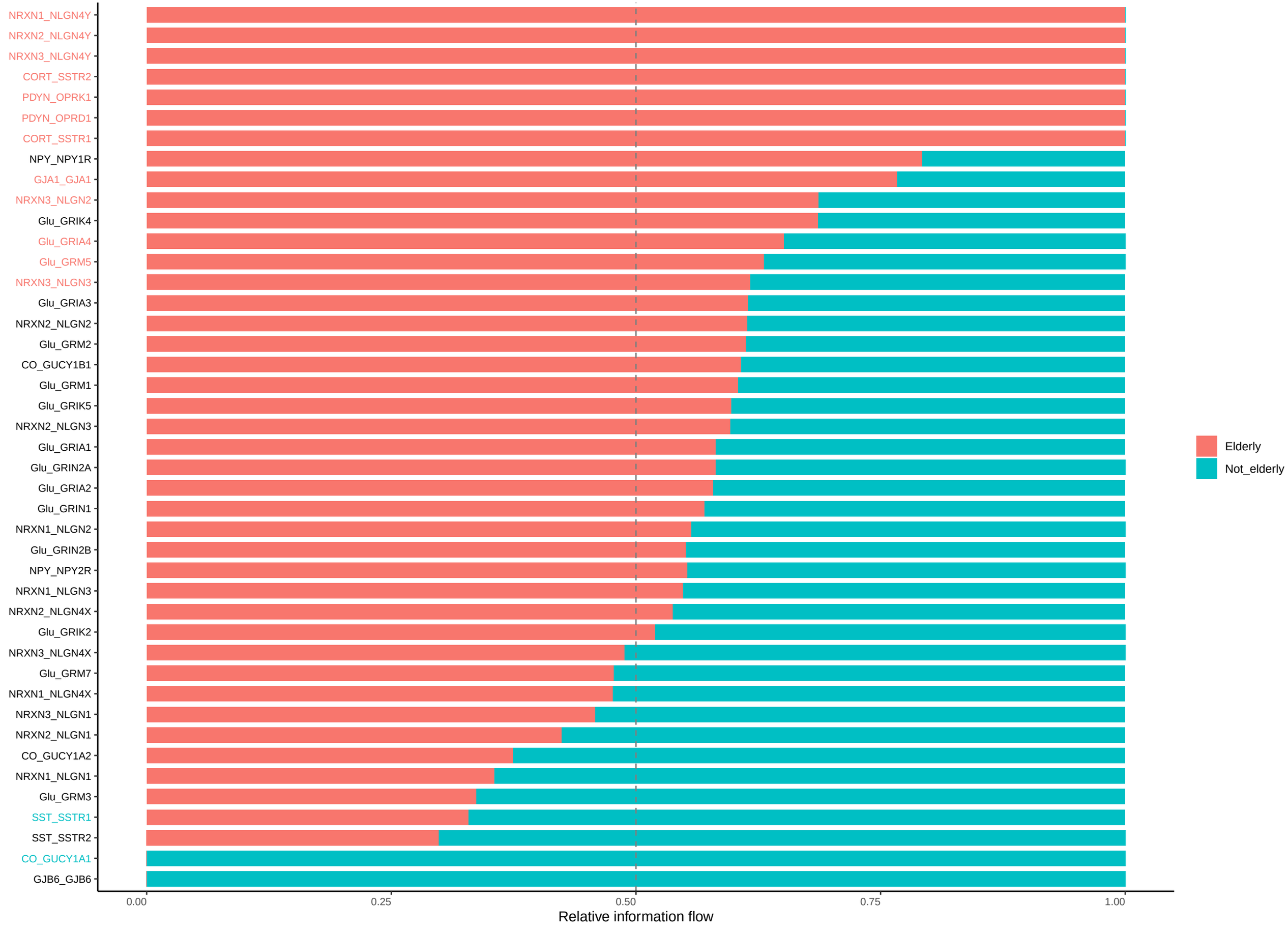
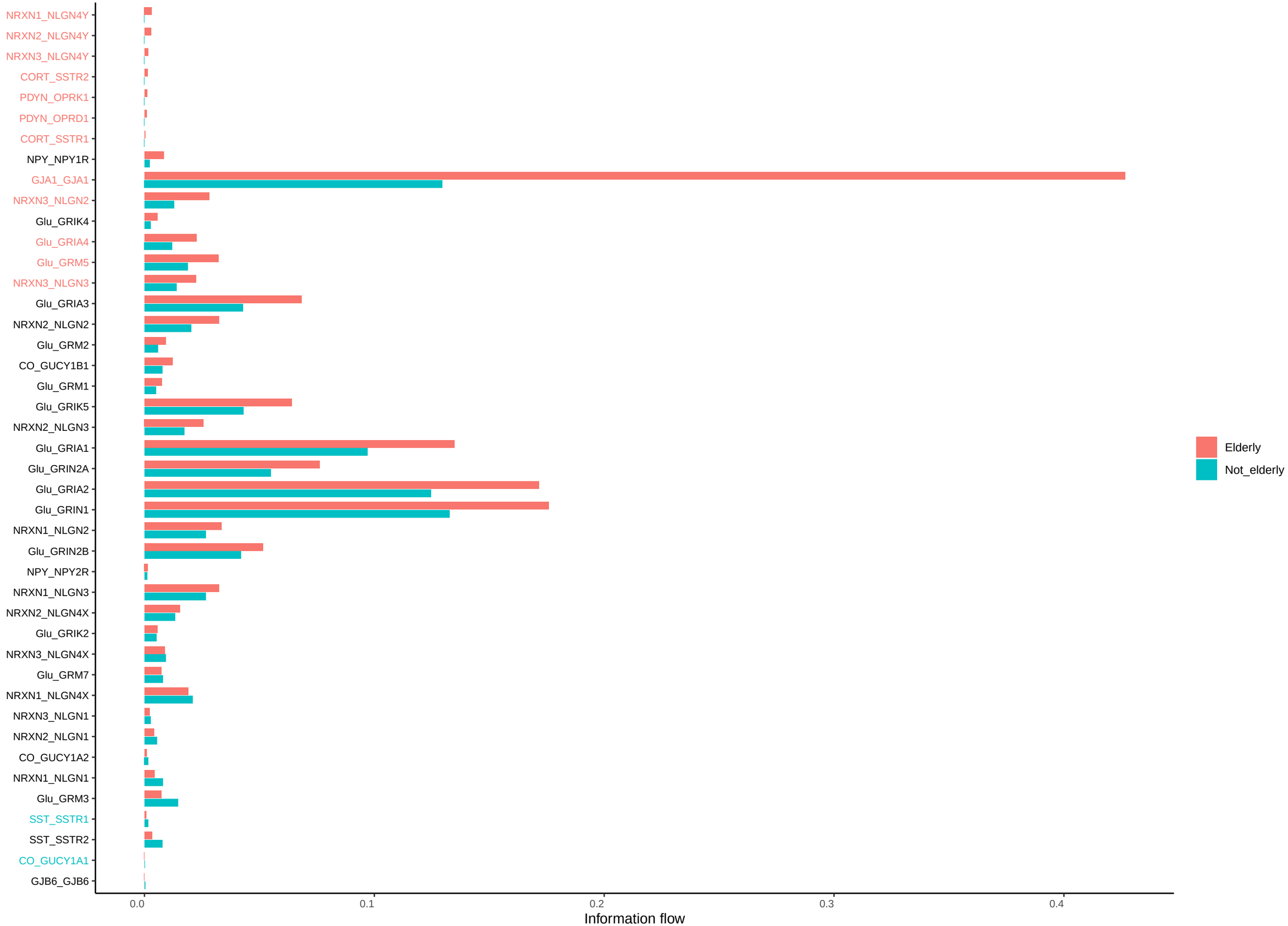
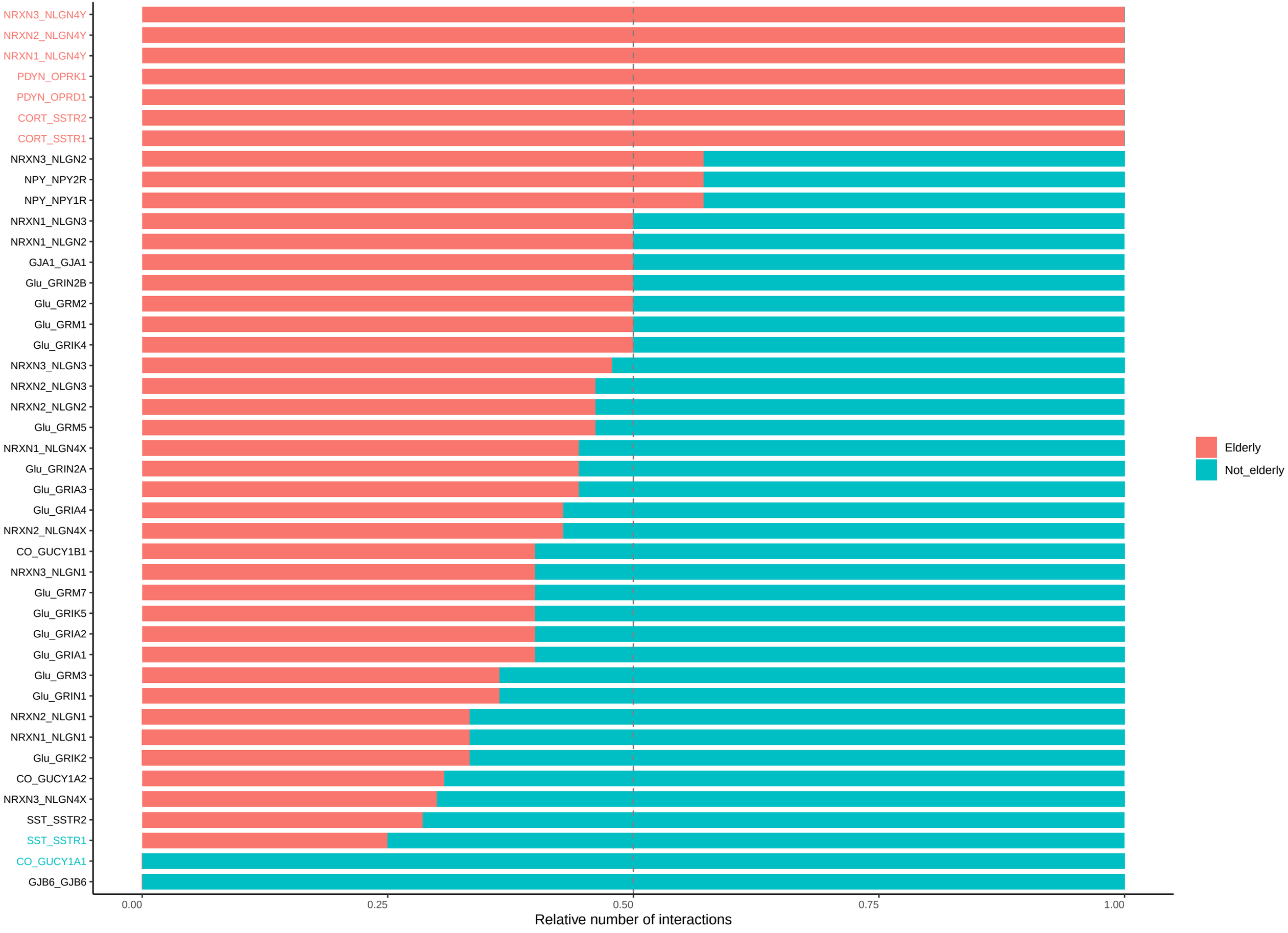
