458	0.455	0.271	1.0000000	6_MA_Other	Nmdar1
0.0002454	0.1576156	0.988	0.883	1.0000000	30_Glut	GluClalpha
0.0000000	-0.1575512	0.994	0.924	0.0000000	11_Astrocytes-like	CG11155
0.0000000	-0.1570953	0.236	0.376	0.0001654	29_ACh	Nmdar2
0.0000436	-0.1569408	0.878	0.883	0.5196763	43_ACh	GluClalpha
0.0041940	-0.1546236	0.968	0.924	1.0000000	40_GABA	CG11155
0.0025634	0.1544858	0.977	0.924	1.0000000	4_DA-PAM	CG11155
0.0000001	0.1544211	0.453	0.271	0.0013734	19_Glut	Nmdar1
0.0073876	0.1543832	0.440	0.271	1.0000000	0_TA	Nmdar1
0.0002964	0.1533197	0.598	0.375	1.0000000	47_ACh	Nmdar2
0.0000000	0.1532380	0.423	0.270	0.0000044	32_ACh	Nmdar1
0.0000166	-0.1531222	0.255	0.376	0.1972676	37_ACh	Nmdar2
0.0000000	0.1528755	0.969	0.924	0.0000000	5_GABA	CG11155
0.0011005	0.1521994	0.427	0.271	1.0000000	32_GABA	Nmdar1
0.0011391	0.1521114	0.973	0.883	1.0000000	33_Glut	GluClalpha
0.0000000	0.1514196	0.697	0.543	0.0001313	11_Glut	GluRIB
0.0065878	0.1510390	0.971	0.924	1.0000000	11_DA-PAM	CG11155
0.0000000	-0.1499391	0.191	0.377	0.0000000	17_ACh	Nmdar2
0.0008030	0.1497597	0.980	0.924	1.0000000	1_DA-PAM	CG11155
0.0000000	0.1497513	0.701	0.542	0.0000029	3_GABA	GluRIB
0.0000000	0.1493147	0.921	0.883	0.0000228	10_abKCs	GluClalpha
0.0006384	0.1482126	0.424	0.271	1.0000000	27_Glut	Nmdar1
0.0000000	-0.1472353	0.232	0.376	0.0000007	22_ACh	Nmdar2
0.0000000	0.1465933	0.422	0.269	0.0000000	1_primeKCs	Nmdar1
0.0006132	0.1461570	0.531	0.375	1.0000000	26_Glut	Nmdar2
0.0000000	-0.1457019	0.635	0.542	0.0000079	0_EnsheathingGlia	GluRIB
0.0000000	-0.1452615	0.994	0.923	0.0000000	8_EnsheathingGlia	CG11155
0.0000000	0.1451146	0.421	0.270	0.0000000	3_GABA	Nmdar1
0.0003704	0.1440942	0.417	0.271	1.0000000	43_ACh	Nmdar1
0.0000061	0.1439758	0.941	0.883	0.0727468	21_GABA	GluClalpha
0.0000000	-0.1432426	0.600	0.522	0.0000559	0_EnsheathingGlia	GluRIA
0.0001171	0.1430299	0.442	0.271	1.0000000	26_Glut	Nmdar1
0.0030079	-0.1426866	0.119	0.271	1.0000000	30_Glut	Nmdar1
0.0003907	-0.1423686	0.605	0.523	1.0000000	3_CortexGlia	GluRIA
0.0034287	-0.1421890	0.182	0.375	1.0000000	0_Other-ACh-DA	Nmdar2
0.0030974	0.1420572	1.000	0.924	1.0000000	2_DA-PAM	CG11155
0.0009310	-0.1414446	0.236	0.375	1.0000000	42_ACh	Nmdar2
0.0000000	-0.1398264	0.423	0.527	0.0000000	9_ACh	GluRIA
0.0000043	0.1392832	0.601	0.543	0.0511493	28_ACh	GluRIB
0.0000000	0.1388891	0.521	0.372	0.0000000	0_Glut	Nmdar2
0.0003077	0.1374854	0.986	0.924	1.0000000	51_ACh	CG11155
0.0000000	-0.1372065	0.913	0.924	0.0000000	5_EnsheathingGlia	CG11155
0.0022768	0.1366129	0.549	0.375	1.0000000	1_Other-ACh	Nmdar2
0.0000000	-0.1360944	0.144	0.272	0.0002141	28_ACh	Nmdar1
0.0000000	-0.1359175	0.137	0.272	0.0000906	29_ACh	Nmdar1
0.0000000	-0.1356213	0.852	0.925	0.0000000	19_ACh	CG11155
0.0000000	-0.1355934	0.443	0.547	0.0000000	5_ACh	GluRIB
0.0010045	0.1354194	0.744	0.543	1.0000000	22_GABA	GluRIB
0.0003845	-0.1353953	0.139	0.271	1.0000000	42_ACh	Nmdar1
0.0000005	-0.1352472	0.880	0.924	0.0061247	16_GABA	CG11155

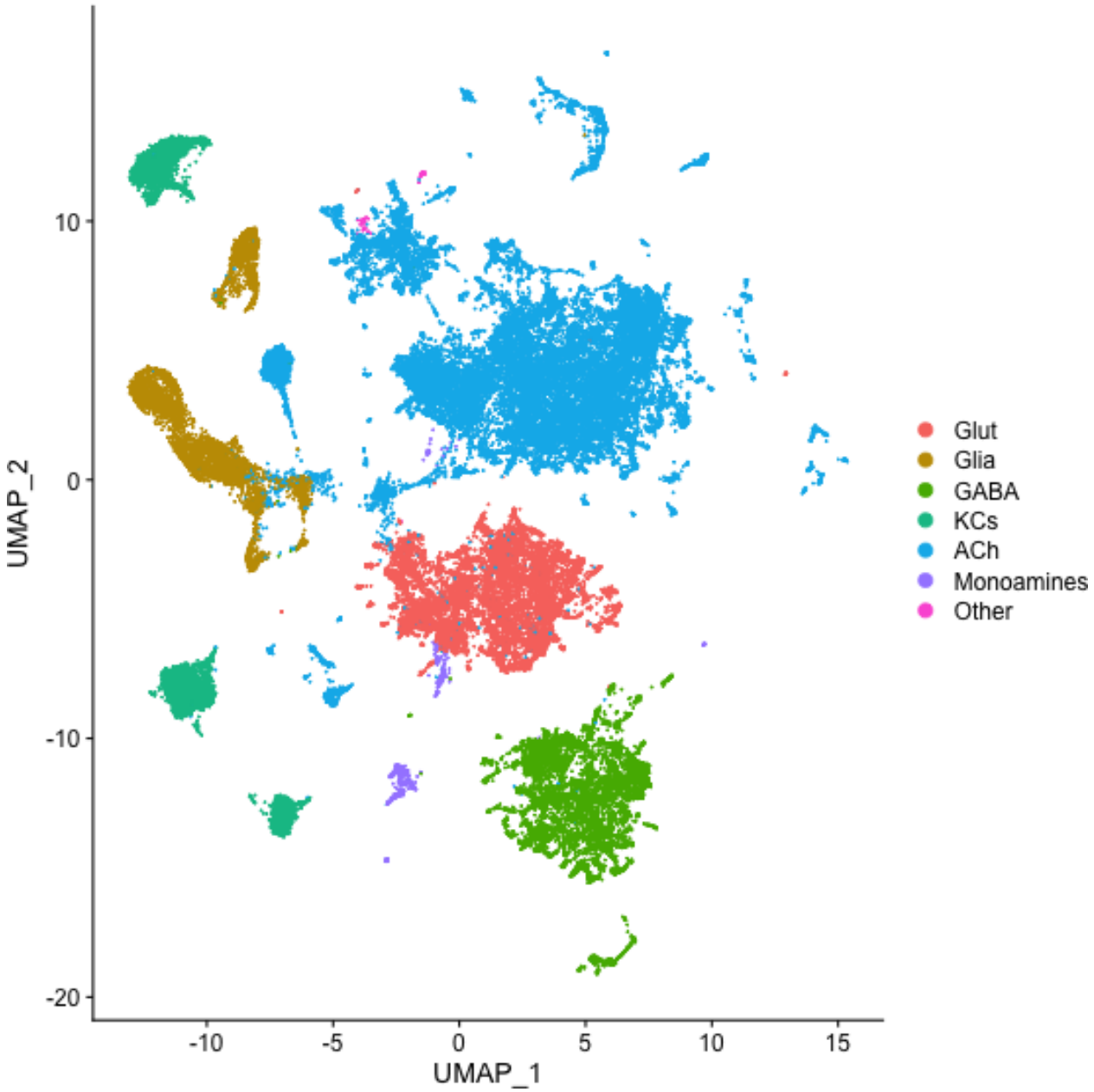
p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000000	-0.1350097	0.144	0.275	0.0000000	2_abKCs	Nmdar1
0.0000152	0.1335434	0.655	0.523	0.1812942	9_abKCs	GluRIA
0.0001400	0.1332324	0.517	0.375	1.0000000	18_GABA	Nmdar2
0.0009403	-0.1331346	0.770	0.883	1.0000000	18_GABA	GluClalpha
0.0000000	0.1328153	0.143	0.003	0.0000000	24_MA_Other	clumsy
0.0000000	0.1319040	0.517	0.374	0.0000190	24_ACh	Nmdar2
0.0000023	0.1315741	0.437	0.271	0.0271767	16_GABA	Nmdar1
0.0000057	0.1308954	0.652	0.523	0.0679887	8_GABA	GluRIA
0.0000000	-0.1308610	0.130	0.272	0.0000588	6_GABA	Nmdar1
0.0085906	0.1306299	0.642	0.543	1.0000000	25_Glut	GluRIB
0.0000000	0.1293727	0.953	0.924	0.0000029	9_abKCs	CG11155
0.0000452	0.1289945	0.956	0.924	0.5388954	1_Other-ACh	CG11155
0.0049279	0.1279201	0.386	0.271	1.0000000	26_GABA	Nmdar1
0.0000132	-0.1267828	0.289	0.376	0.1575879	9_Glut	Nmdar2
0.0000000	-0.1265970	0.258	0.379	0.0000000	2_abKCs	Nmdar2
0.0000293	-0.1265281	0.149	0.272	0.3497480	10_abKCs	Nmdar1
0.0000000	0.1263440	0.499	0.371	0.0000000	5_ACh	Nmdar2
0.0000000	0.1262905	0.915	0.883	0.0004177	6_abKCs	GluClalpha
0.0000000	-0.1261612	0.129	0.272	0.0000000	5_Glut	Nmdar1
0.0011692	0.1256397	0.451	0.271	1.0000000	31_Glut	Nmdar1
0.0000000	0.1256146	0.388	0.270	0.0000000	15_ACh	Nmdar1
0.0000004	-0.1243935	0.848	0.883	0.0046673	31_ACh	GluClalpha
0.0000000	-0.1243279	0.856	0.883	0.0001103	8_Glut	GluClalpha
0.0000000	0.1241039	0.955	0.882	0.0001437	7_Glut	GluClalpha
0.0001081	-0.1239376	0.440	0.524	1.0000000	26_ACh	GluRIA
0.0000000	0.1231004	0.627	0.542	0.0000000	10_ACh	GluRIB
0.0009754	-0.1219110	0.151	0.271	1.0000000	21_GABA	Nmdar1
0.0000111	0.1210681	0.489	0.374	0.1317853	12_Glut	Nmdar2
0.0031698	-0.1210473	0.656	0.543	1.0000000	3_CortexGlia	GluRIB
0.0005850	-0.1196977	0.221	0.376	1.0000000	40_ACh	Nmdar2
0.0013140	0.1191371	0.694	0.523	1.0000000	23_Glut	GluRIA
0.0028751	0.1189619	0.685	0.543	1.0000000	21_Glut	GluRIB
0.0000000	0.1186158	0.500	0.373	0.0000000	11_ACh	Nmdar2
0.0001449	-0.1178140	0.462	0.544	1.0000000	26_ACh	GluRIB
0.0000028	0.1173510	0.396	0.271	0.0330061	14_Glut	Nmdar1
0.0000000	0.1164583	0.502	0.374	0.0000001	15_ACh	Nmdar2
0.0009226	0.1160250	0.994	0.883	1.0000000	40_ACh	GluClalpha
0.0000000	0.1159837	0.634	0.520	0.0000000	0_ACh	GluRIA
0.0000000	0.1150715	0.588	0.522	0.0000010	0_Glut	GluRIA
0.0056643	0.1128124	0.935	0.883	1.0000000	30_GABA	GluClalpha
0.0000003	-0.1122953	0.471	0.544	0.0040730	0_GABA	GluRIB
0.0000000	0.1119340	0.619	0.522	0.0000236	1_GABA	GluRIA
0.0000000	0.1119163	0.940	0.882	0.0000000	10_ACh	GluClalpha
0.0000000	0.1118894	0.994	0.923	0.0000000	17_ACh	CG11155
0.0001150	0.1116644	0.582	0.523	1.0000000	28_ACh	GluRIA
0.0007593	-0.1116091	0.842	0.883	1.0000000	16_GABA	GluClalpha
0.0000005	0.1108302	0.510	0.374	0.0061717	27_ACh	Nmdar2
0.0020257	0.1107716	0.958	0.924	1.0000000	15_primeKCs	CG11155
0.0039484	-0.1103018	0.861	0.924	1.0000000	26_GABA	CG11155
0.0004406	-0.1097077	0.452	0.524	1.0000000	8_Glut	GluRIA
0.0000000	0.1096334	0.396	0.269	0.0000000	11_ACh	Nmdar1
0.0000000	-0.1085945	0.922	0.924	0.0000000	6_GABA	CG11155