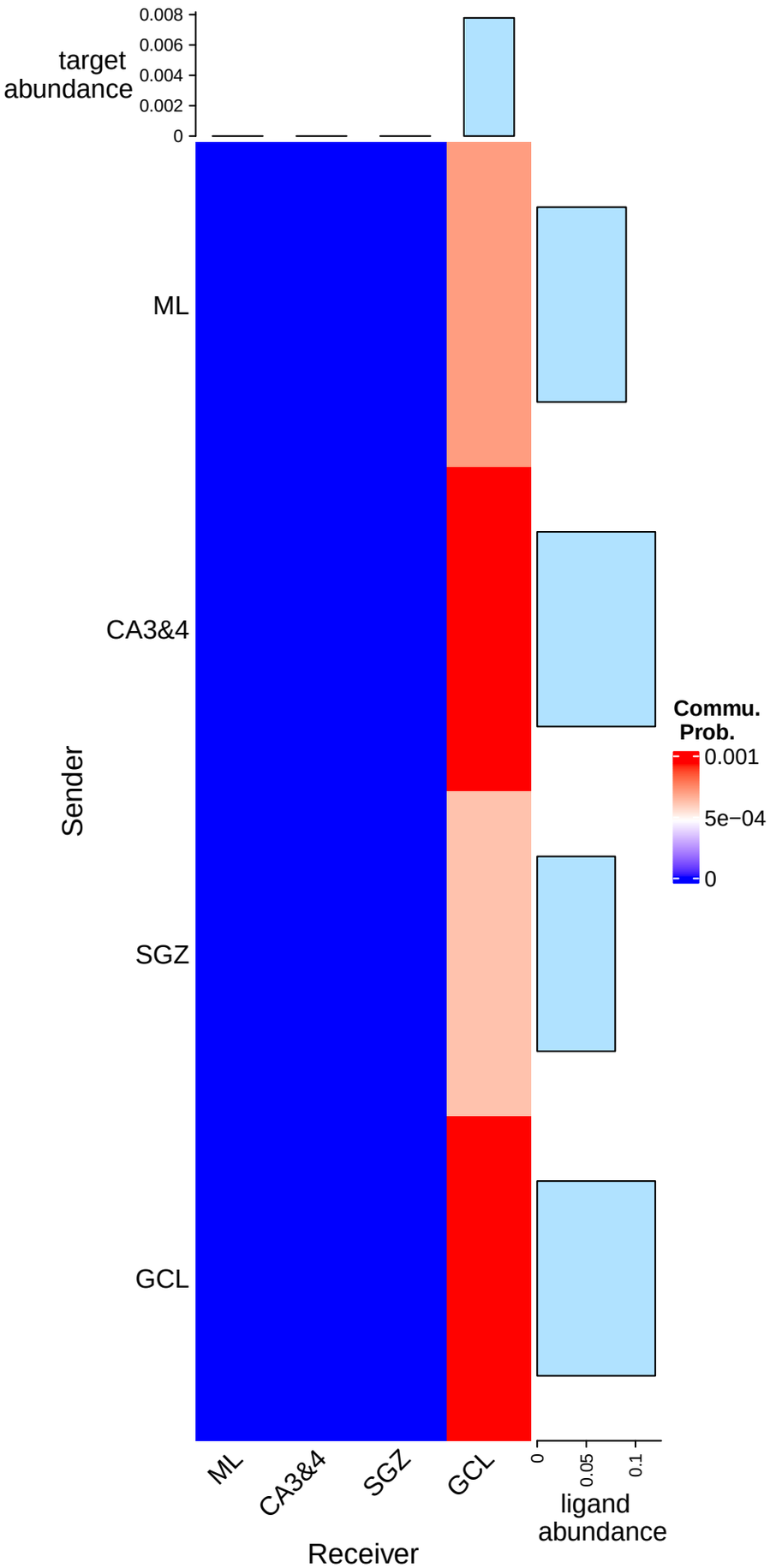
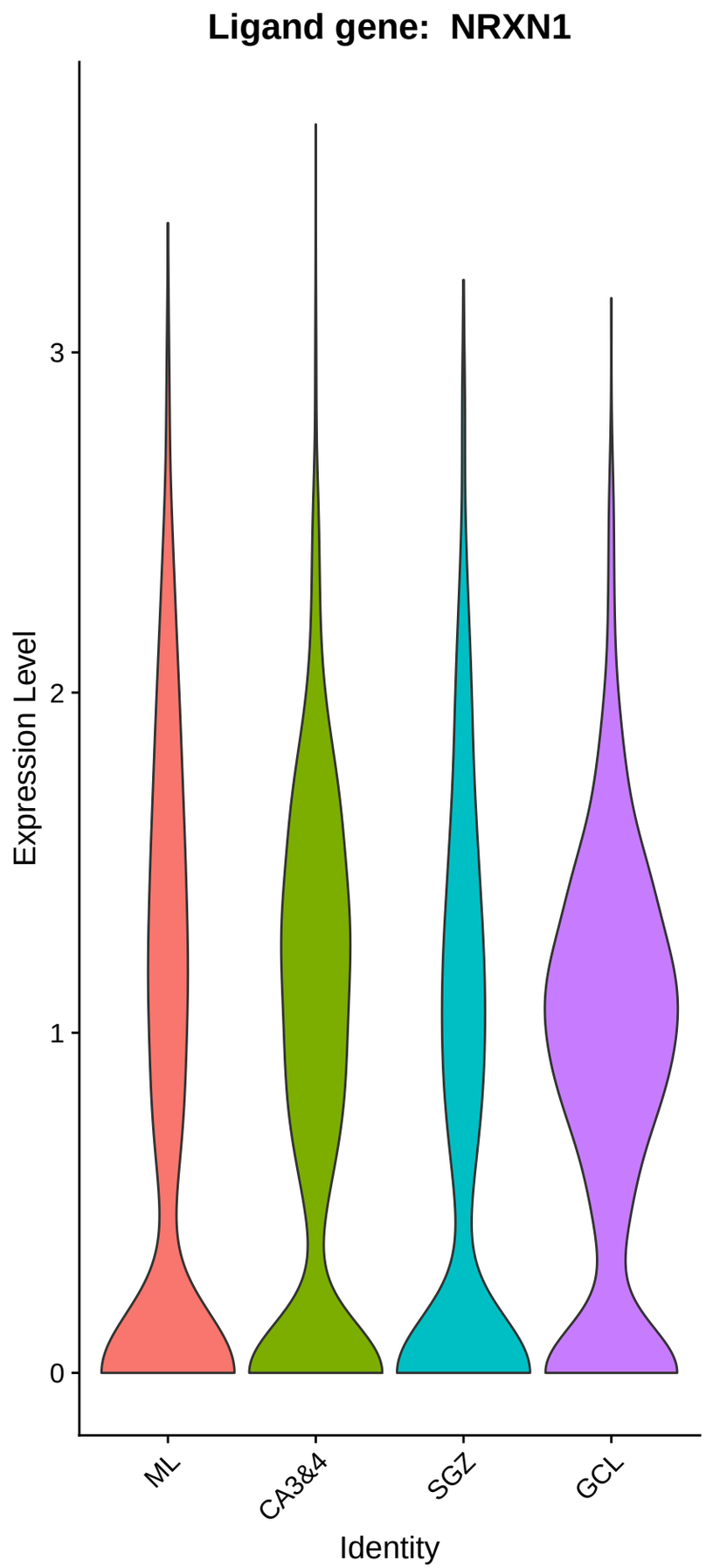