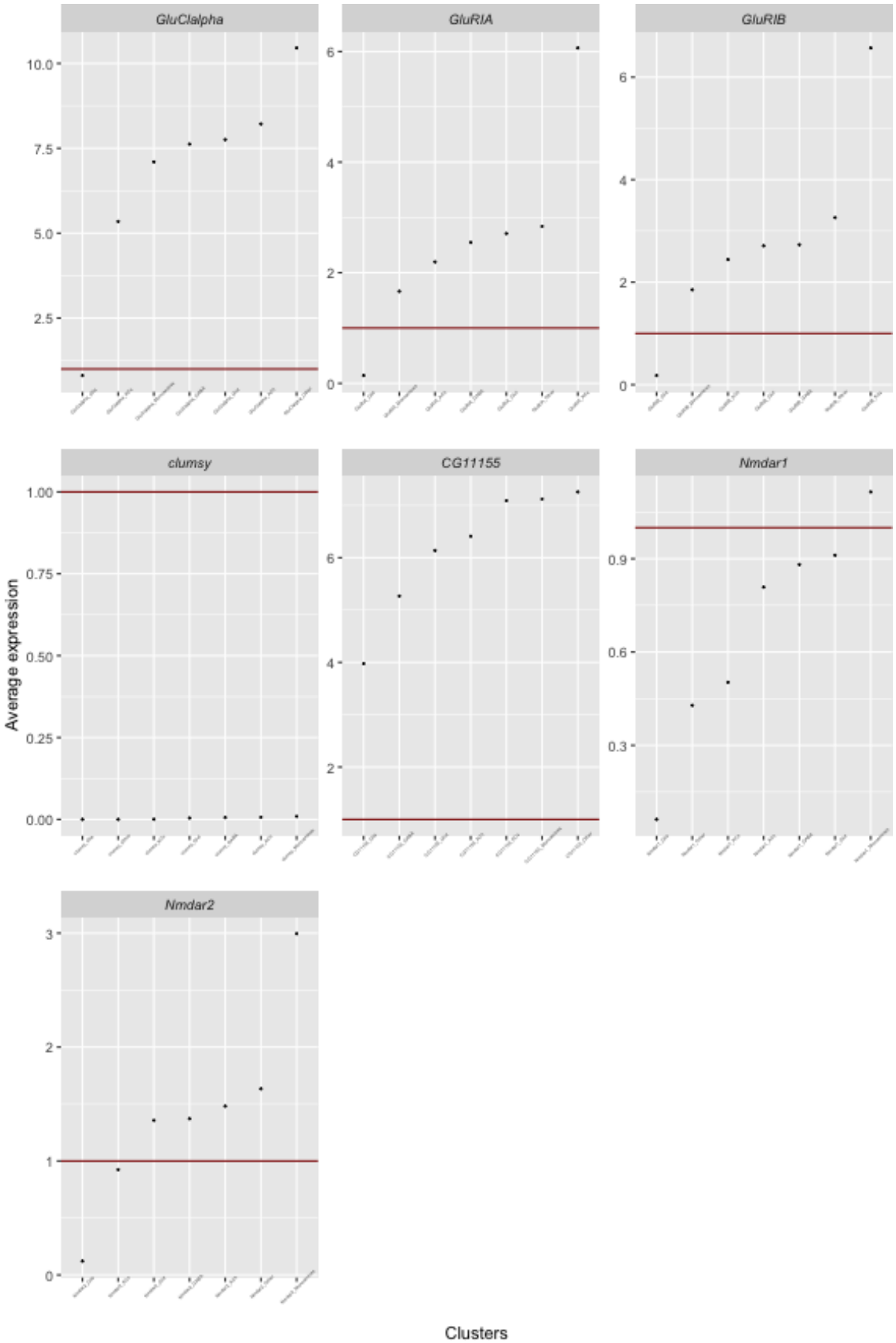
p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0001391	-0.1083704	0.922	0.924	1.0000000	22_GABA	CG11155
0.0047751	0.1074545	0.656	0.523	1.0000000	20_Glut	GluRIA
0.0000000	0.1071343	0.987	0.882	0.0000039	17_ACh	GluClalpha
0.0000073	0.1068987	0.929	0.924	0.0874745	41_ACh	CG11155
0.0026500	0.1060501	0.608	0.523	1.0000000	14_Glut	GluRIA
0.0000000	-0.1053568	0.870	0.924	0.0001891	4_GABA	CG11155
0.0000000	-0.1042093	0.166	0.275	0.0000000	2_ACh	Nmdar1
0.0000000	0.1036040	0.939	0.881	0.0000000	5_ACh	GluClalpha
0.0000000	0.1029412	0.944	0.923	0.0000000	2_abKCs	CG11155
0.0031030	-0.1029198	0.426	0.544	1.0000000	16_GABA	GluRIB
0.0009784	-0.1028170	0.254	0.375	1.0000000	10_abKCs	Nmdar2
0.0000000	0.1016942	0.635	0.540	0.0000000	0_ACh	GluRIB
0.0000031	0.1016352	0.376	0.271	0.0372144	10_Glut	Nmdar1
0.0020410	0.1015636	0.615	0.543	1.0000000	8_GABA	GluRIB
0.0053459	-0.1015588	0.865	0.883	1.0000000	22_Glut	GluClalpha
0.0000004	-0.1004168	0.893	0.924	0.0045248	32_ACh	CG11155
0.0002652	0.1004057	0.404	0.271	1.0000000	17_GABA	Nmdar1
0.0000682	-0.1002817	0.282	0.376	0.8124606	26_ACh	Nmdar2
0.0000000	-0.0993916	0.457	0.526	0.0000000	5_ACh	GluRIA
0.0000000	0.0992467	0.480	0.373	0.0000000	10_ACh	Nmdar2
0.0000000	0.0989760	0.377	0.262	0.0000000	4_ACh	Nmdar1
0.0000287	0.0984803	0.950	0.924	0.3419761	19_Glut	CG11155
0.0000000	-0.0966029	0.467	0.525	0.0001698	14_ACh	GluRIA
0.0017071	-0.0961127	0.964	0.924	1.0000000	16_EnsheathingGlia	CG11155
0.0005623	0.0954351	0.579	0.543	1.0000000	19_ACh	GluRIB
0.0000004	-0.0934095	0.878	0.924	0.0047407	7_Glut	CG11155
0.0000000	-0.0931929	0.985	0.923	0.0000000	0_EnsheathingGlia	CG11155
0.0000000	0.0924228	0.959	0.924	0.0000099	22_ACh	CG11155
0.0003385	0.0917096	0.582	0.523	1.0000000	19_ACh	GluRIA
0.0000001	-0.0914854	0.483	0.545	0.0007172	14_ACh	GluRIB
0.0000006	-0.0913033	0.956	0.924	0.0075495	9_Astrocytes	CG11155
0.0068267	-0.0908736	0.880	0.924	1.0000000	27_GABA	CG11155
0.0000004	-0.0906674	0.245	0.376	0.0045345	5_Glut	Nmdar2
0.0000182	0.0905443	0.399	0.271	0.2169745	9_GABA	Nmdar1
0.0000001	0.0904449	0.918	0.883	0.0011068	6_Glut	GluClalpha
0.0000003	-0.0900012	0.881	0.924	0.0033302	24_ACh	CG11155
0.0000073	0.0894874	0.607	0.543	0.0872163	1_GABA	GluRIB
0.0003104	0.0893750	0.940	0.883	1.0000000	7_GABA	GluClalpha
0.0091685	0.0890790	0.380	0.271	1.0000000	22_GABA	Nmdar1
0.0001137	-0.0883312	0.878	0.924	1.0000000	8_GABA	CG11155
0.0000415	-0.0876327	0.937	0.883	0.4940979	10_GliaOther	GluClalpha
0.0000074	-0.0873975	0.887	0.883	0.0880079	3_GABA	GluClalpha
0.0000004	0.0867651	0.957	0.924	0.0043794	28_ACh	CG11155
0.0051531	0.0851232	0.925	0.883	1.0000000	20_Glut	GluClalpha
0.0000076	0.0849485	0.938	0.883	0.0900383	10_GABA	GluClalpha
0.0000000	0.0848670	0.936	0.923	0.0000000	0_ACh	CG11155
0.0000878	0.0841965	0.918	0.883	1.0000000	32_ACh	GluClalpha
0.0006918	0.0839253	0.924	0.924	1.0000000	42_ACh	CG11155
0.0000000	0.0823842	0.922	0.882	0.0000008	2_Glut	GluClalpha
0.0000023	-0.0804788	0.890	0.924	0.0275438	2_GABA	CG11155
0.0000000	0.0798086	0.358	0.269	0.0000000	9_ACh	Nmdar1
0.0027454	-0.0798015	0.206	0.272	1.0000000	11_Glut	Nmdar1

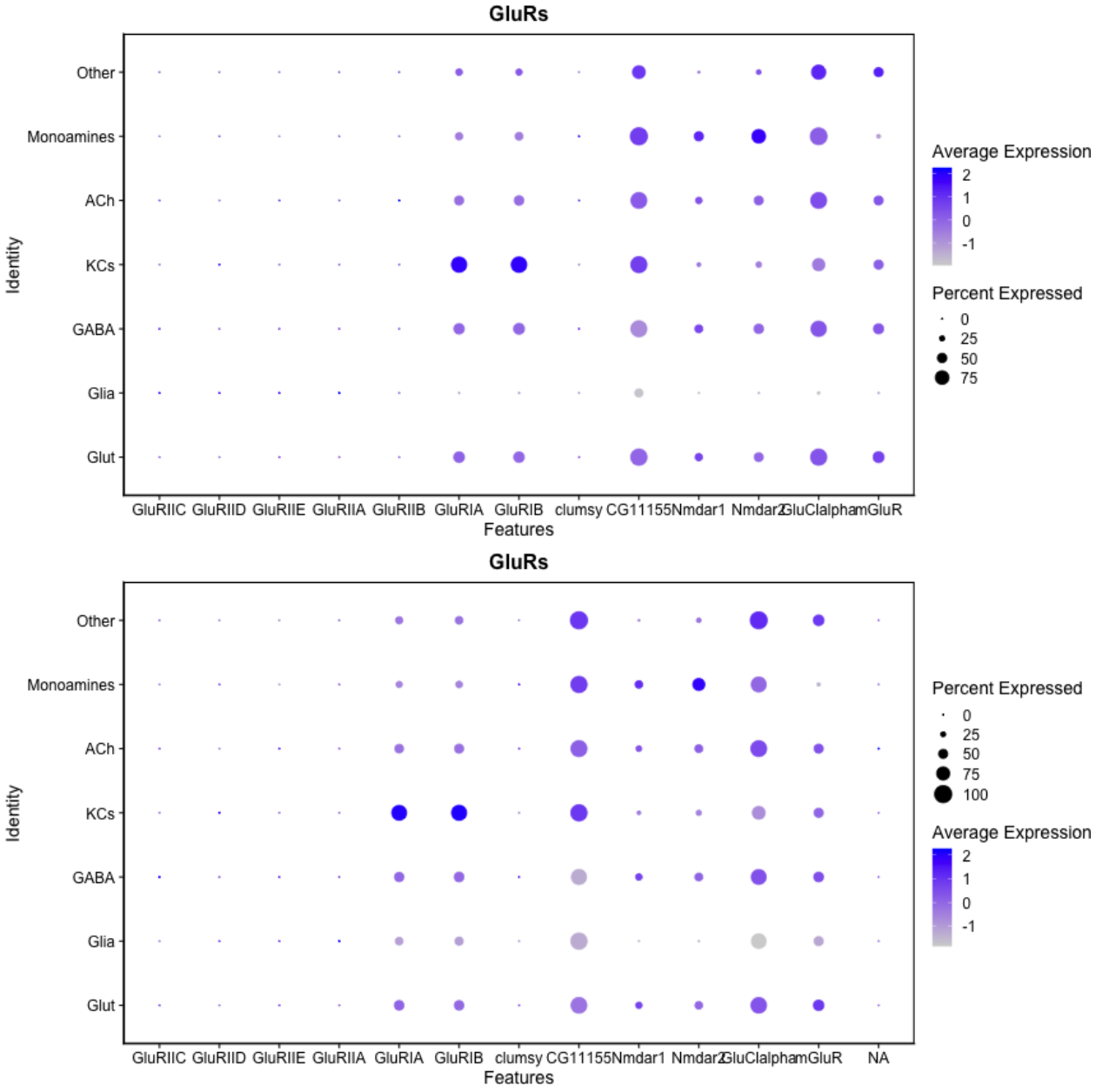
p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0000060	0.0797830	0.371	0.270	0.0709457	2_GABA	Nmdar1
0.0022035	0.0797344	0.361	0.271	1.0000000	16_Glut	Nmdar1
0.0000000	0.0794002	0.904	0.882	0.0000000	1_ACh	GluClalpha
0.0004779	0.0787999	0.945	0.924	1.0000000	13_LF-EB	CG11155
0.0000000	-0.0782719	0.311	0.378	0.0000000	0_yKCs	Nmdar2
0.0000146	0.0779369	0.910	0.883	0.1744827	28_ACh	GluClalpha
0.0000736	-0.0777693	0.447	0.524	0.8769750	16_ACh	GluRIA
0.0000029	0.0775566	0.466	0.374	0.0341462	16_ACh	Nmdar2
0.0000000	0.0769529	0.945	0.924	0.0000000	1_primeKCs	CG11155
0.0000041	0.0758907	0.590	0.522	0.0491932	10_ACh	GluRIA
0.0049876	0.0757203	0.517	0.375	1.0000000	17_GABA	Nmdar2
0.0000186	0.0755614	0.361	0.270	0.2218402	10_GABA	Nmdar1
0.0000350	0.0751837	0.365	0.270	0.4171542	24_ACh	Nmdar1
0.0003706	0.0751568	0.925	0.924	1.0000000	10_abKCs	CG11155
0.0037890	0.0748447	0.370	0.271	1.0000000	14_GABA	Nmdar1
0.0058645	-0.0740931	0.503	0.544	1.0000000	4_Glut	GluRIB
0.0000001	0.0730723	0.917	0.883	0.0010747	15_ACh	GluClalpha
0.0062571	0.0723650	0.495	0.375	1.0000000	15_GABA	Nmdar2
0.0000487	0.0716529	0.905	0.924	0.5809122	37_ACh	CG11155
0.0000001	-0.0707038	0.847	0.884	0.0014219	0_Glut	GluClalpha
0.0000008	0.0703870	0.475	0.374	0.0096080	0_GABA	Nmdar2
0.0000000	-0.0691031	0.956	0.882	0.0003485	20_ACh	GluClalpha
0.0000000	-0.0685426	0.881	0.883	0.0000094	1_Glut	GluClalpha
0.0000000	-0.0677300	0.976	0.923	0.0000000	20_ACh	CG11155
0.0000000	-0.0667286	0.904	0.924	0.0000000	1_ACh	CG11155
0.0003956	0.0662962	0.937	0.924	1.0000000	12_Glut	CG11155
0.0000000	0.0661174	0.949	0.923	0.0000000	0_yKCs	CG11155
0.0002311	-0.0655190	0.909	0.924	1.0000000	10_Glut	CG11155
0.0001985	0.0650363	0.358	0.271	1.0000000	7_Glut	Nmdar1
0.0000385	0.0649448	0.940	0.924	0.4582621	26_ACh	CG11155
0.0016779	-0.0644436	0.470	0.524	1.0000000	0_GABA	GluRIA
0.0019429	-0.0633478	0.872	0.924	1.0000000	3_GABA	CG11155
0.0000000	0.0609817	0.344	0.269	0.0000000	5_ACh	Nmdar1
0.0001841	-0.0607604	0.932	0.883	1.0000000	6_GABA	GluClalpha
0.0000000	-0.0606137	0.901	0.924	0.0001270	0_Glut	CG11155
0.0000036	0.0601231	0.580	0.522	0.0432073	1_ACh	GluRIA
0.0000036	0.0600396	0.956	0.923	0.0428521	8_ACh	CG11155
0.0006552	-0.0596806	0.896	0.924	1.0000000	10_GABA	CG11155
0.0007059	0.0577240	0.576	0.543	1.0000000	0_Glut	GluRIB
0.0000000	0.0574884	0.917	0.924	0.0000263	10_ACh	CG11155
0.0042412	0.0553099	0.336	0.271	1.0000000	8_Glut	Nmdar1
0.0086877	-0.0538290	0.443	0.524	1.0000000	24_ACh	GluRIA
0.0003093	-0.0535176	0.476	0.545	1.0000000	3_OlfactoryPNs	GluRIB
0.0000020	0.0530893	0.325	0.270	0.0237901	14_ACh	Nmdar1
0.0012346	-0.0524369	0.202	0.272	1.0000000	22_ACh	Nmdar1
0.0000001	0.0524015	0.437	0.373	0.0011614	0_ACh	Nmdar2
0.0000000	0.0521037	0.333	0.269	0.0000267	0_ACh	Nmdar1
0.0017181	-0.0513689	0.847	0.884	1.0000000	11_ACh	GluClalpha
0.0093165	-0.0512659	0.512	0.544	1.0000000	11_ACh	GluRIB
0.0000006	0.0511426	0.925	0.882	0.0068524	14_ACh	GluClalpha
0.0000000	0.0511057	0.945	0.923	0.0000000	2_ACh	CG11155
0.0001521	0.0500834	0.340	0.270	1.0000000	16_ACh	Nmdar1

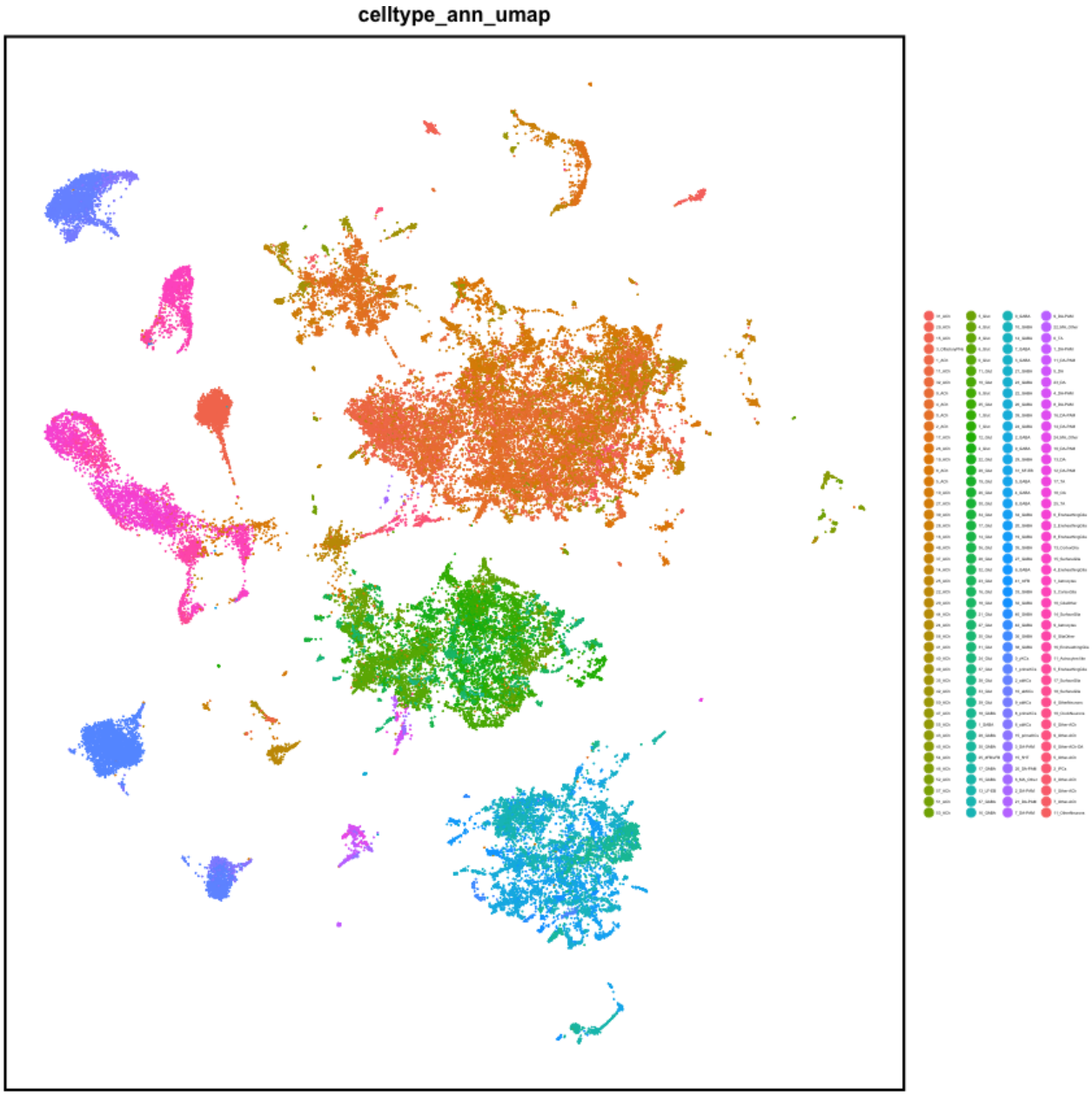
p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0.0051956	-0.0492883	0.531	0.544	1.0000000	1_Glut	GluRIB
0.0000000	0.0477025	0.932	0.924	0.0000095	1_Glut	CG11155
0.0000000	0.0476940	0.565	0.520	0.0000285	4_ACh	GluRIA
0.0001462	0.0458754	0.936	0.924	1.0000000	16_ACh	CG11155
0.0000758	0.0456201	0.983	0.922	0.9030366	3_OlfactoryPNs	CG11155
0.0091187	0.0442879	0.451	0.375	1.0000000	3_GABA	Nmdar2
0.0047723	-0.0422686	0.950	0.924	1.0000000	10_GliaOther	CG11155
0.0000811	-0.0421185	0.211	0.272	0.9660937	8_ACh	Nmdar1
0.0000104	0.0403819	0.941	0.923	0.1238814	14_ACh	CG11155
0.0003105	0.0403214	0.430	0.374	1.0000000	14_ACh	Nmdar2
0.0000363	-0.0402389	0.896	0.883	0.4326631	0_ACh	GluClalpha
0.0020738	-0.0389779	0.320	0.376	1.0000000	8_ACh	Nmdar2
0.0001857	0.0378199	0.924	0.924	1.0000000	2_Glut	CG11155
0.0000008	0.0347116	0.927	0.924	0.0093267	9_ACh	CG11155
0.0008999	0.0329100	0.310	0.270	1.0000000	1_Glut	Nmdar1
0.0063621	0.0324094	0.582	0.542	1.0000000	1_ACh	GluRIB
0.0003973	0.0320408	0.426	0.374	1.0000000	9_ACh	Nmdar2
0.0002610	-0.0300052	0.993	0.923	1.0000000	3_CortexGlia	CG11155
0.0019882	0.0237829	0.934	0.924	1.0000000	5_ACh	CG11155
0.0000152	0.0186755	0.926	0.924	0.1816250	4_ACh	CG11155
0.0024356	0.0184268	0.571	0.541	1.0000000	4_ACh	GluRIB

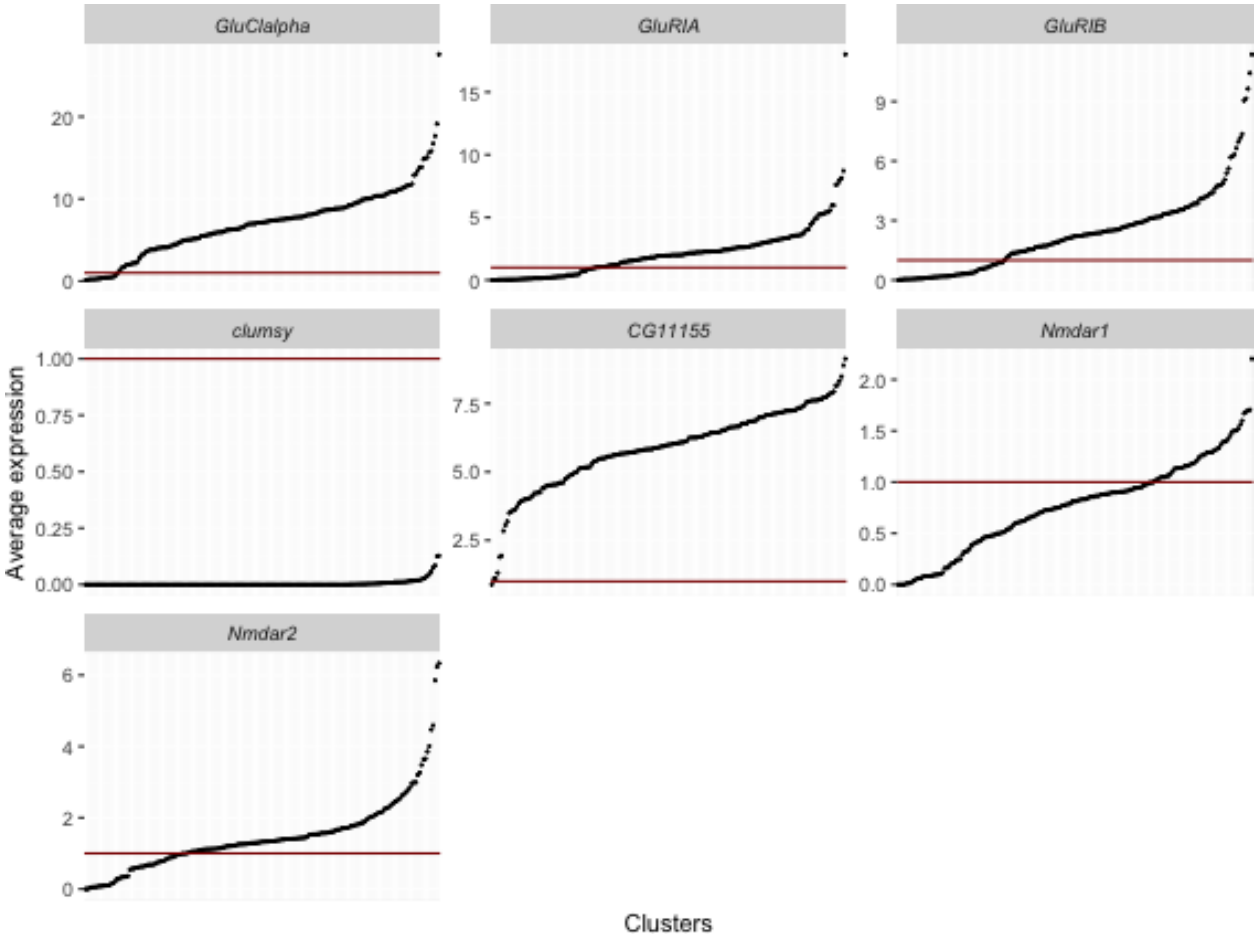
How many neurons express the different GluRs?

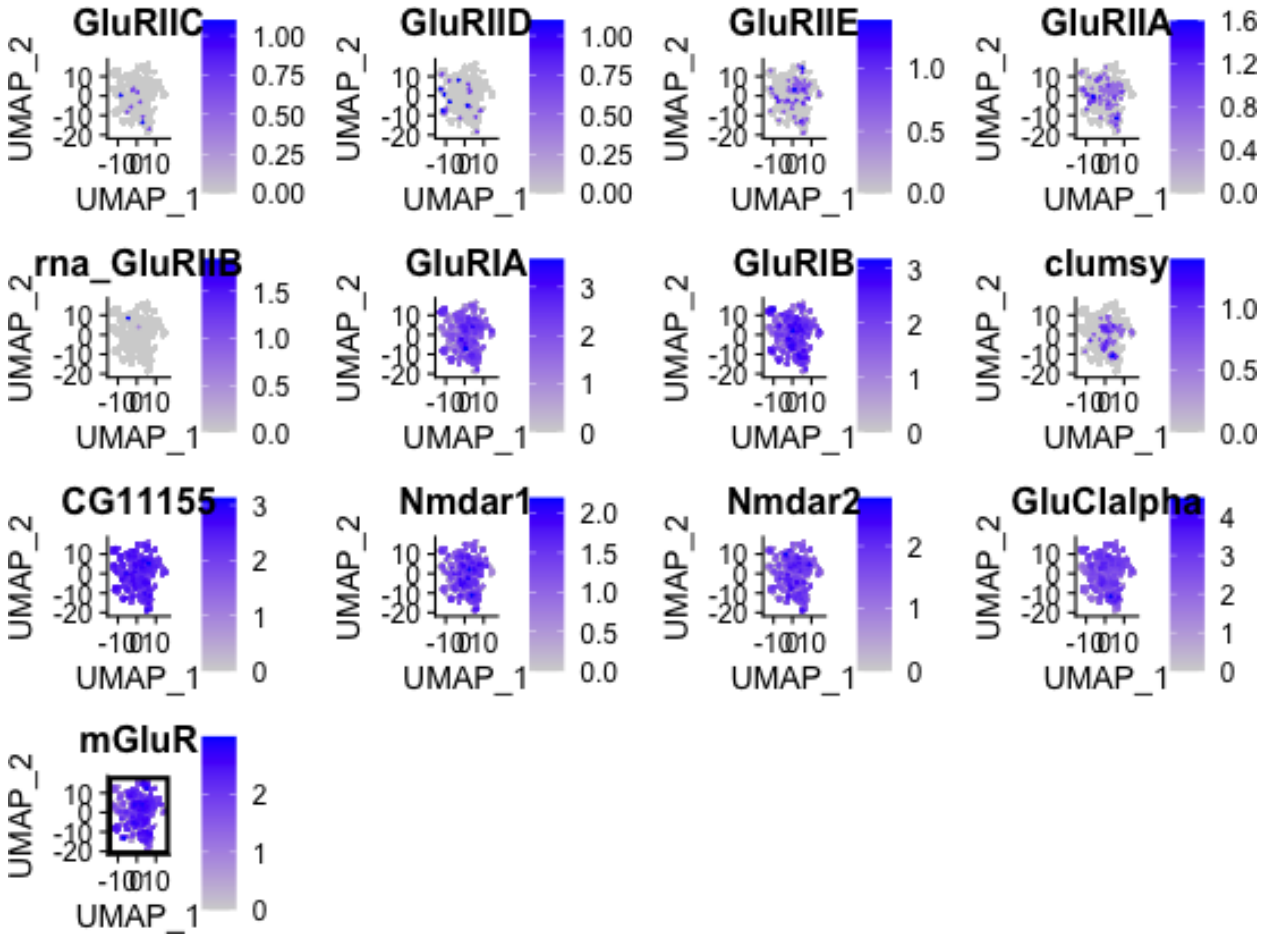

UMAP_2
10
0
-10
-20
-10
-5
0
5
10
15
UMAP_1
Glut
Glia
GABA
KCs
ACh
Monoamines
Other

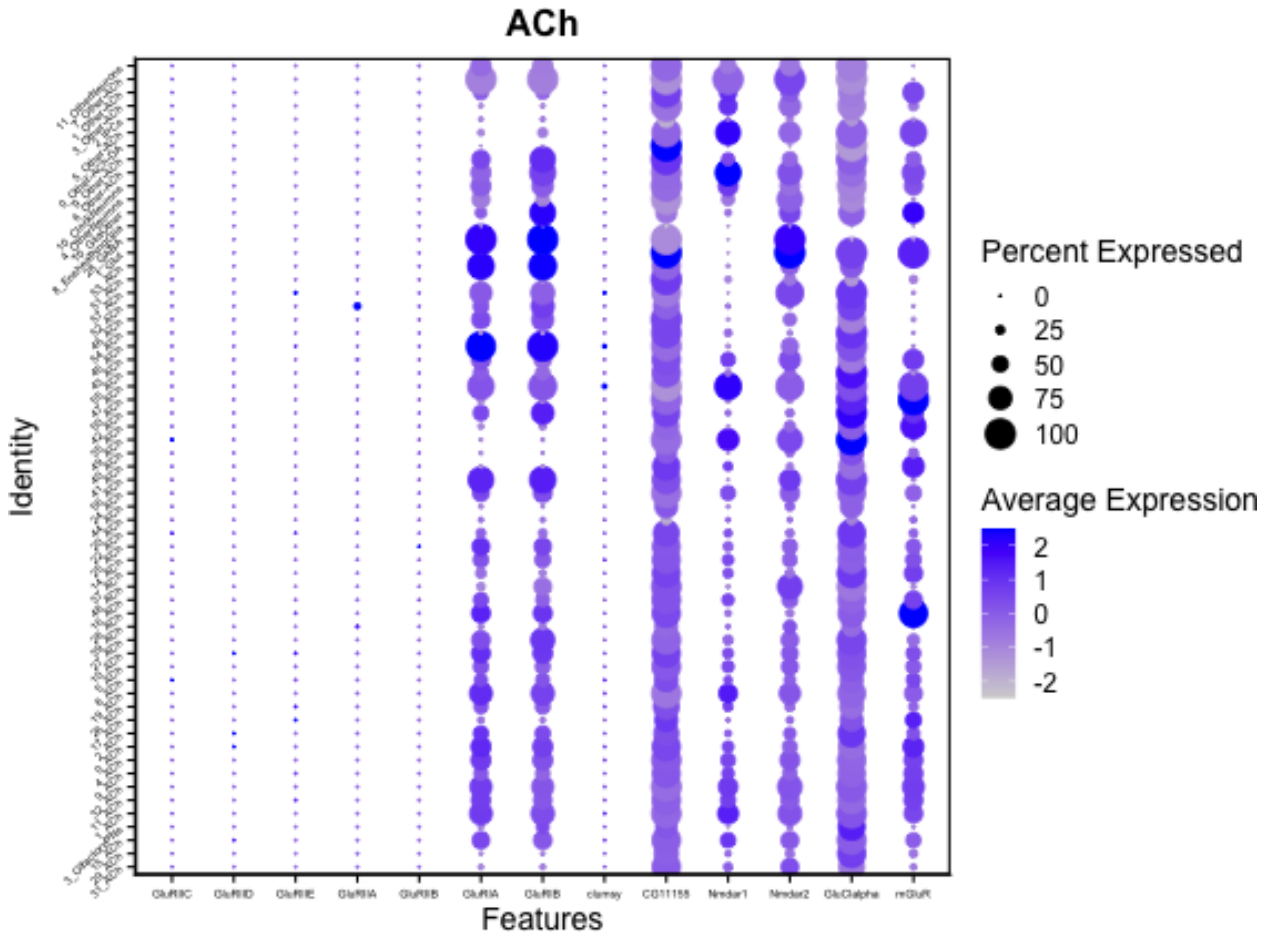

GluClalpha
GluRIA
GluRIB
clumsy
CG11155
Nmdar1
Nmdar2
Average expression
Clusters