NRXN1_NLGN4Y
NRXN2_NLGN4Y
NRXN3_NLGN4Y
CORT_SSTR2
PDYN_OPRK1
PDYN_OPRD1
CORT_SSTR1
NPY_NPY1R
GJA1_GJA1
NRXN3_NLGN2
Glu_GRIK4
Glu_GRIA4
Glu_GRM5
NRXN3_NLGN3
Glu_GRIA3
NRXN2_NLGN2
Glu_GRM2
CO_GUCY1B1
Glu_GRM1
Glu_GRIK5
NRXN2_NLGN3
Glu_GRIA1
Glu_GRIN2A
Glu_GRIA2
Glu_GRIN1
NRXN1_NLGN2
Glu_GRIN2B
NPY_NPY2R
NRXN1_NLGN3
NRXN2_NLGN4X
Glu_GRIK2
NRXN3_NLGN4X
Glu_GRM7
NRXN1_NLGN4X
NRXN3_NLGN1
NRXN2_NLGN1
CO_GUCY1A2
NRXN1_NLGN1
Glu_GRM3
SST_SSTR1
SST_SSTR2
CO_GUCY1A1
GJB6_GJB6
0.00
0.25
0.50
0.75
1.00
Relative information flow
Elderly
Not_elderly

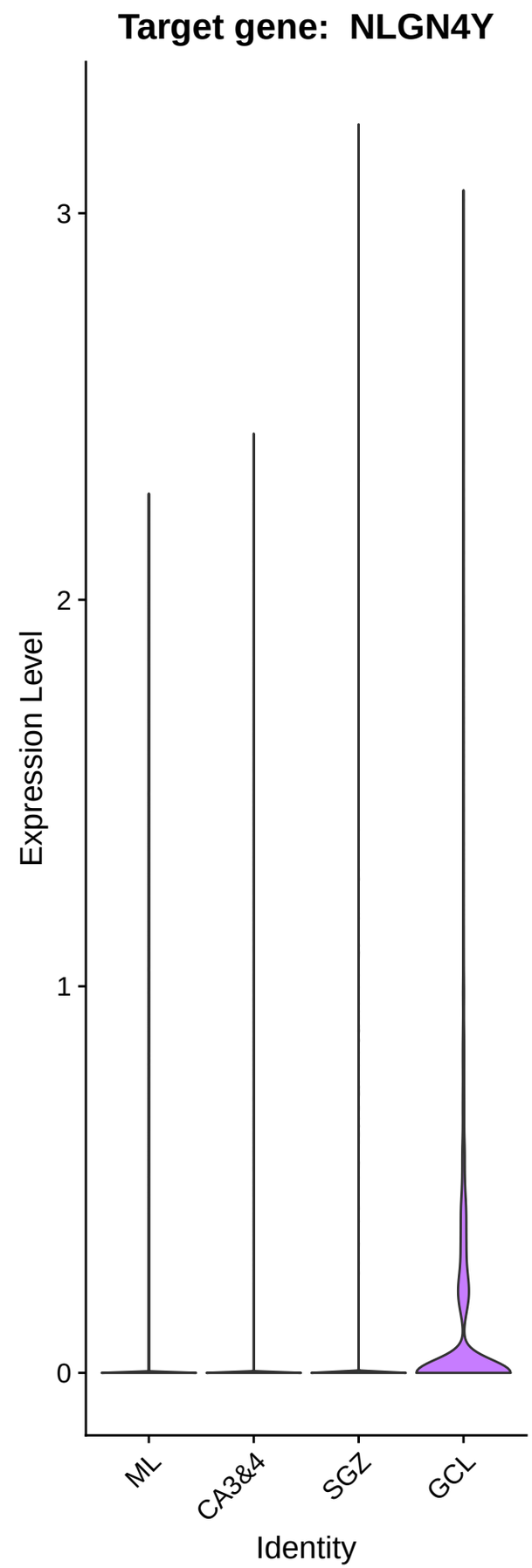

NRXN1_NLGN4Y
NRXN2_NLGN4Y
NRXN3_NLGN4Y
CORT_SSTR2
PDYN_OPRK1
PDYN_OPRD1
CORT_SSTR1
NPY_NPY1R
GJA1_GJA1
NRXN3_NLGN2
Glu_GRIK4
Glu_GRIA4
Glu_GRM5
NRXN3_NLGN3
Glu_GRIA3
NRXN2_NLGN2
Glu_GRM2
CO_GUCY1B1
Glu_GRM1
Glu_GRIK5
NRXN2_NLGN3
Glu_GRIA1
Glu_GRIN2A
Glu_GRIA2
Glu_GRIN1
NRXN1_NLGN2
Glu_GRIN2B
NPY_NPY2R
NRXN1_NLGN3
NRXN2_NLGN4X
Glu_GRIK2
NRXN3_NLGN4X
Glu_GRM7
NRXN1_NLGN4X
NRXN3_NLGN1
NRXN2_NLGN1
CO_GUCY1A2
NRXN1_NLGN1
Glu_GRM3
SST_SSTR1
SST_SSTR2
CO_GUCY1A1
GJB6_GJB6
0.0
0.1
0.2
0.3
0.4
Information flow
Elderly
Not_elderly

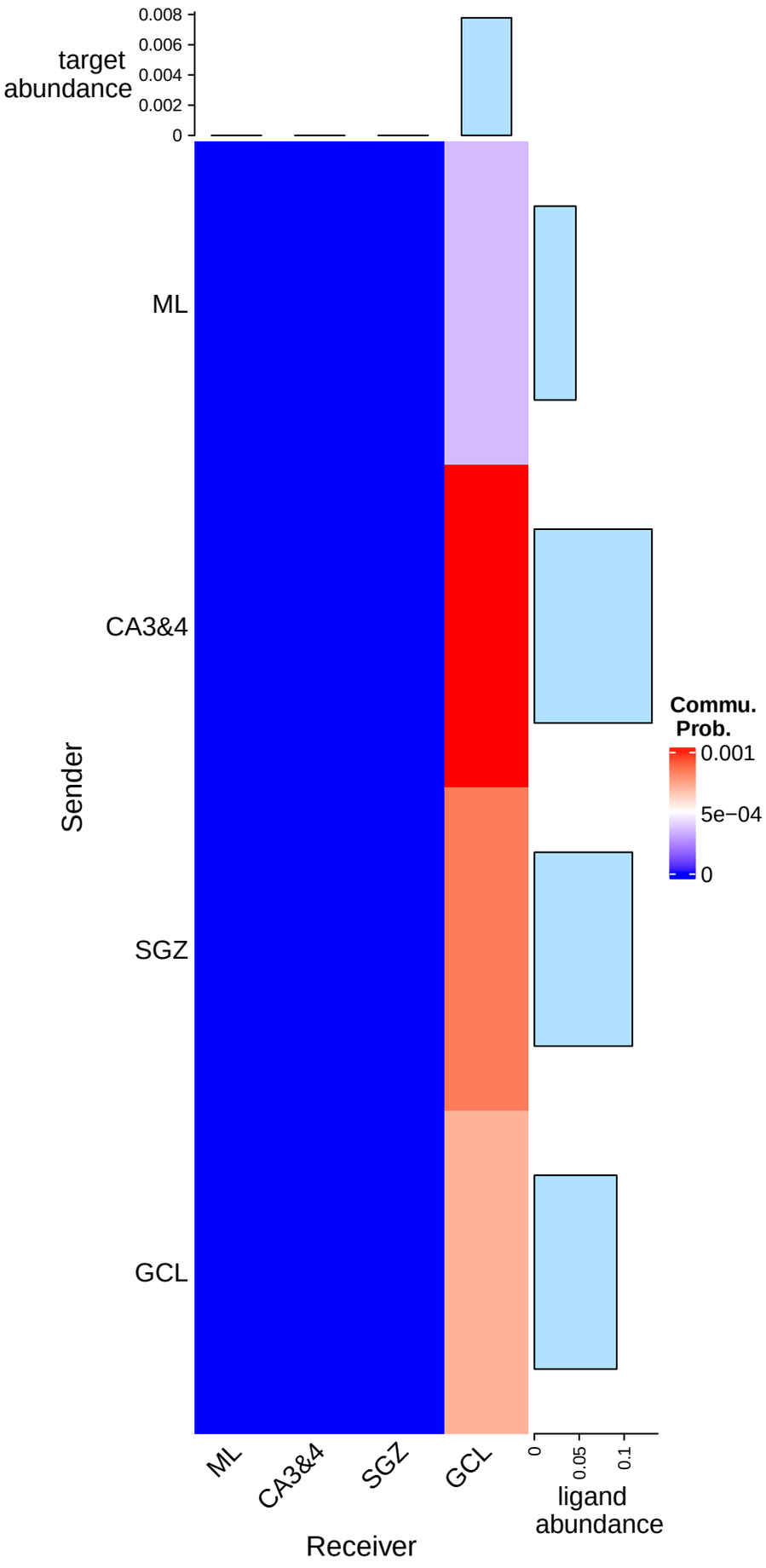

NRXN3_NLGN4Y
NRXN2_NLGN4Y
NRXN1_NLGN4Y
PDYN_OPRK1
PDYN_OPRD1
CORT_SSTR2
CORT_SSTR1
NRXN3_NLGN2
NPY_NPY2R
NPY_NPY1R
NRXN1_NLGN3
NRXN1_NLGN2
GJA1_GJA1
Glu_GRIN2B
Glu_GRM2
Glu_GRM1
Glu_GRIK4
NRXN3_NLGN3
NRXN2_NLGN3
NRXN2_NLGN2
Glu_GRM5
NRXN1_NLGN4X
Glu_GRIN2A
Glu_GRIA3
Glu_GRIA4
NRXN2_NLGN4X
CO_GUCY1B1
NRXN3_NLGN1
Glu_GRM7
Glu_GRIK5
Glu_GRIA2
Glu_GRIA1
Glu_GRM3
Glu_GRIN1
NRXN2_NLGN1
NRXN1_NLGN1
Glu_GRIK2
CO_GUCY1A2
NRXN3_NLGN4X
SST_SSTR2
SST_SSTR1
CO_GUCY1A1
GJB6_GJB6
0.00
0.25
0.50
0.75
1.00
Relative number of interactions
Elderly
Not_elderly