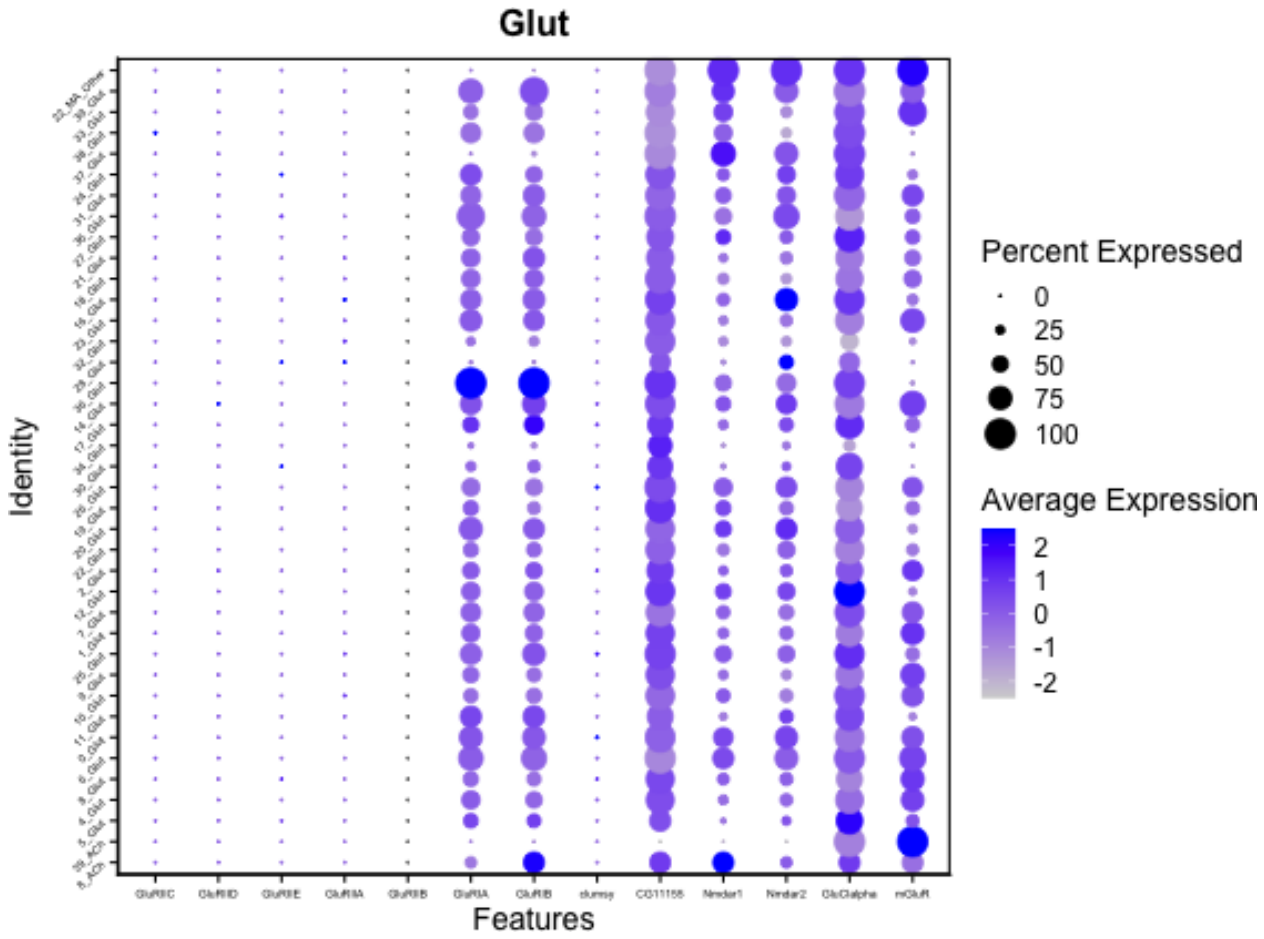

GluRs
Other
Monoamines
ACh
KCs
GABA
Glia
Glut
Identity
GluRIIC GluRIID GluRIIE GluRIIA GluRIIB GluRIA GluRIB clumsy CG11155 Nmdar1 Nmdar2 GluClalpha mGluR
Features
Average Expression
2
1
0
-1
Percent Expressed
0
25
50
75
GluRs
Other
Monoamines
ACh
KCs
GABA
Glia
Glut
Identity
GluRIIC GluRIID GluRIIE GluRIIA GluRIA GluRIB clumsy CG11155 Nmdar1 Nmdar2 GluClalpha mGluR NA
Features
Percent Expressed
0
25
50
75
100
Average Expression
2
1
0
-1

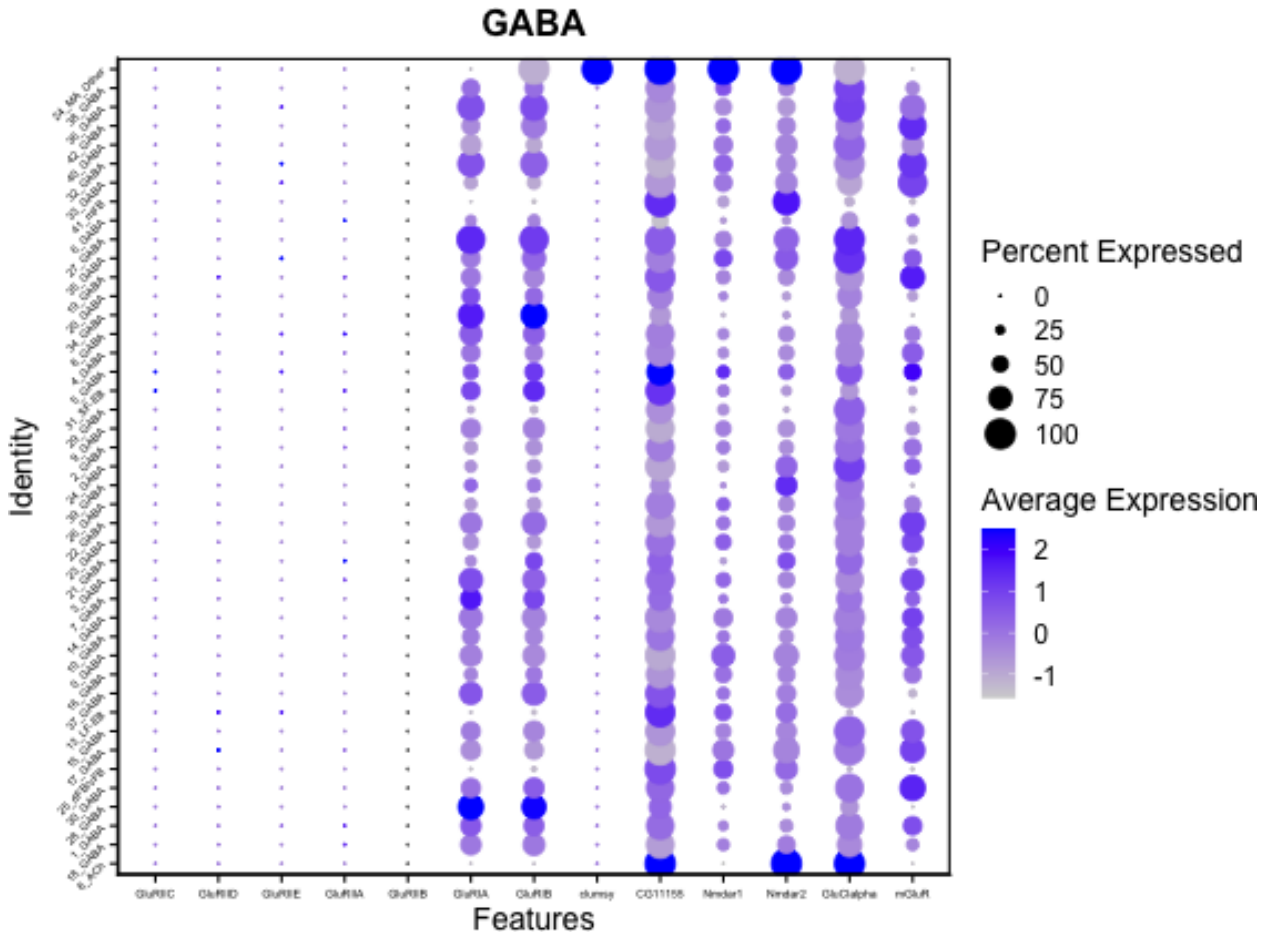

celltype_ann_umap

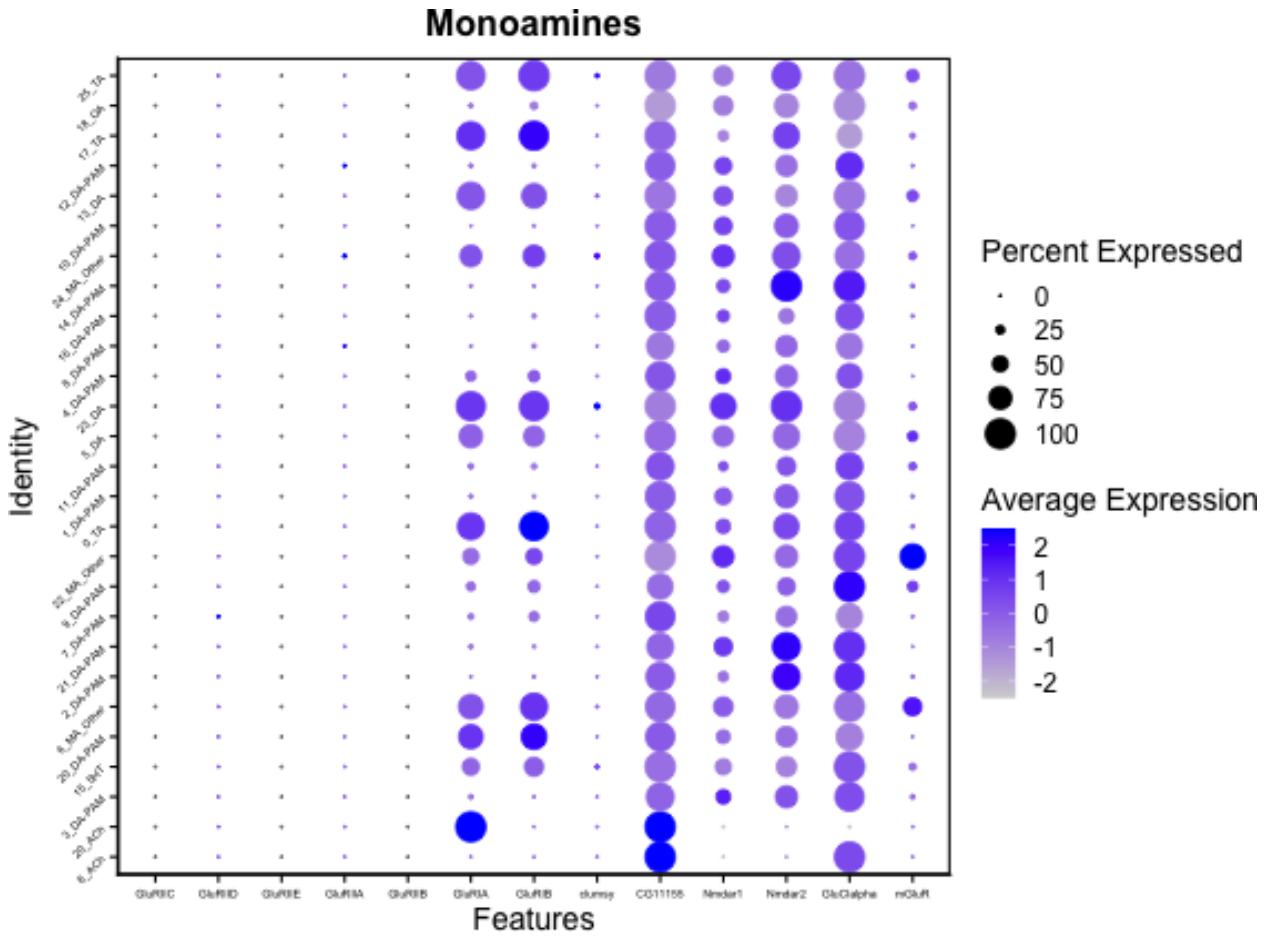

GluClalpha
GluRIA
GluRIB
clumsy
CG11155
Nmdar1
Nmdar2
Average expression
Clusters

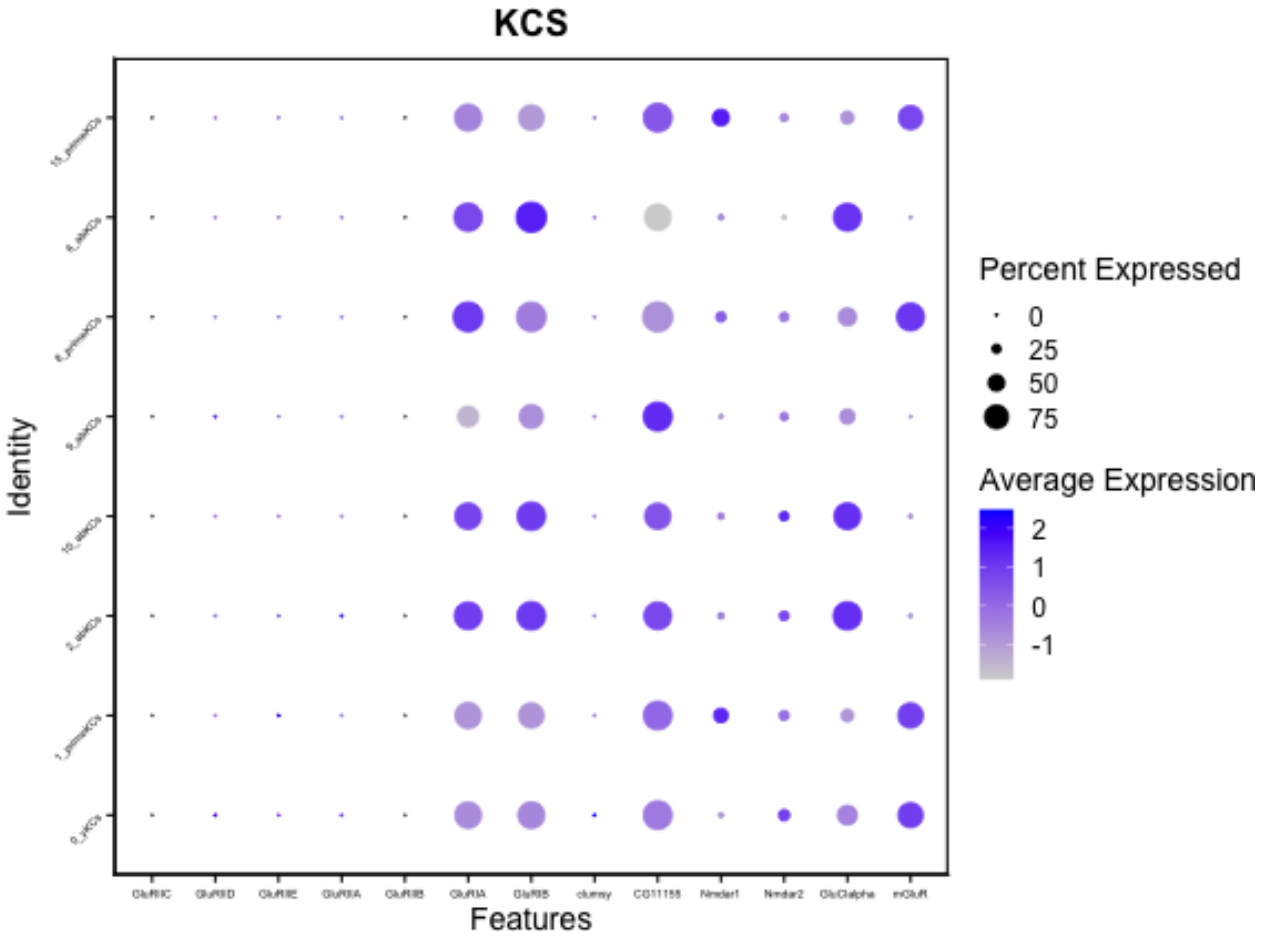

GluRIIC
GluRIID
GluRIIE
GluRIIA
rna_GluRIIB
GluRIA
GluRIB
clumsy
CG11155
Nmdar1
Nmdar2
GluClalpha
mGluR
UMAP_1
UMAP_2

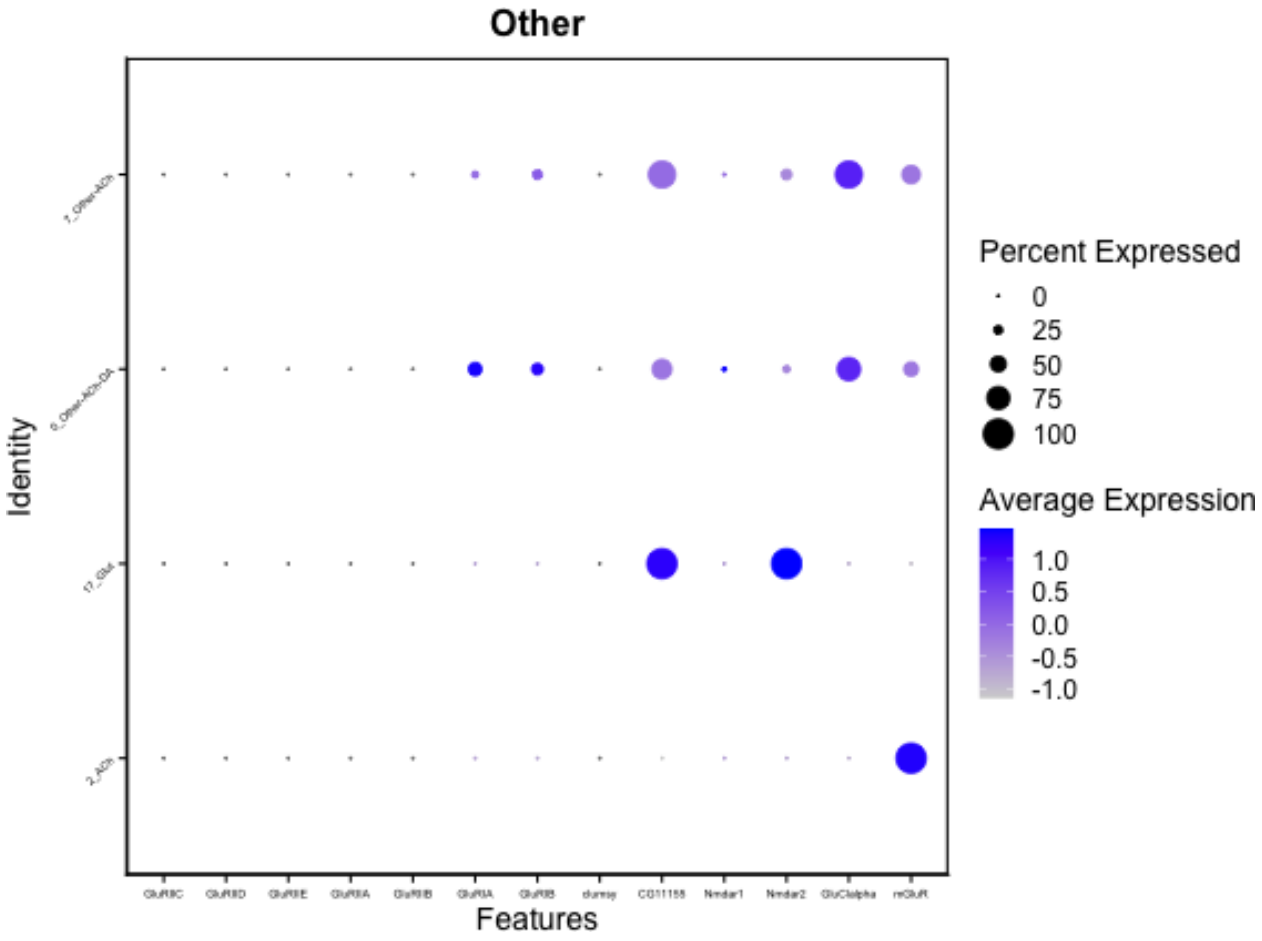

ACh
Identity
Features
GluR1C
GluR1D
GluR1E
GluR1A
GluR1B
GluR1A
GluR1B
clamay
CG11155
Nmdar1
Nmdar2
GluGlalpha
mGluR
Percent Expressed
0
25
50
75
100
Average Expression
2
1
0
-1
-2


Glut
Identity
Features
GluR1C
GluR1D
GluR1E
GluR1A
GluR1B
GluR3A
GluR3B
stumpy
CG11155
Nmdar1
Nmdar2
GluClalpha
mGluR
Percent Expressed
0
25
50
75
100
Average Expression
2
1
0
-1
-2


GABA
Identity
Features
GluR1C
GluR1D
GluR1E
GluR1A
GluR1B
GluR3A
GluR3B
stumpy
CG11155
Nmdar1
Nmdar2
GluClalpha
mGluR
Percent Expressed
0
25
50
75
100
Average Expression
2
1
0
-1


Monoamines
Identity
Features
Percent Expressed
0
25
50
75
100
Average Expression
2
1
0
-1
-2


KCS
Identity
Features
GluRIIC
GluRIID
GluRIIE
GluRIIA
GluRIIB
GluRIA
GluRIB
clumsy
CG11155
Nmdar1
Nmdar2
GluClalpha
mGluR
Percent Expressed
0
25
50
75
Average Expression
2
1
0
-1


Other
Identity
Features
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6_Other:ACh:DA
17_Gli4
2_ACh
GluR8C
GluR8D
GluR8E
GluR8A
GluR8B
GluR8A
GluR8
clumsy
CG11155
Nmdar1
Nmdar2
GluClalpha
mGluR
Percent Expressed
0
25
50
75
100
Average Expression
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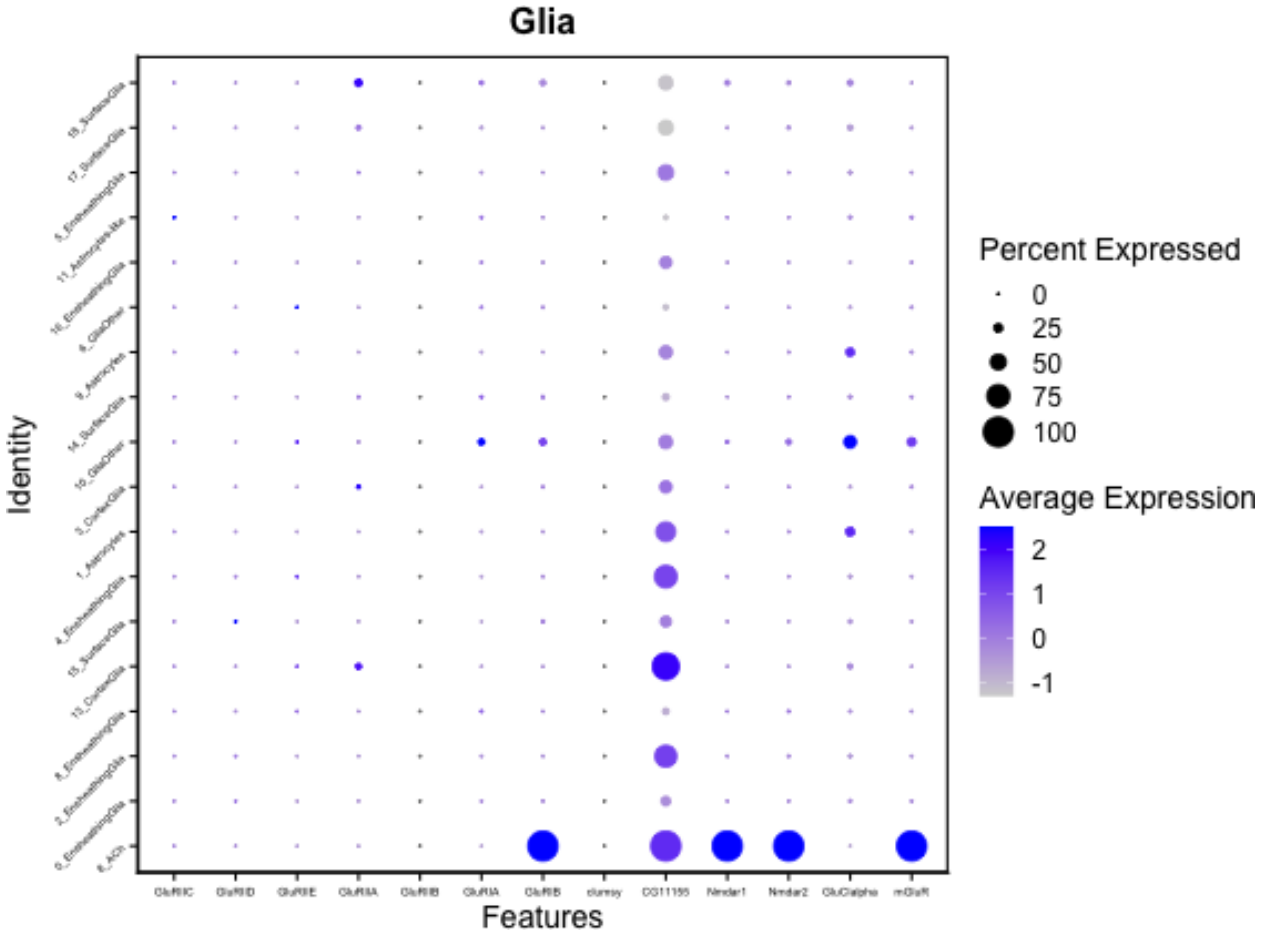
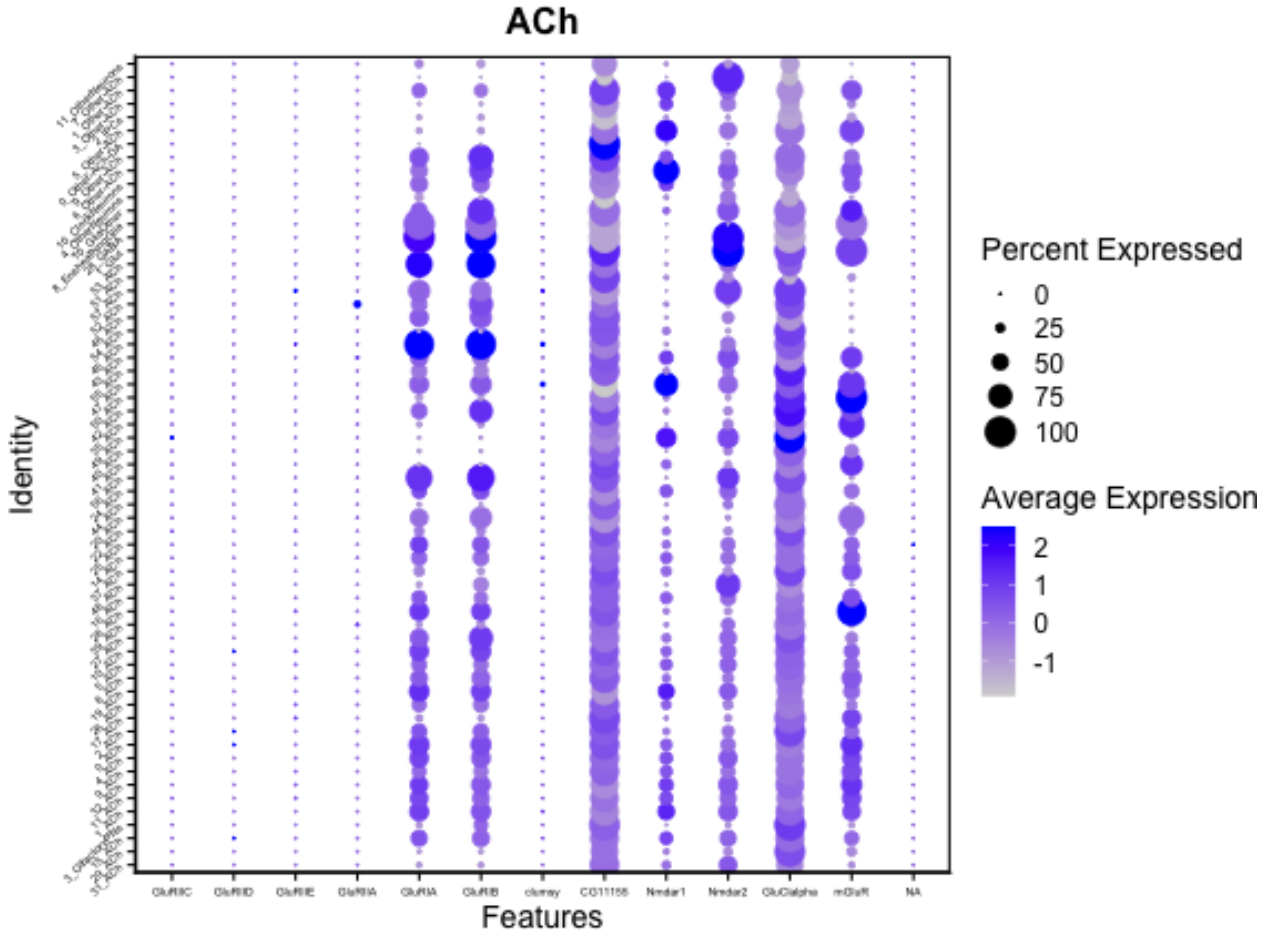
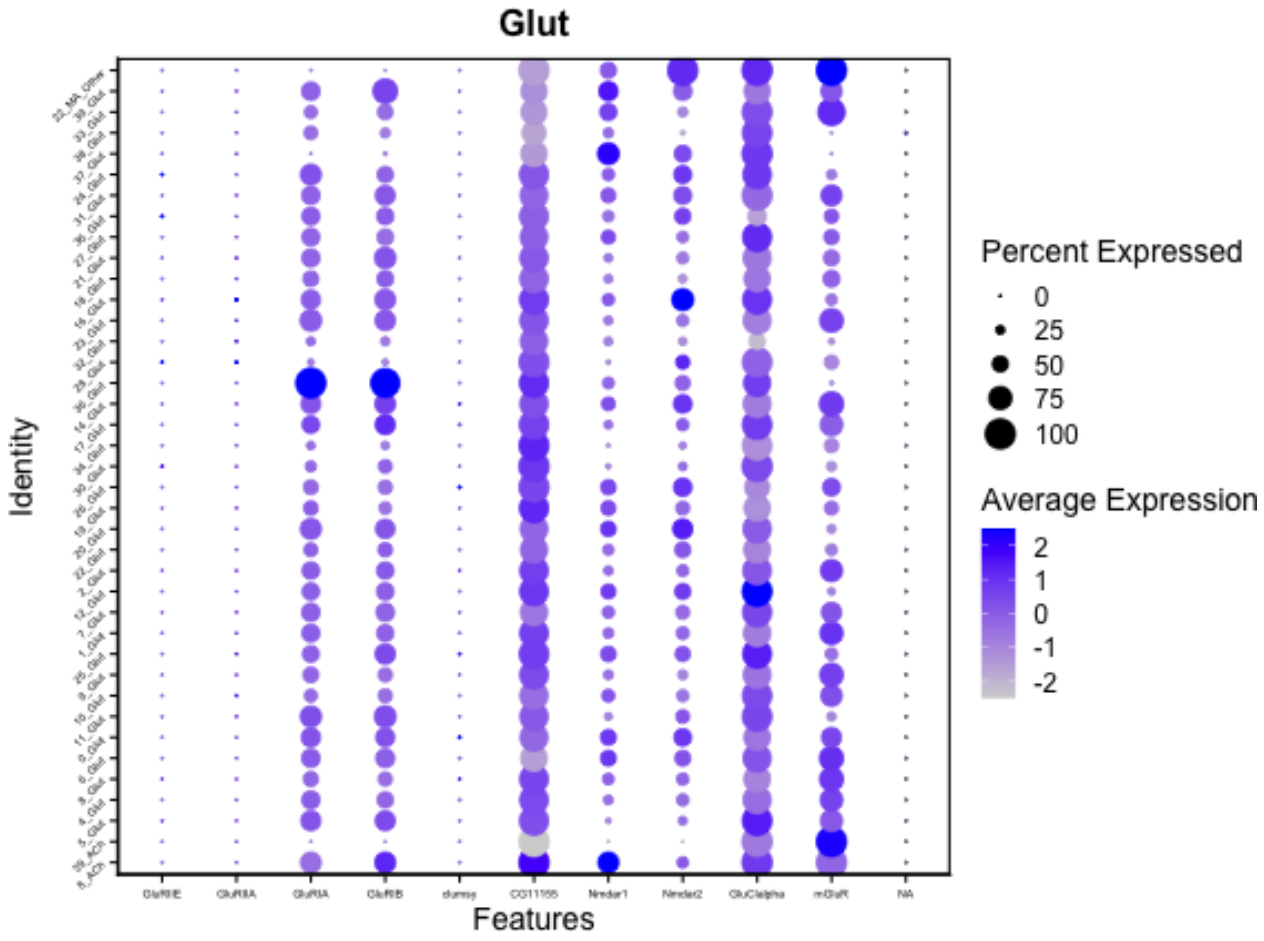
0.5
0.0
-0.5
-1.0


Glia
Identity
Features
Percent Expressed
0
25
50
75
100
Average Expression
2
1
0
-1


ACh
Identity
Features
GluRIIC
GluRIID
GluRIIE
GluRIIA
GluRIA
GluRIB
clumsy
CG11155
Nmdar1
Nmdar2
GluClalpha
mGluR
NA
Percent Expressed
0
25
50
75
100
Average Expression
2
1
0
-1