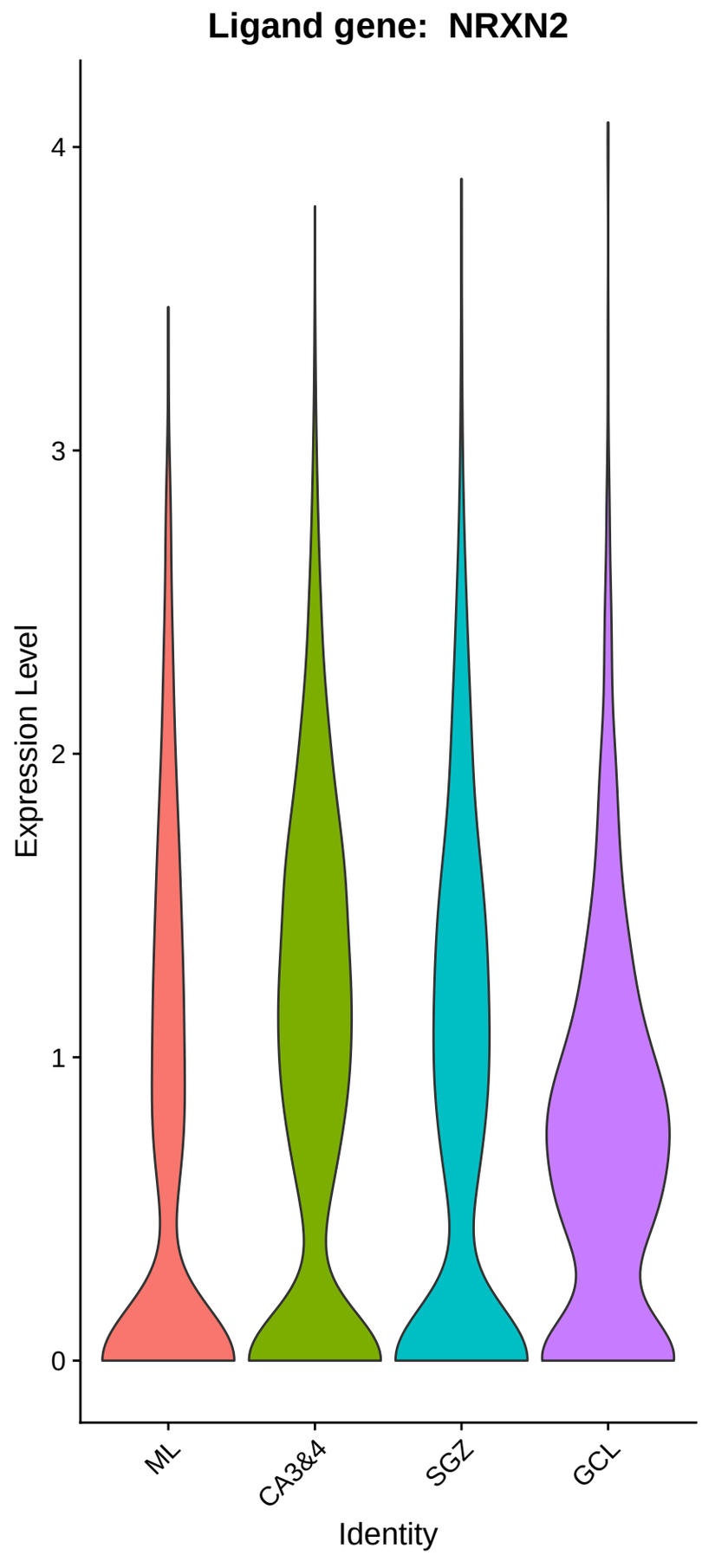
NRXN3_NLGN4Y
NRXN2_NLGN4Y
NRXN1_NLGN4Y
PDYN_OPRK1
PDYN_OPRD1
CORT_SSTR2
CORT_SSTR1
NRXN3_NLGN2
NPY_NPY2R
NPY_NPY1R
NRXN1_NLGN3
NRXN1_NLGN2
GJA1_GJA1
Glu_GRIN2B
Glu_GRM2
Glu_GRM1
Glu_GRIK4
NRXN3_NLGN3
NRXN2_NLGN3
NRXN2_NLGN2
Glu_GRM5
NRXN1_NLGN4X
Glu_GRIN2A
Glu_GRIA3
Glu_GRIA4
NRXN2_NLGN4X
CO_GUCY1B1
NRXN3_NLGN1
Glu_GRM7
Glu_GRIK5
Glu_GRIA2
Glu_GRIA1
Glu_GRM3
Glu_GRIN1
NRXN2_NLGN1
NRXN1_NLGN1
Glu_GRIK2
CO_GUCY1A2
NRXN3_NLGN4X
SST_SSTR2
SST_SSTR1
CO_GUCY1A1
GJB6_GJB6
0.0
2.5
5.0
7.5
10.0
12.5
Number of links
Elderly
Not_elderly

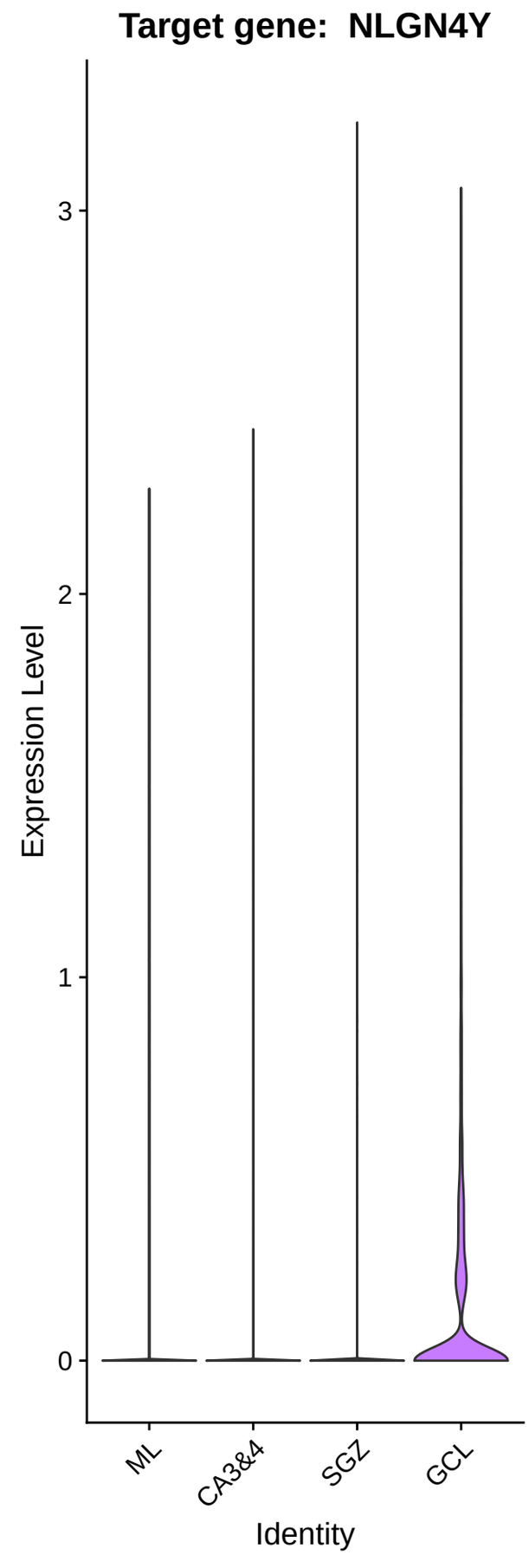

target abundance
0.008
0.006
0.004
0.002
0
ML
CA3&4
SGZ
GCL
Sender
Commu. Prob.
0.001
5e−04
0
ML
CA3&4
SGZ
GCL
Receiver
0
0.05
0.1
ligand abundance