Glut
Identity
Features
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GluRIIA
GluRIA
GluRIB
clumsy
CG11155
Nmdar1
Nmdar2
GluClalpha
mGluR
NA
Percent Expressed
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50
75
100
Average Expression
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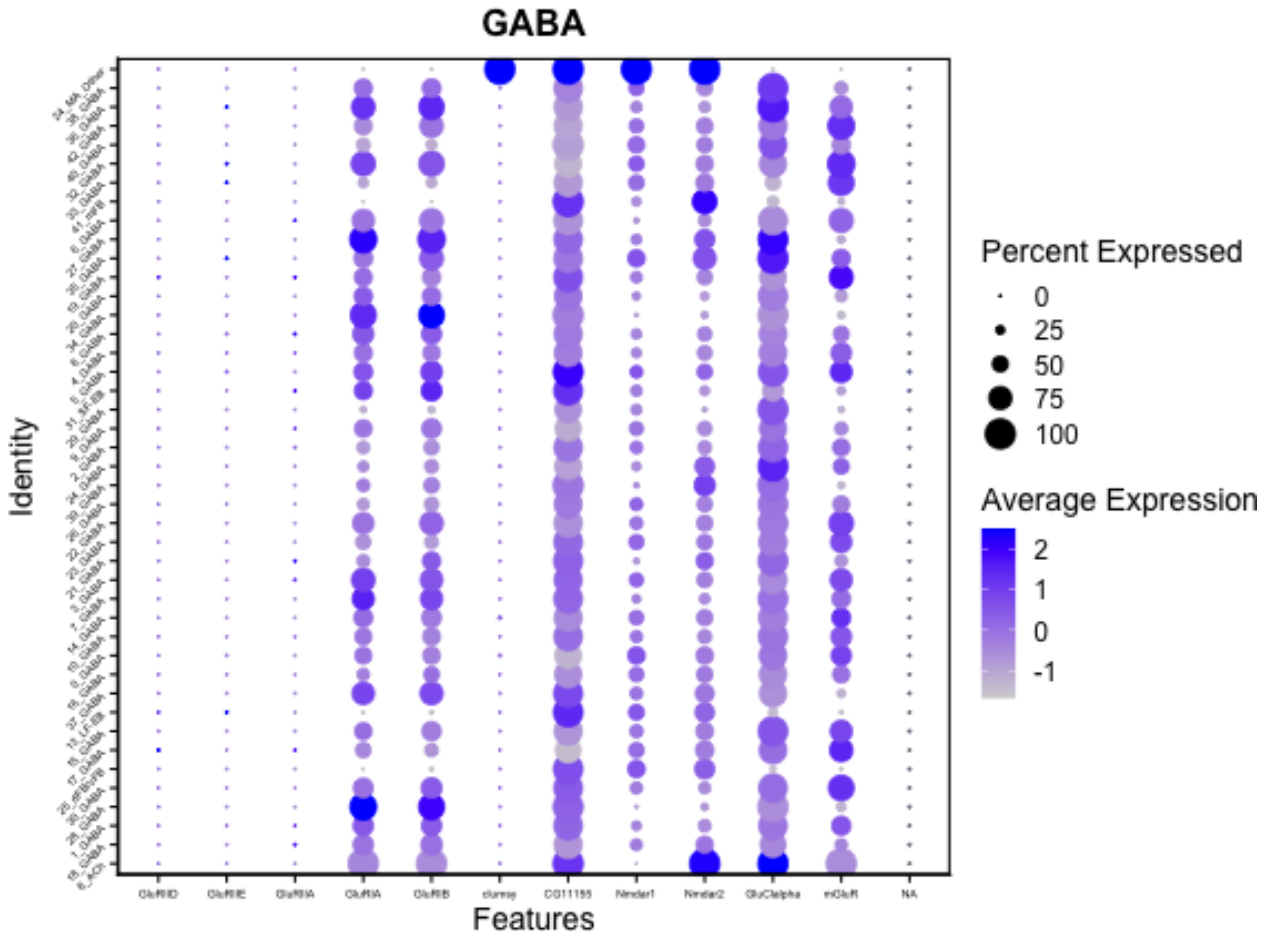
0
-1
-2


GABA
Identity
Features
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GluRIIE
GluRIIA
GluRIA
GluRIB
clumsy
CG11155
Nmdar1
Nmdar2
GluClalpha
mGluR
NA
Percent Expressed
0
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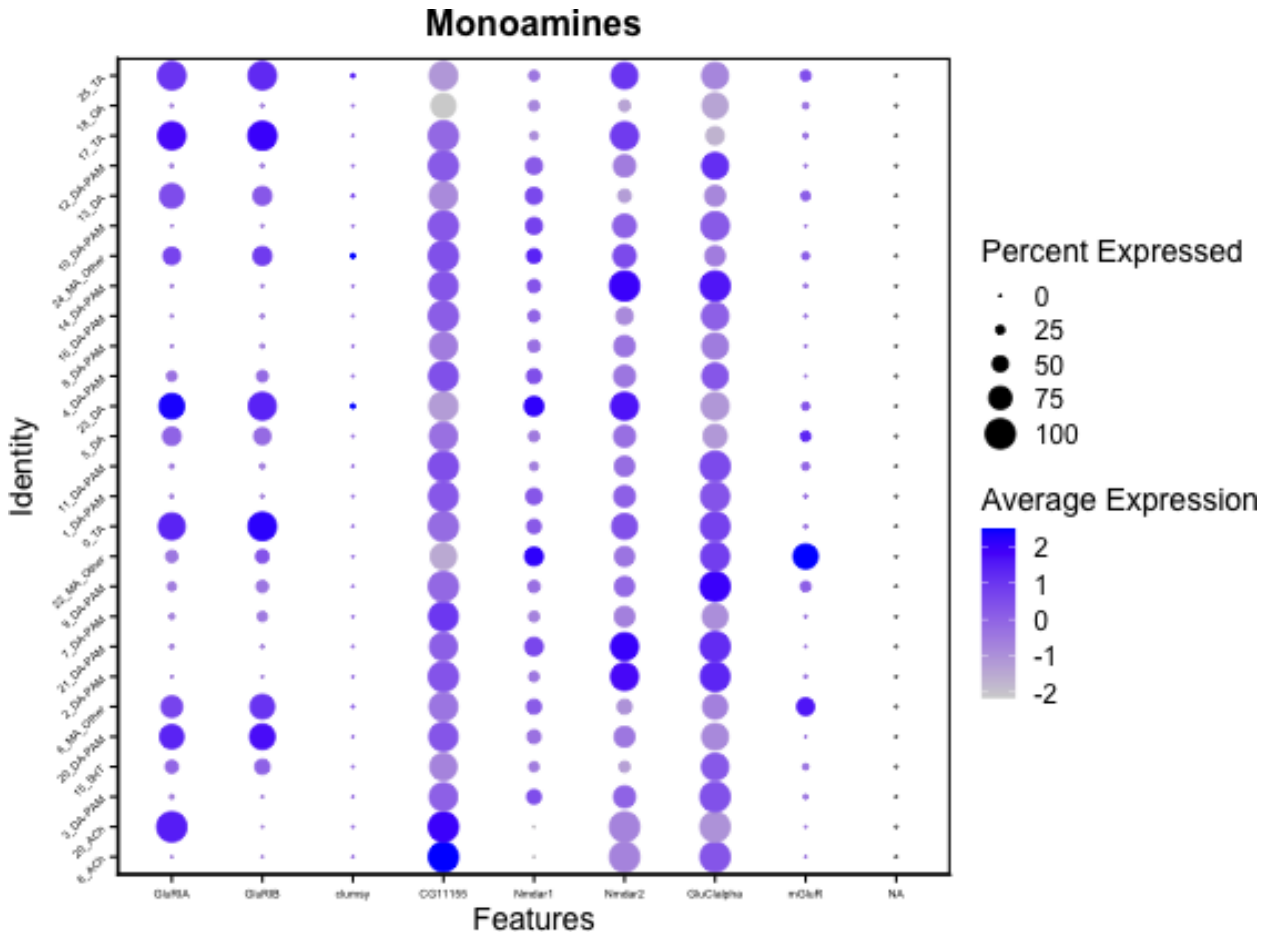
50
75
100
Average Expression
2
1
0
-1


Monoamines
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Features
GluRIA
GluRIB
dumsy
CG11155
Nmdar1
Nmdar2
GluClalpha
mGluR
NA
Percent Expressed
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50
75
100
Average Expression
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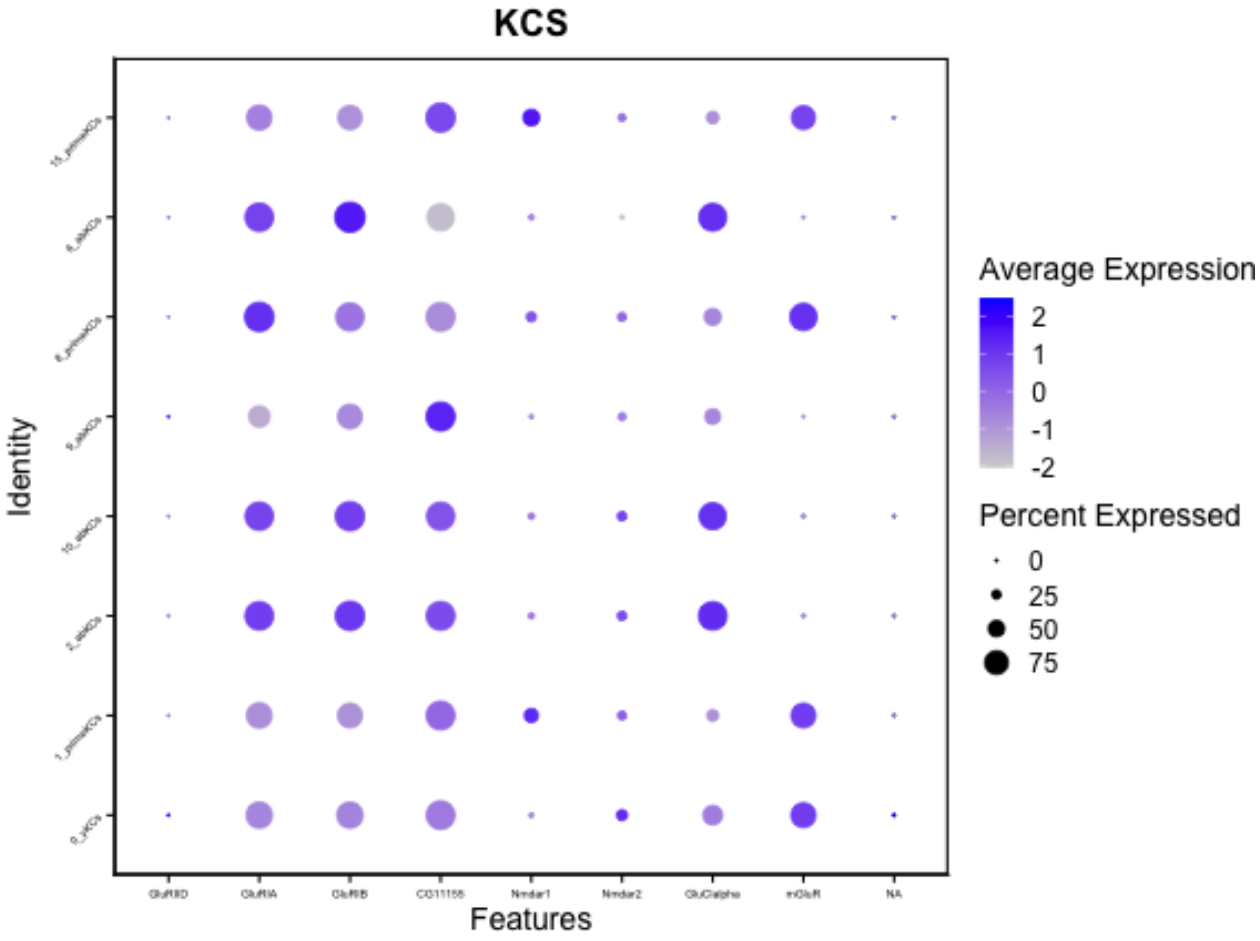
-2


KCS
Identity
Features
GluRIID
GluRIA
GluRIB
CG11155
Nmdar1
Nmdar2
GluClalpha
mGluR
NA
Average Expression
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-1
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Percent Expressed
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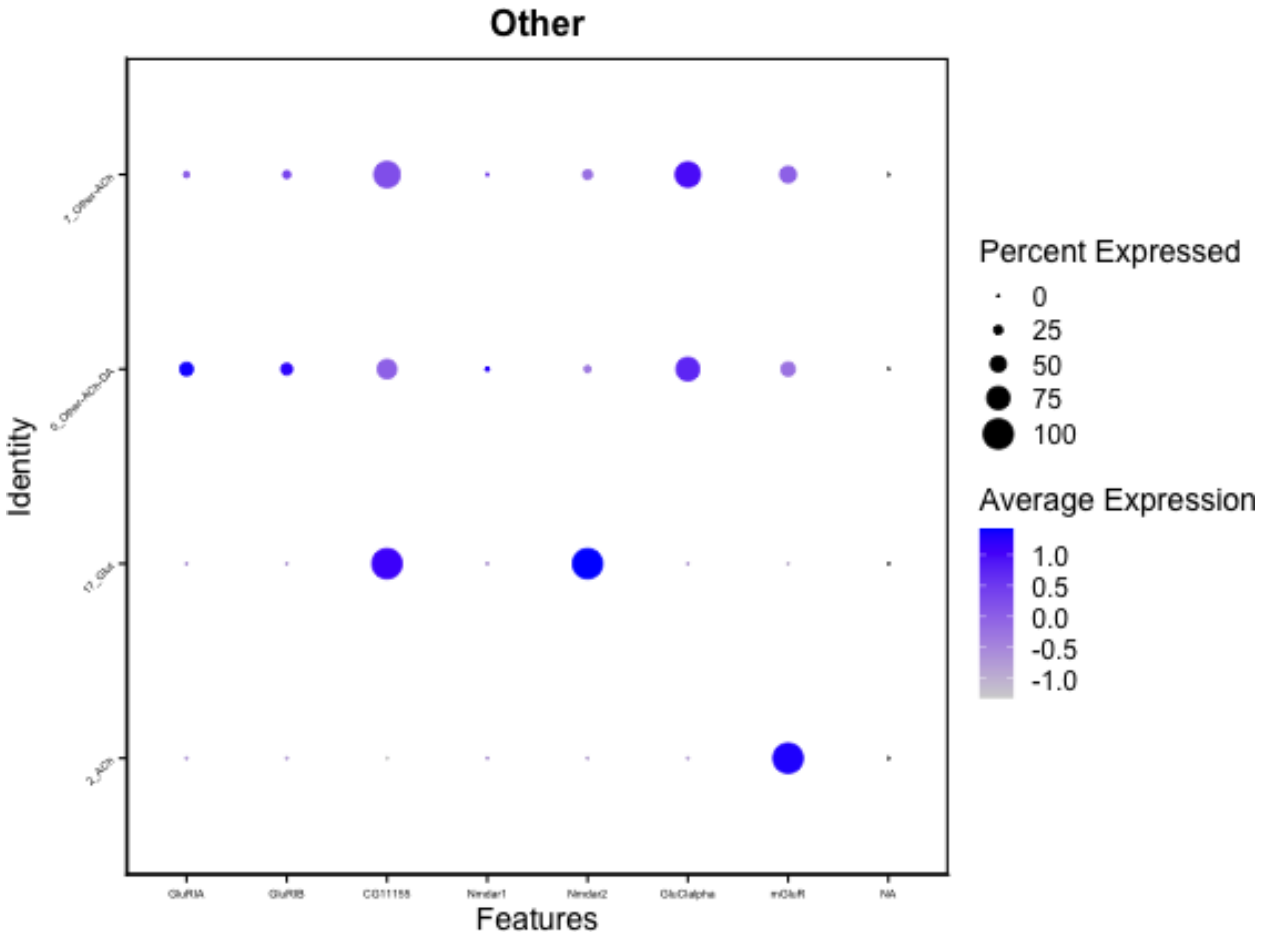
25
50
75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17_Gli4
2_ACh
GluRIA
GluRIB
CG11155
Nmdar1
Nmdar2
GlyClalpha
mGluR
NA
Features
Percent Expressed
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50
75
100
Average Expression
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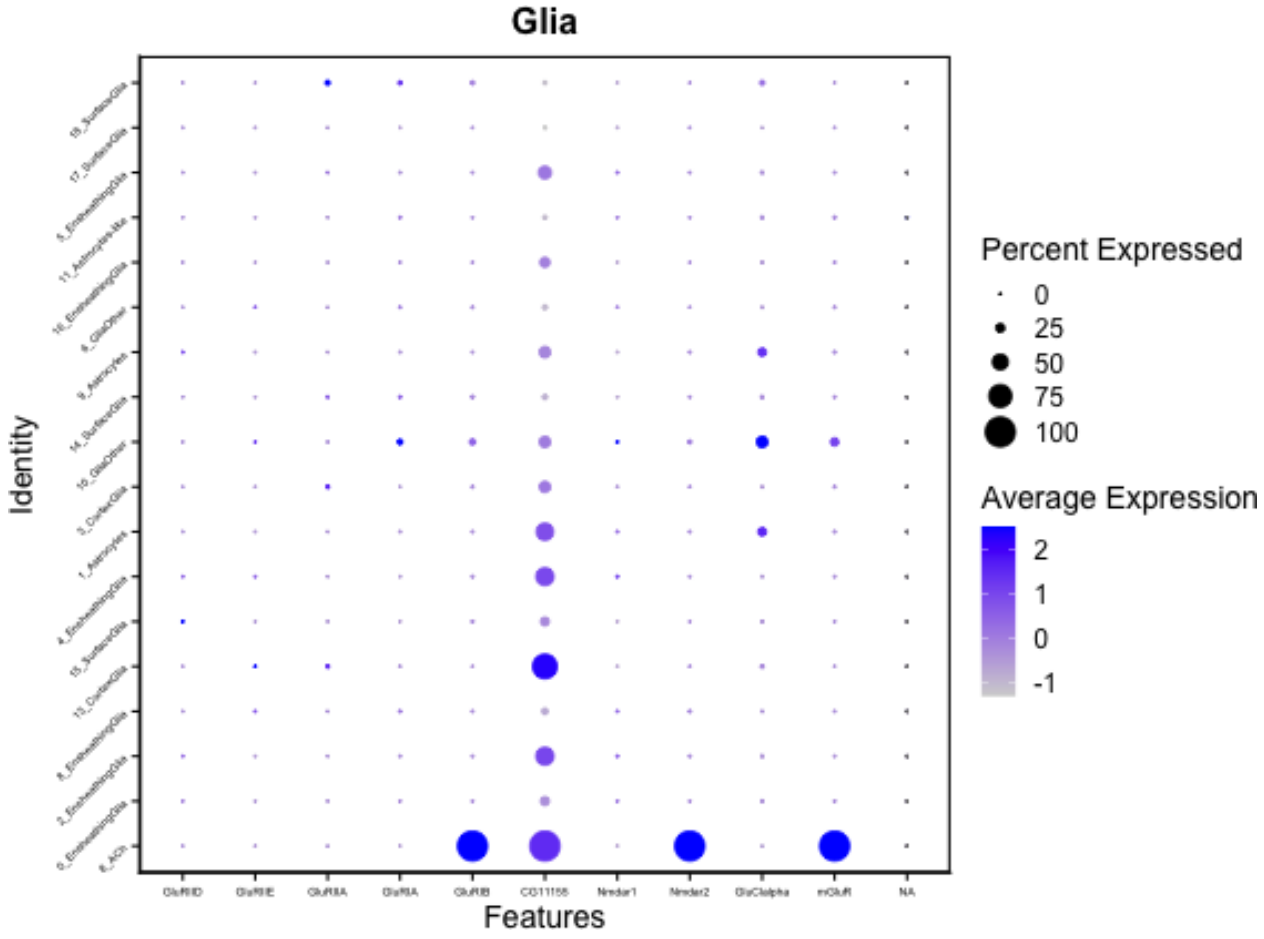
-0.5
-1.0


Glia
Identity
Features
Percent Expressed
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50
75
100
Average Expression
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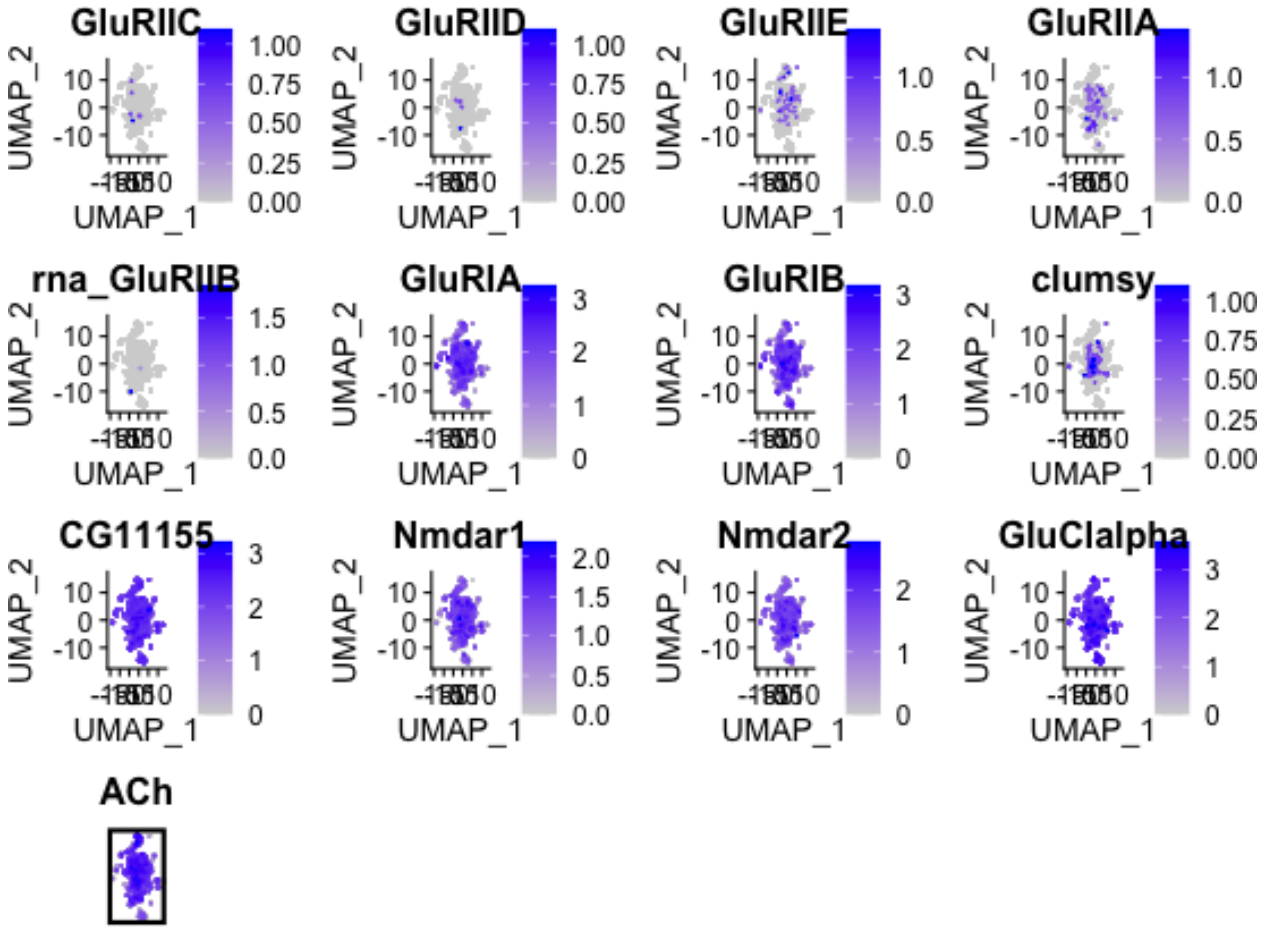
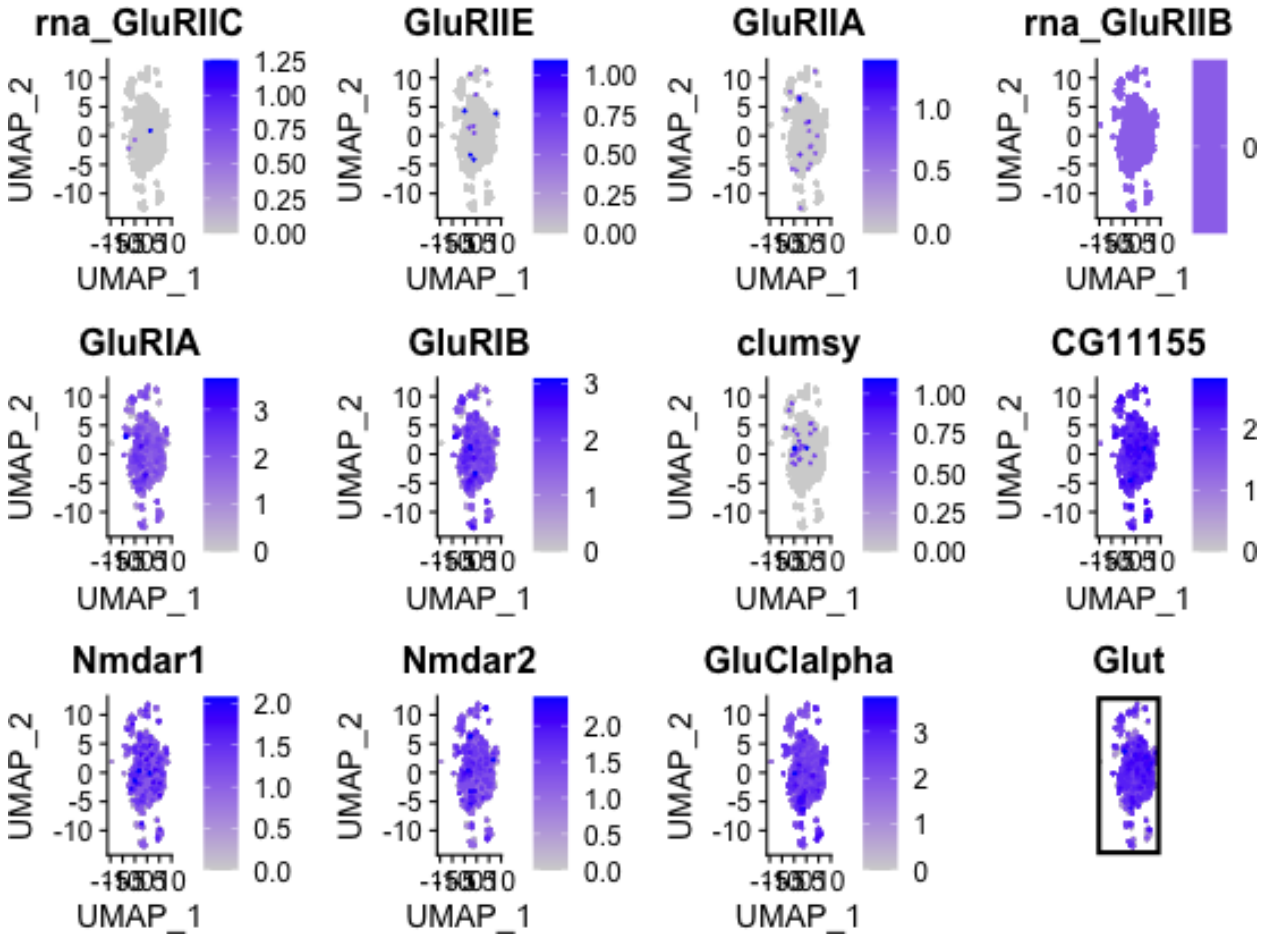