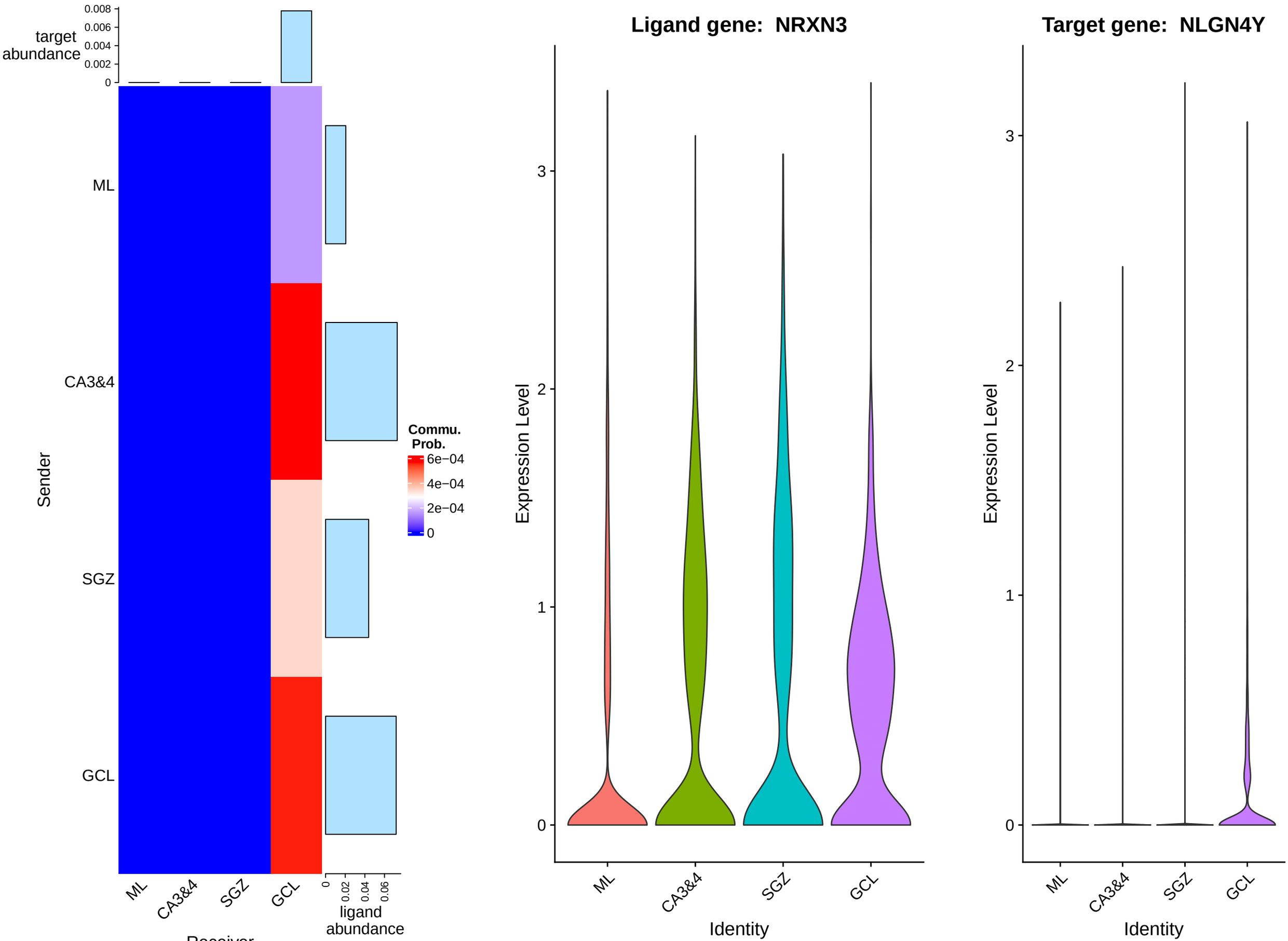

Ligand gene: NRXN1
Expression Level
0
1
2
3
ML
CA3&4
SGZ
GCL
Identity

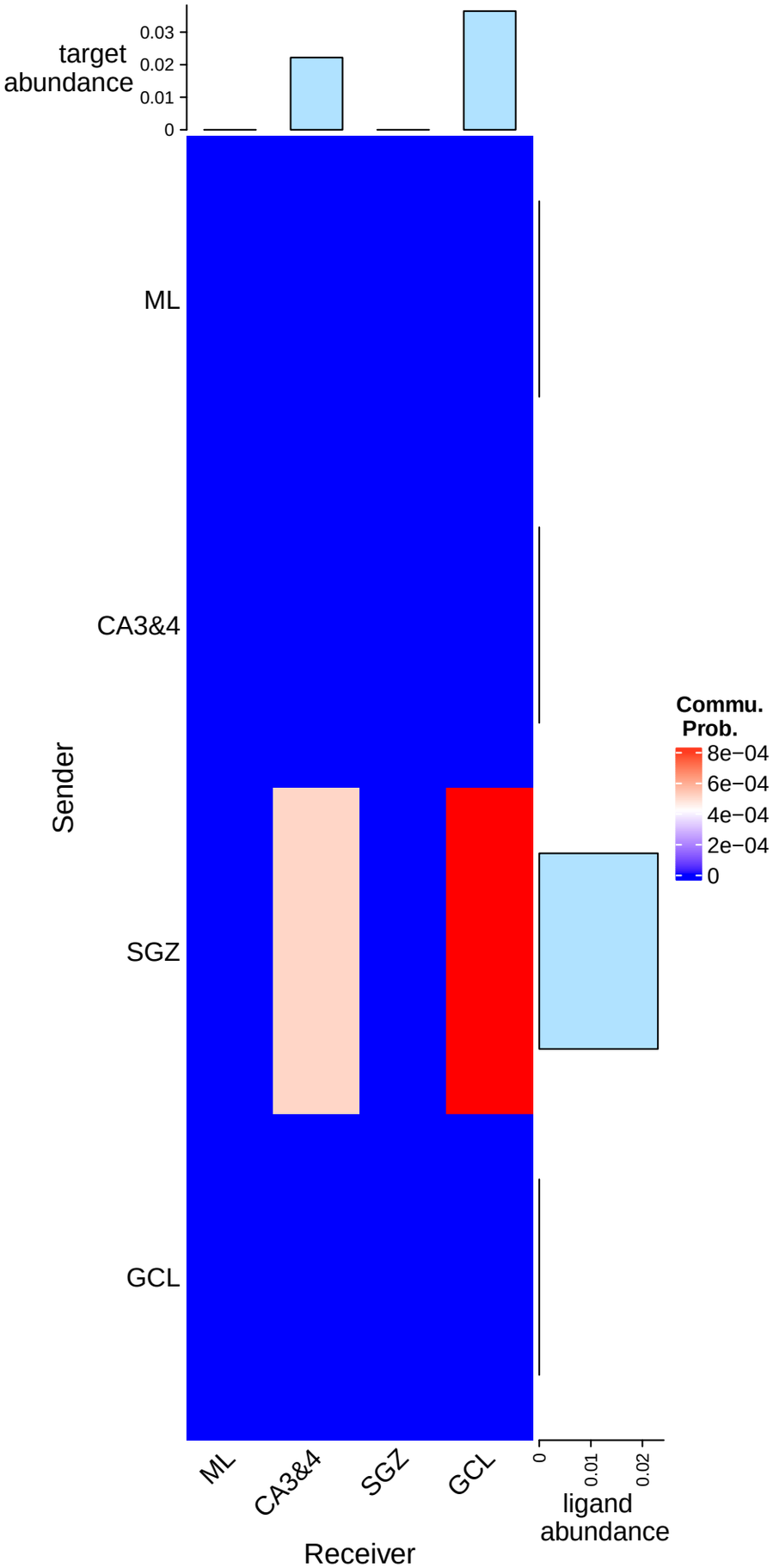

Target gene: NLGN4Y
Expression Level
0
1
2
3
ML
CA3&4
SGZ
GCL
Identity

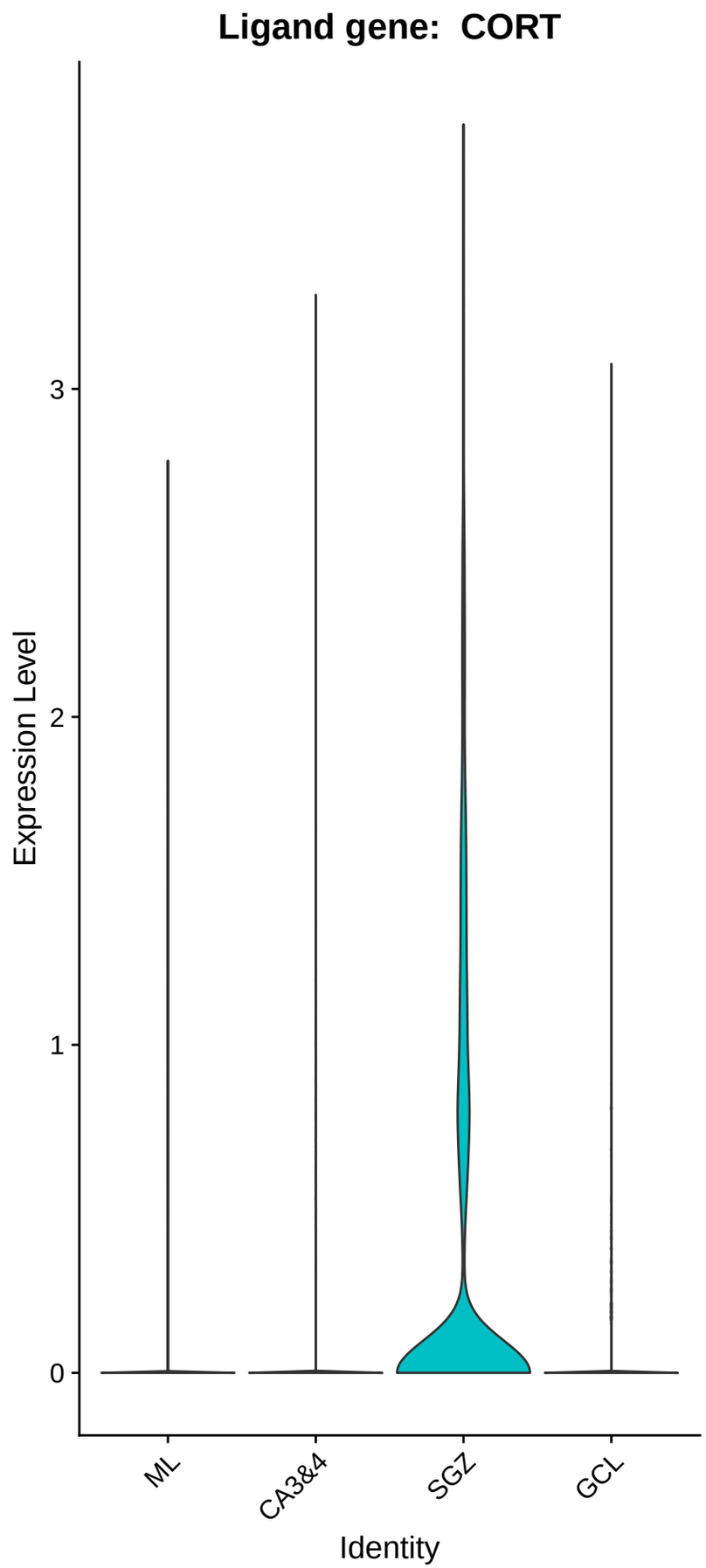

target abundance
0.008
0.006
0.004
0.002
0
Sender
ML
CA3&4
SGZ
GCL
Receiver
ML
CA3&4
SGZ
GCL
ligand abundance
0
0.05
0.1
Commu. Prob.
0.001
5e−04
0