GluRIIC
GluRIID
GluRIIE
GluRIIA
rna_GluRIIB
GluRIA
GluRIB
clumsy
CG11155
Nmdar1
Nmdar2
GluClalpha
ACh
UMAP_1
UMAP_2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GluRIIA
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clumsy
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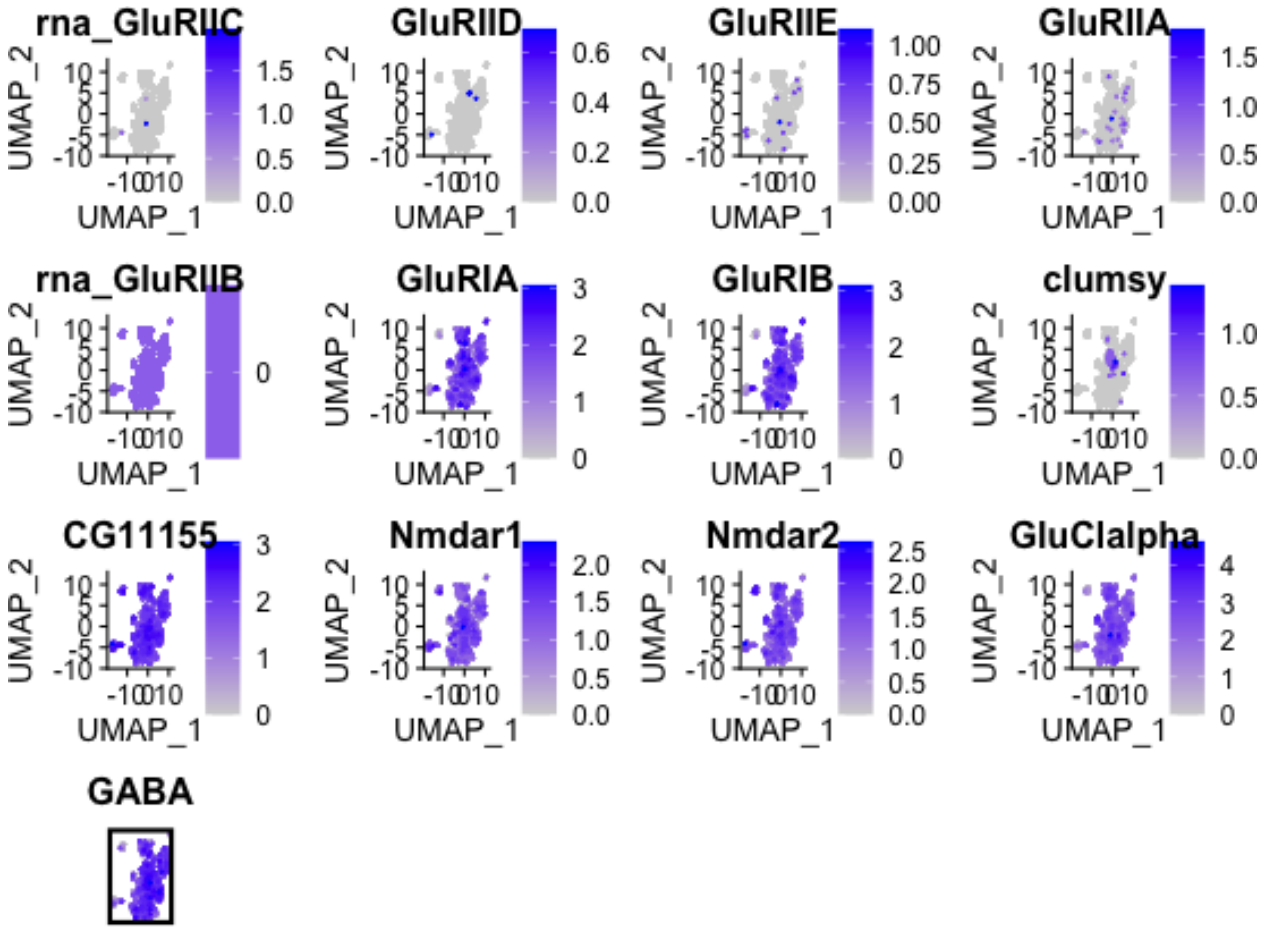
Glut
UMAP_1
UMAP_2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GluRIIA
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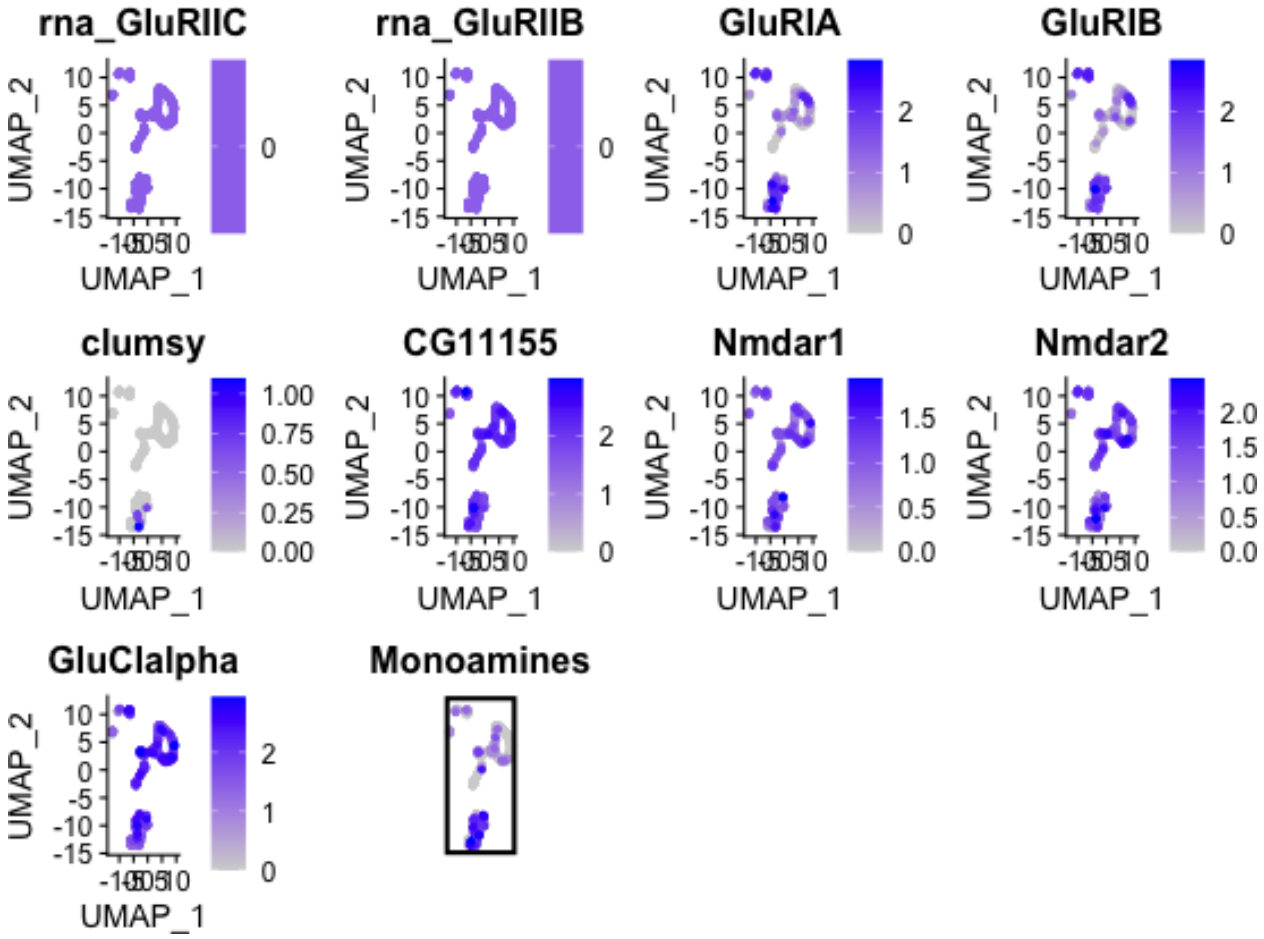
Nmdar1
Nmdar2
GluClalpha
GABA
UMAP_1
UMAP_2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clumsy
CG11155
Nmdar1
Nmdar2
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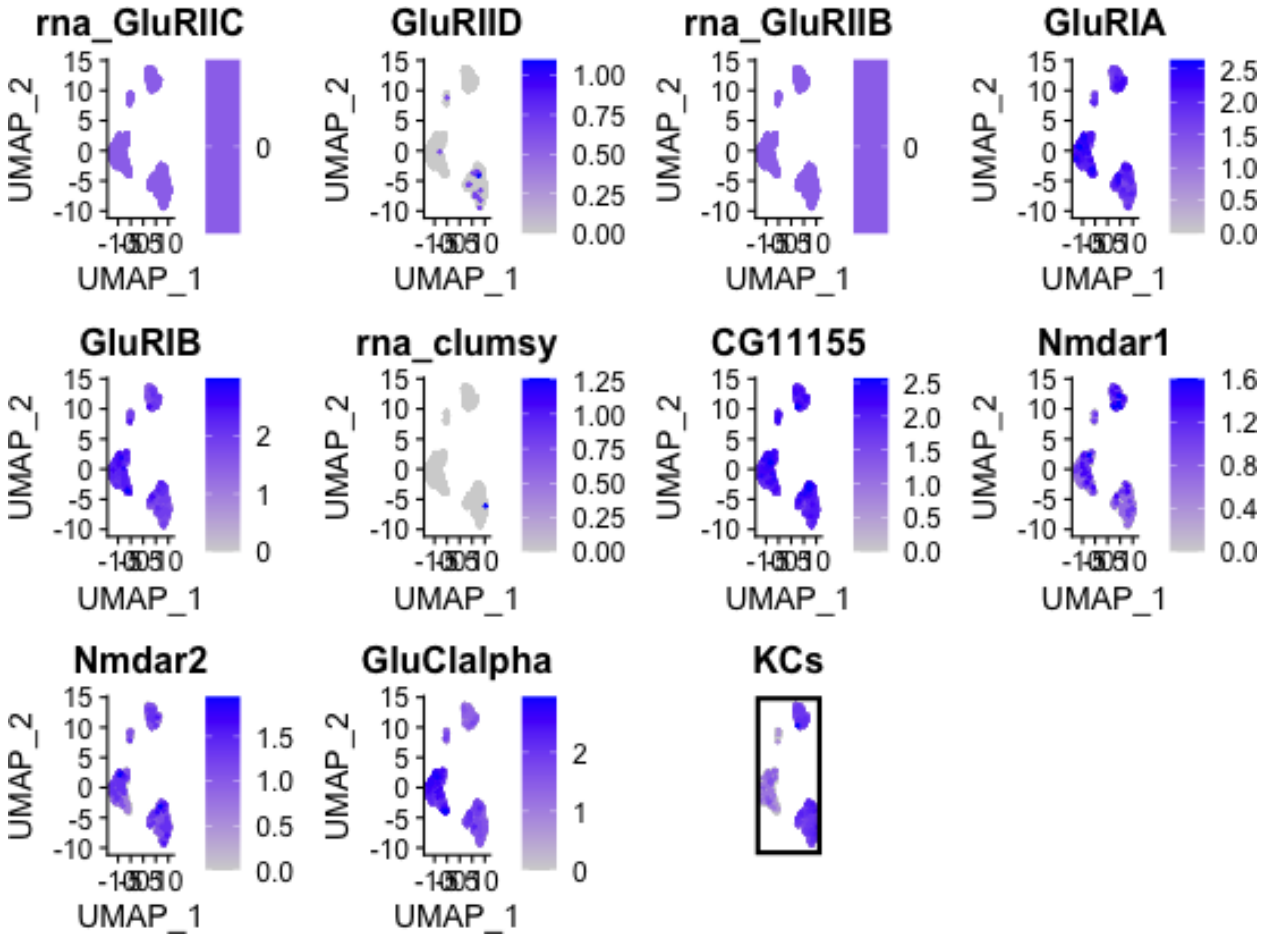
Monoamines
UMAP_1
UMAP_2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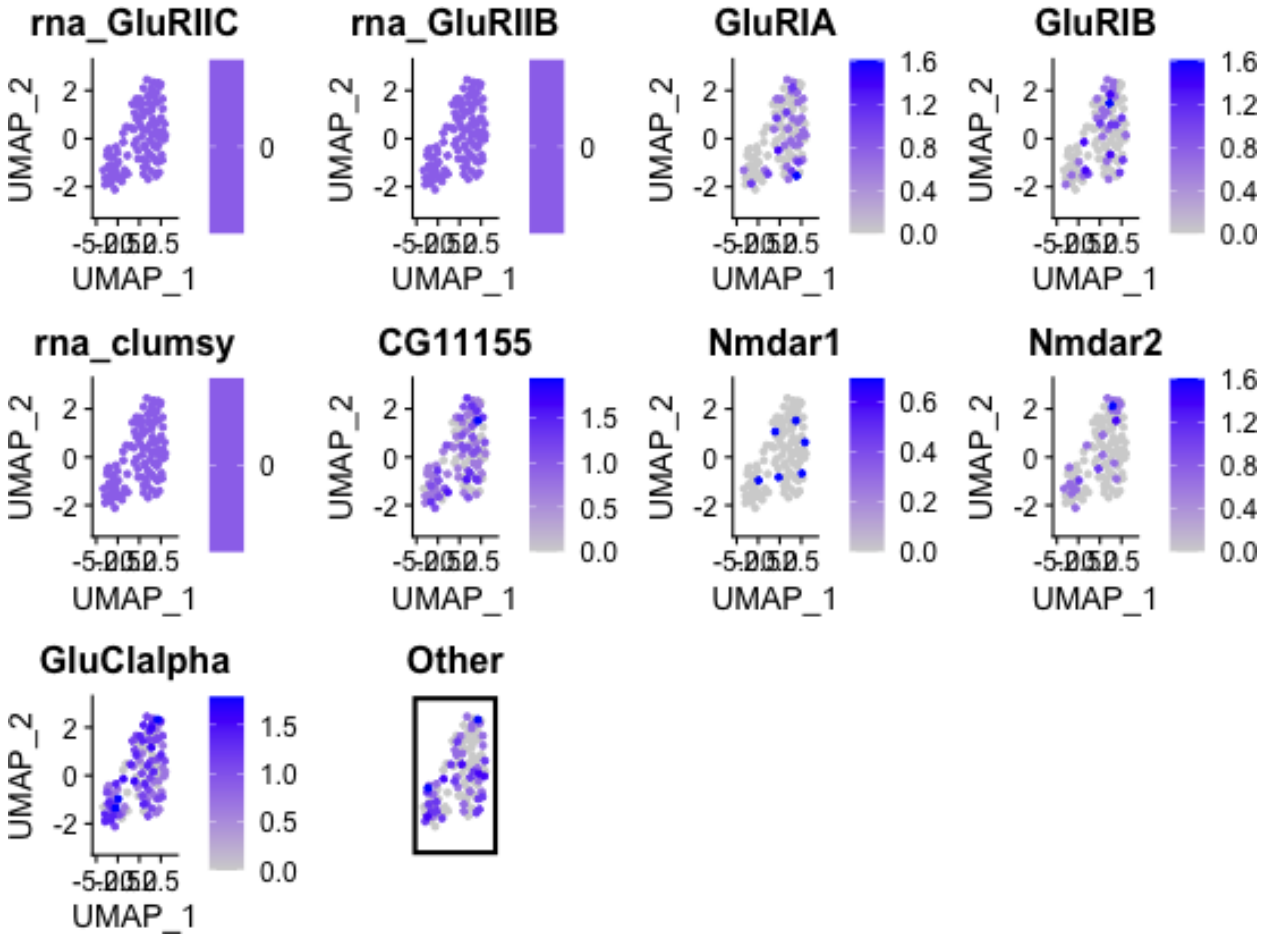
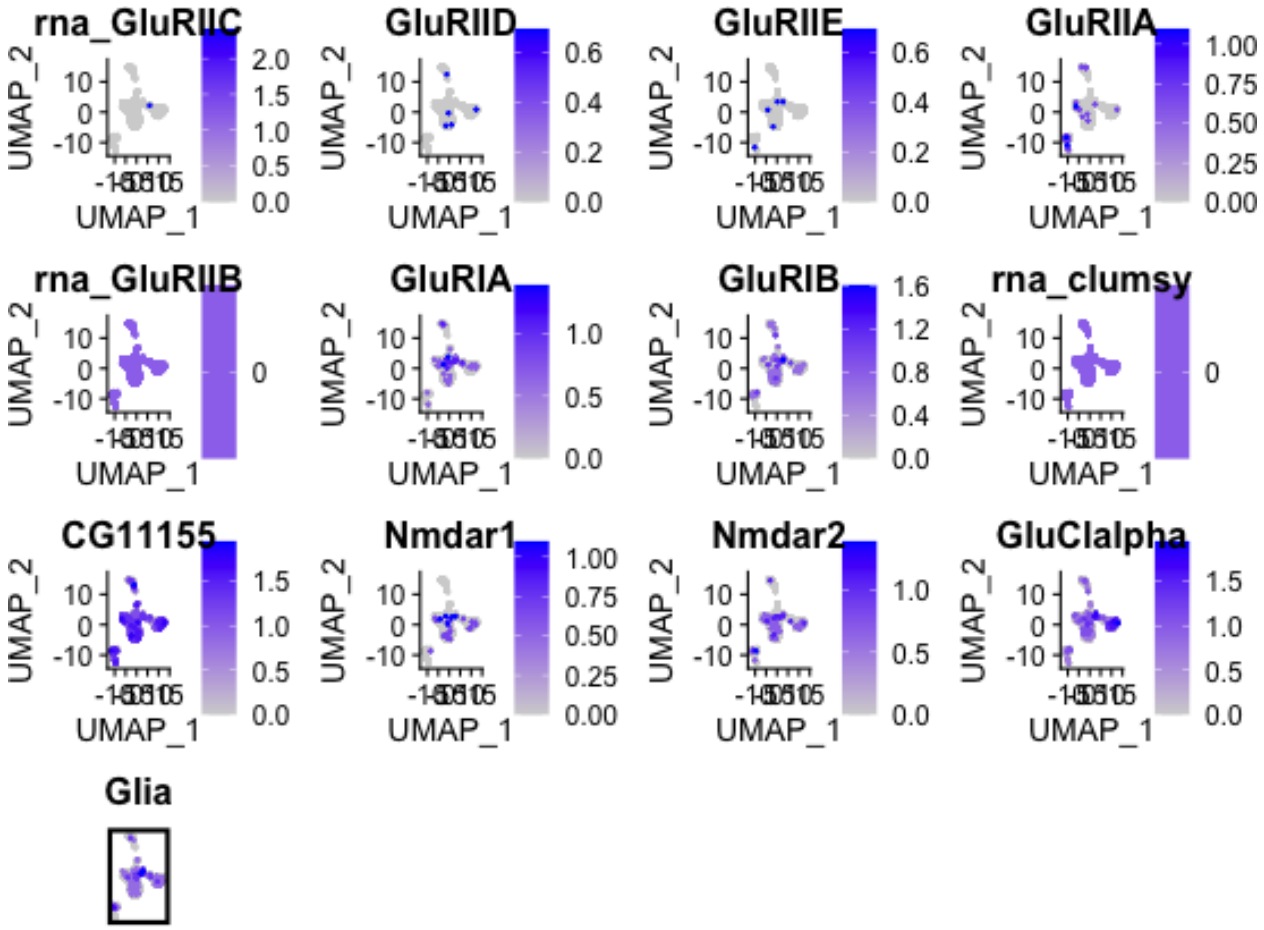
GluRIID
rna_GluRIIB
GluRIA
GluRIB
rna_clumsy
CG11155
Nmdar1
Nmdar2
GluClalpha
KCs
UMAP_1
UMAP_2

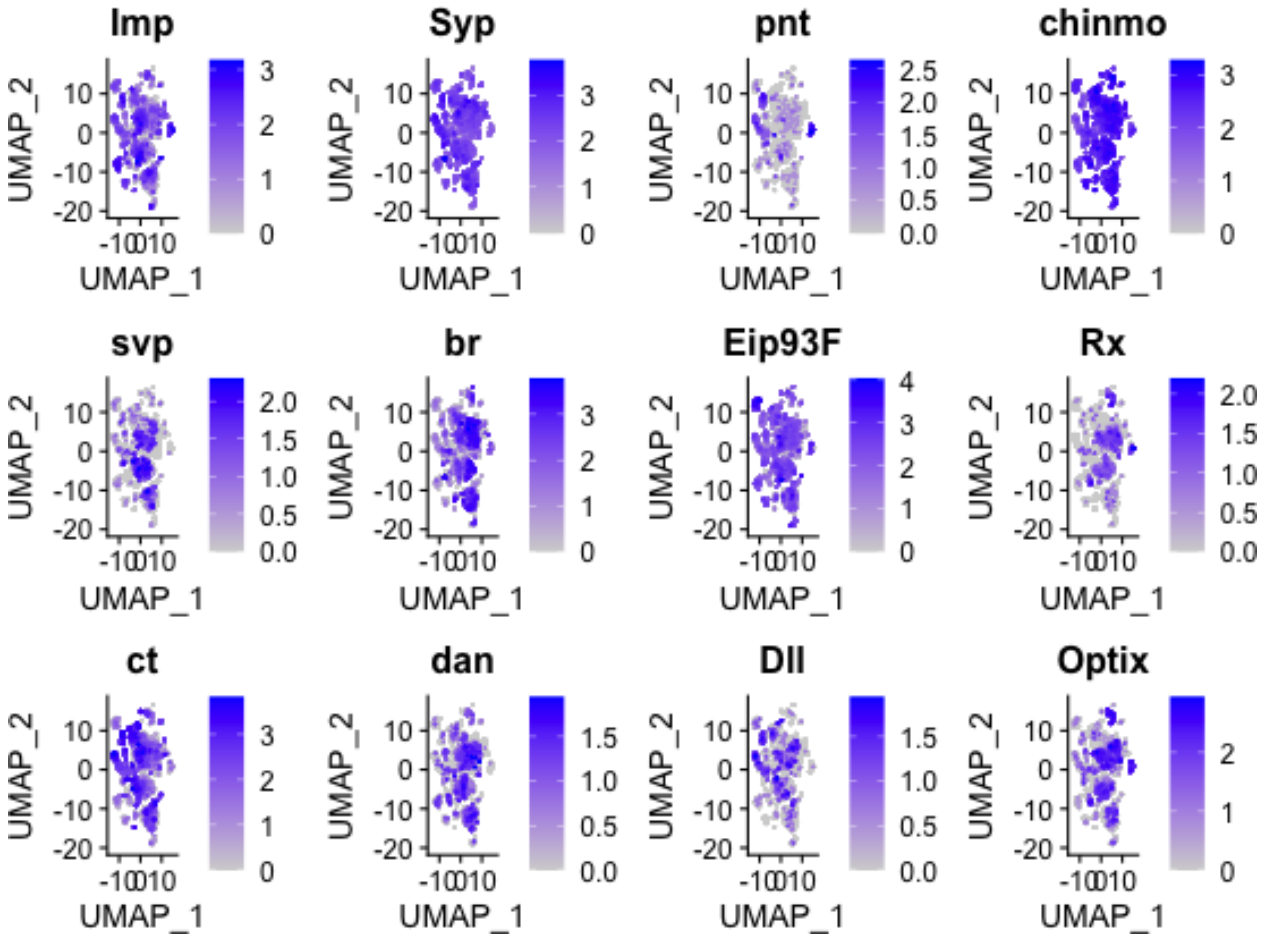

rna_GluRIIC
rna_GluRIIB
GluRIA
GluRIB
rna_clumsy
CG11155
Nmdar1
Nmdar2
GluClalpha
Other
UMAP_1
UMAP_2



How many neurons express more excitatory GluRs than inhibitory?

Speculative Central Complex

Paper: https://link.springer.com/article/10.1007/s00427-016-0542-7 Several transcription factors remain detectable in a certain lineage from the delaminating neuroblast to at least a subset of daughter cells of that neuroblast like engrailed (Kumar et al. 2009), and Ct, Dan, Dll, and Optix in type II neuroblasts (Bayraktar and Doe 2013).


lmp
Syp
pnt
chinmo
svp
br
Eip93F
Rx
ct
dan
Dll
Optix
UMAP_1
UMAP_2