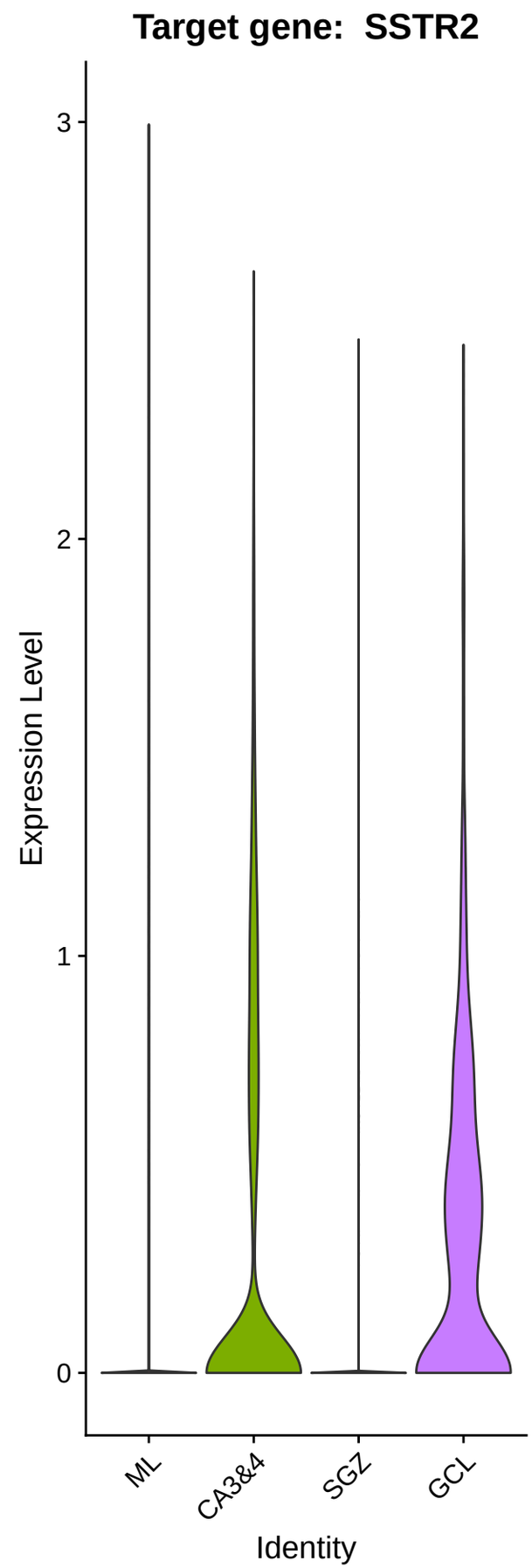

Ligand gene: NRXN2
Expression Level
0
1
2
3
4
ML
CA3&4
SGZ
GCL
Identity

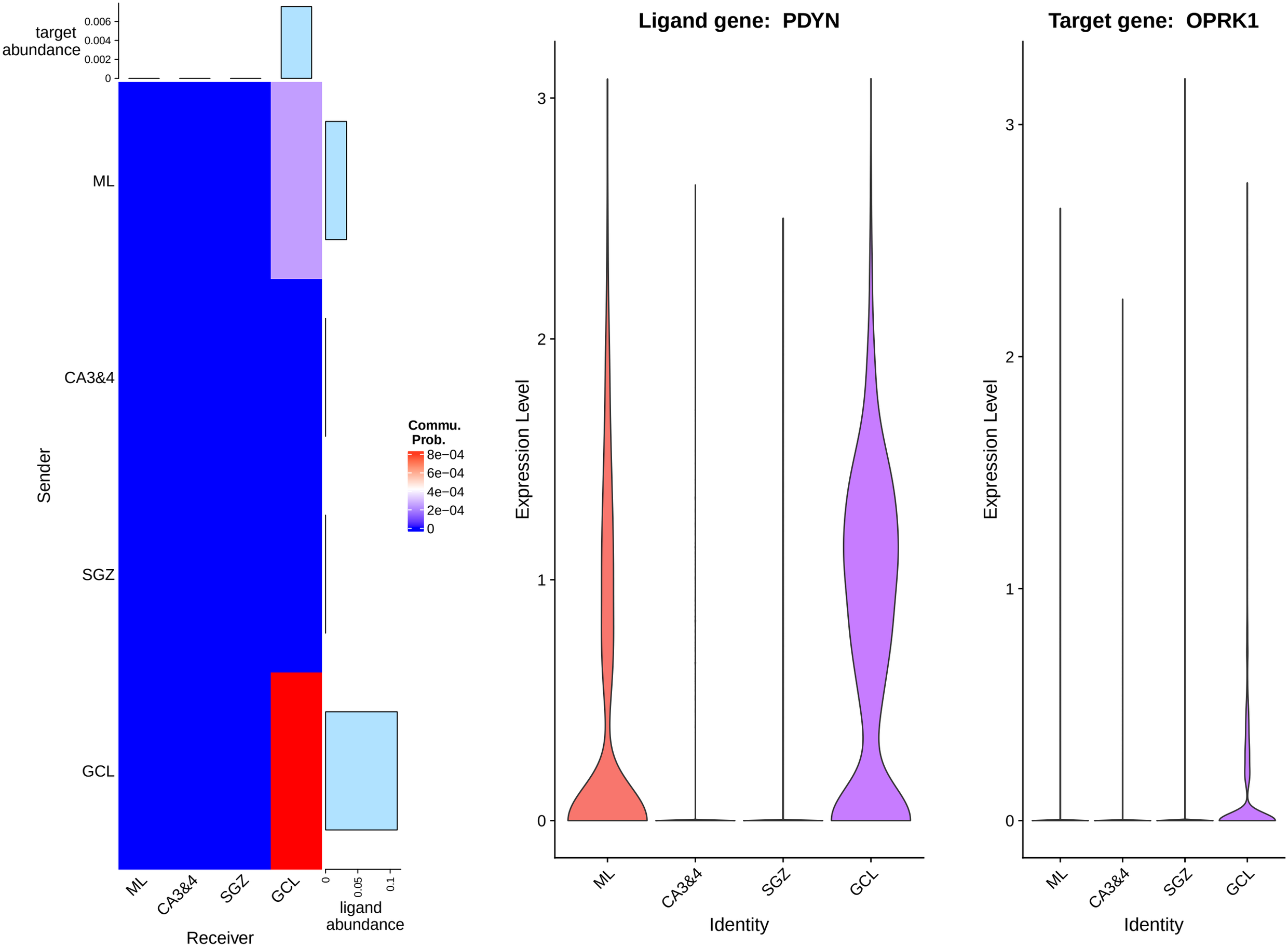

Target gene: NLGN4Y
Expression Level
0
1
2
3
ML
CA3&4
SGZ
GCL
Identity

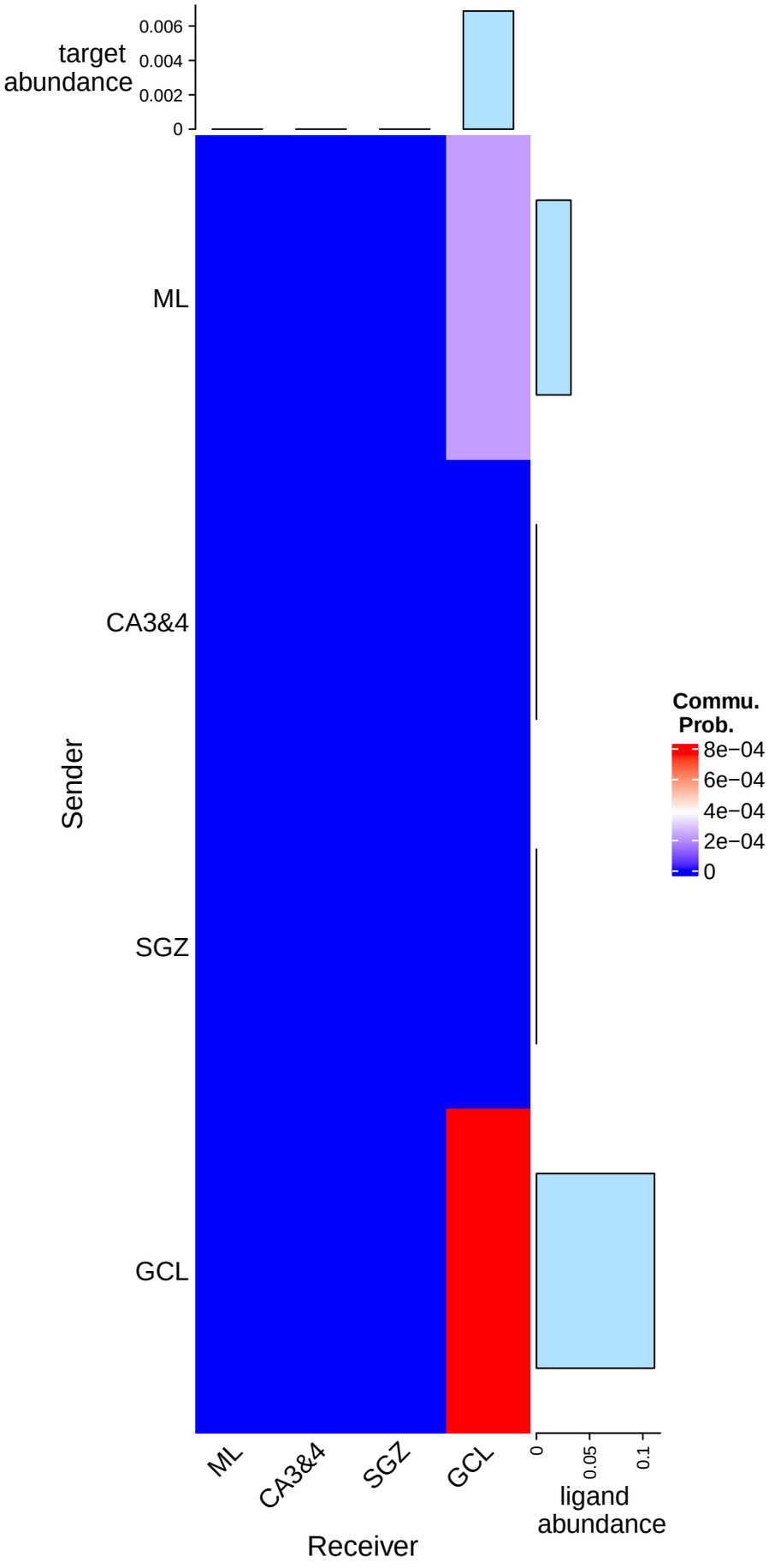

target abundance
0.008
0.006
0.004
0.002
0
Sender
ML
CA3&4
SGZ
GCL
Receiver
ML
CA3&4
SGZ
GCL
0
0.02
0.04
0.06
ligand abundance
Commu. Prob.
6e−04
4e−04
2e−04
0
Ligand gene: NRXN3
Expression Level
3
2
1
0
ML
CA3&4
SGZ
GCL
Identity
Target gene: NLGN4Y
Expression Level
3
2
1
0
ML
CA3&4
SGZ
GCL
Identity

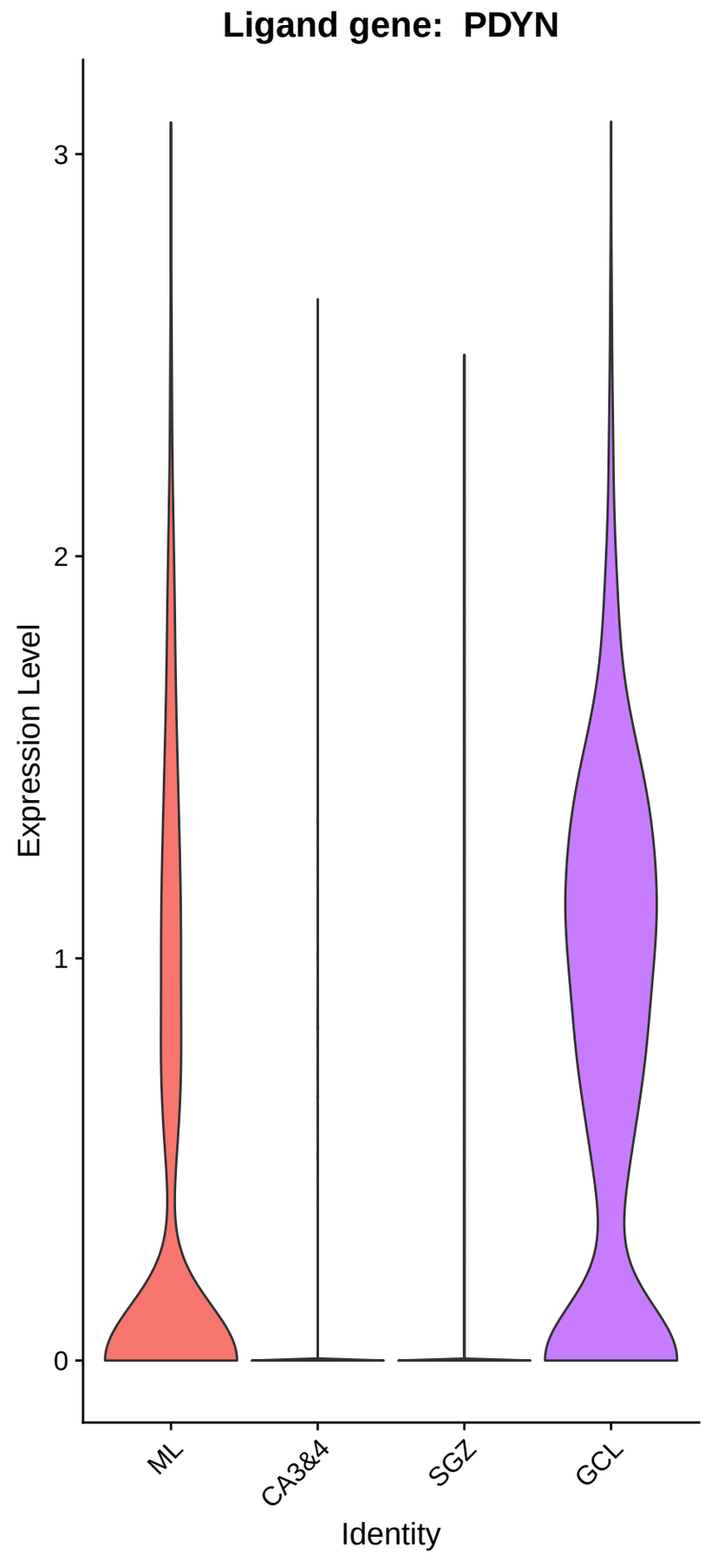

target abundance
0.03
0.02
0.01
0
ML
CA3&4
SGZ
GCL
Sender
Commu. Prob.
8e−04
6e−04
4e−04
2e−04
0
ML
CA3&4
SGZ
GCL
Receiver
0
0.01
0.02
ligand abundance

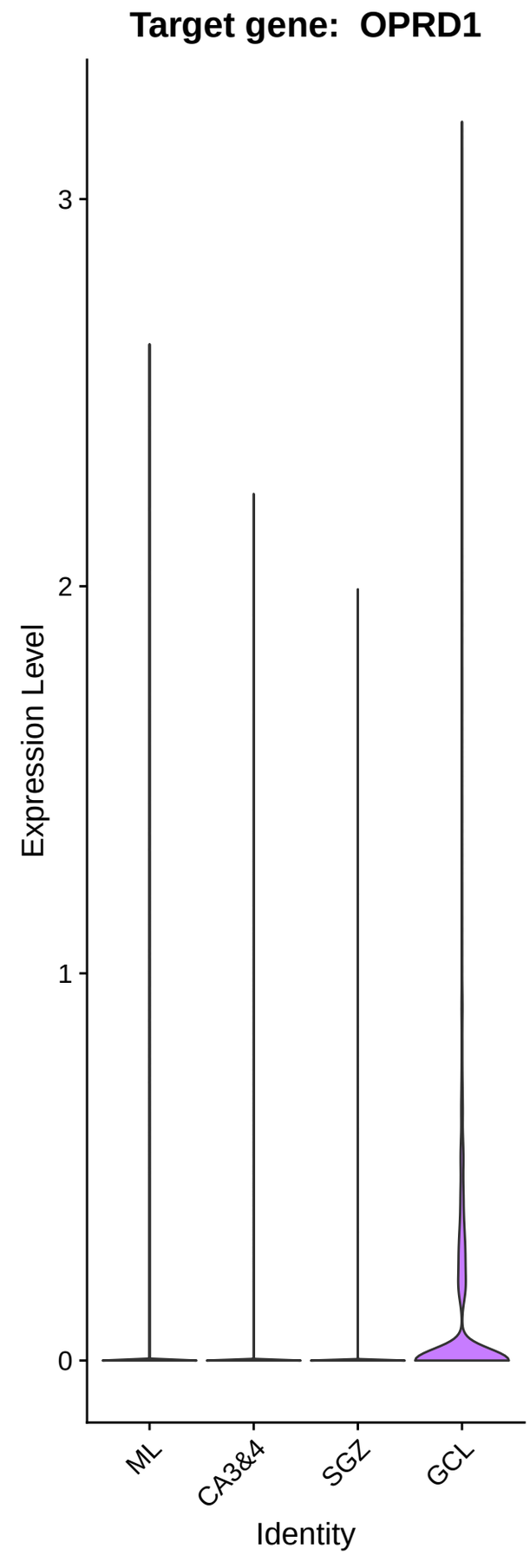

Ligand gene: CORT
Expression Level
0
1
2
3
ML
CA3&4
SGZ
GCL
Identity

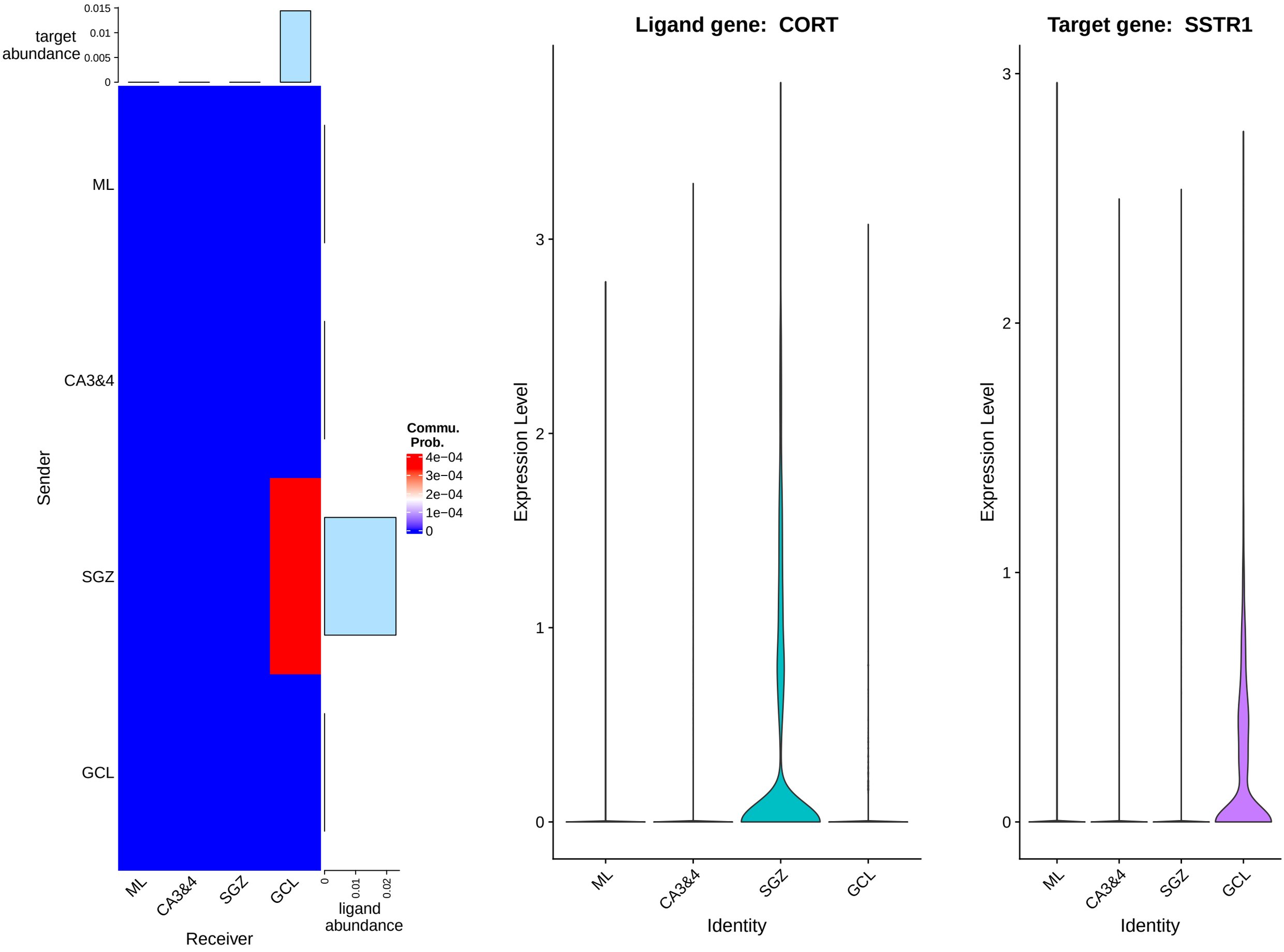

Target gene: SSTR2
Expression Level
0
1
2
3
ML
CA3&4
SGZ
GCL
Identity

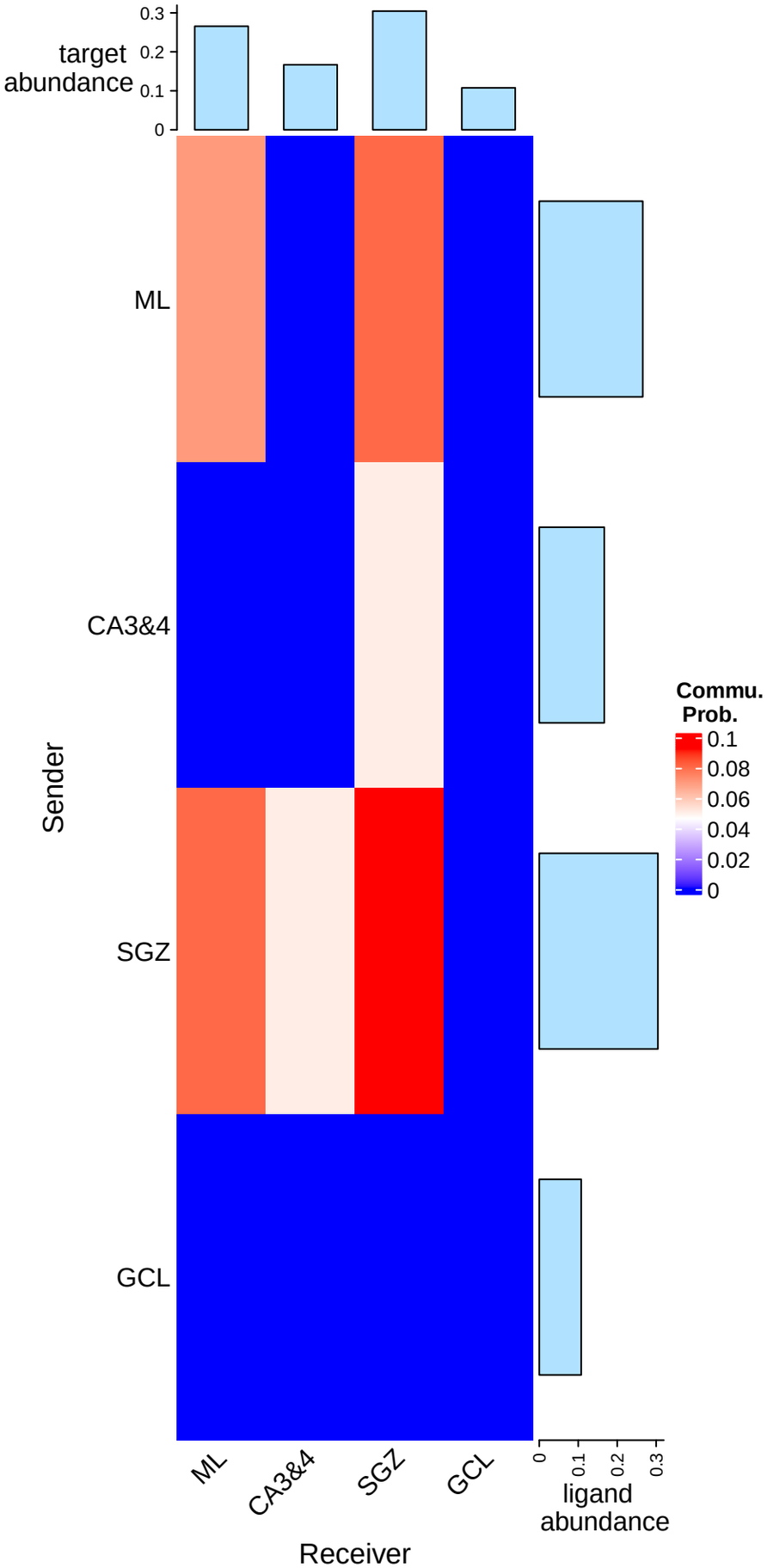

target abundance
0.006
0.004
0.002
0
ML
CA3&4
SGZ
GCL
Sender
Commu. Prob.
8e−04
6e−04
4e−04
2e−04
0
ML
CA3&4
SGZ
GCL
Receiver
0
0.05
0.1
ligand abundance
Ligand gene: PDYN
Expression Level
3
2
1
0
ML
CA3&4
SGZ
GCL
Identity
Target gene: OPRK1
Expression Level
3
2
1
0
ML
CA3&4
SGZ
GCL
Identity

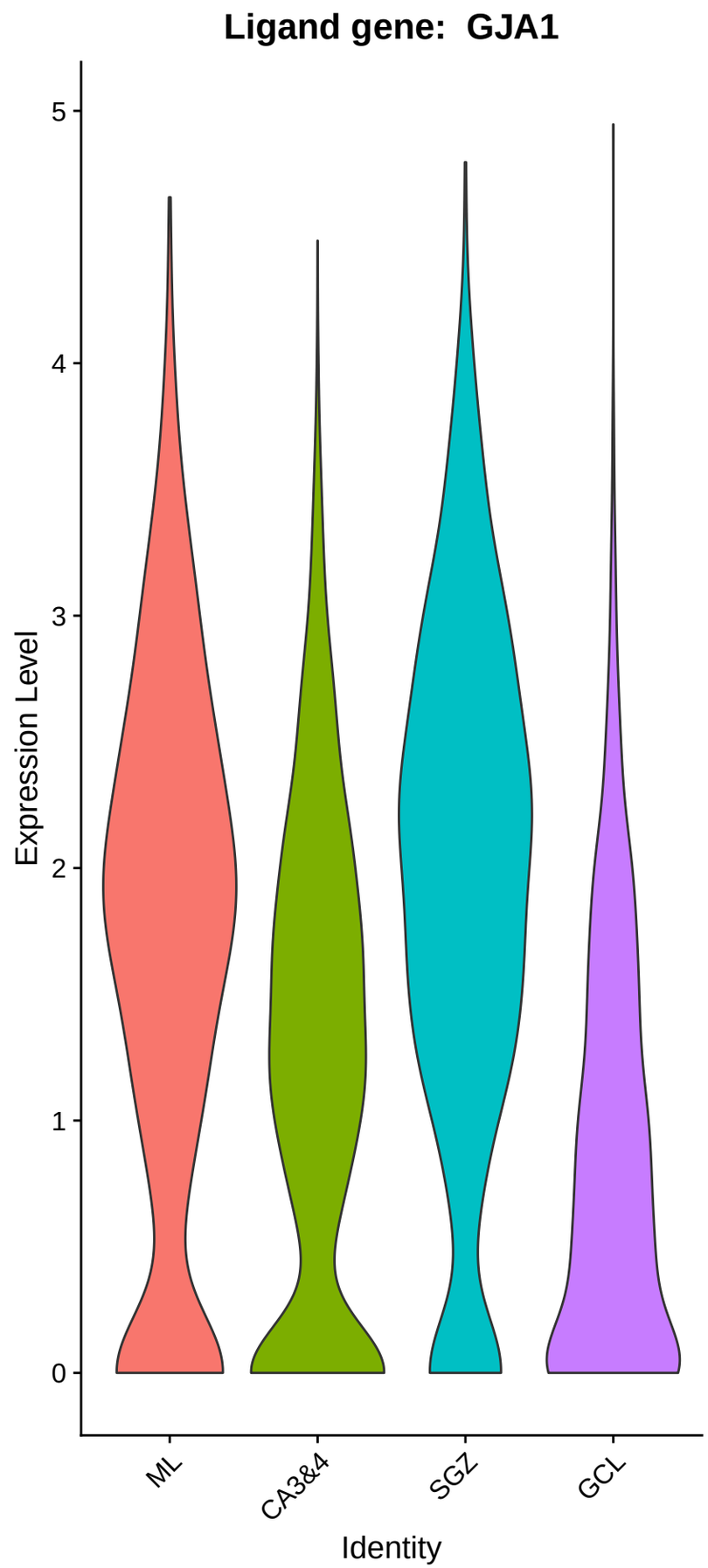

target abundance
0.006
0.004
0.002
0
ML
CA3&4
SGZ
GCL
Sender
Commu. Prob.
8e−04
6e−04
4e−04
2e−04
0
ML
CA3&4
SGZ
GCL
Receiver
0
0.05
0.1
ligand abundance

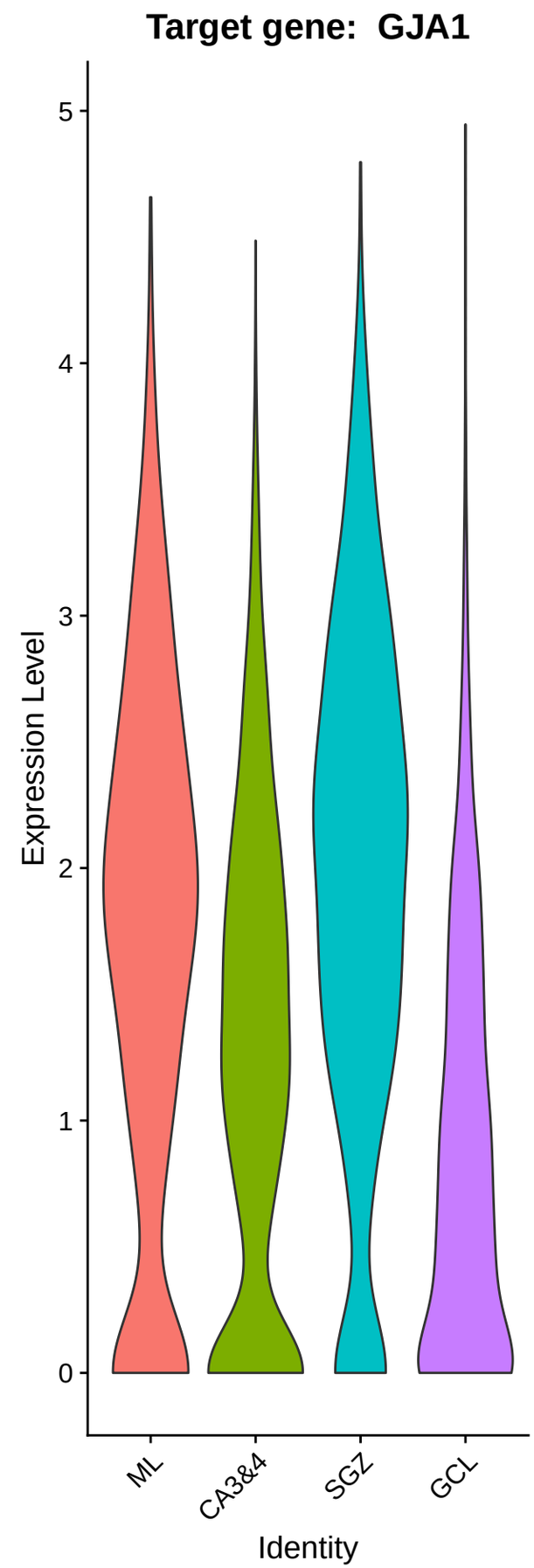

Ligand gene: PDYN
Expression Level
3
2
1
0
ML
CA3&4
SGZ
GCL
Identity

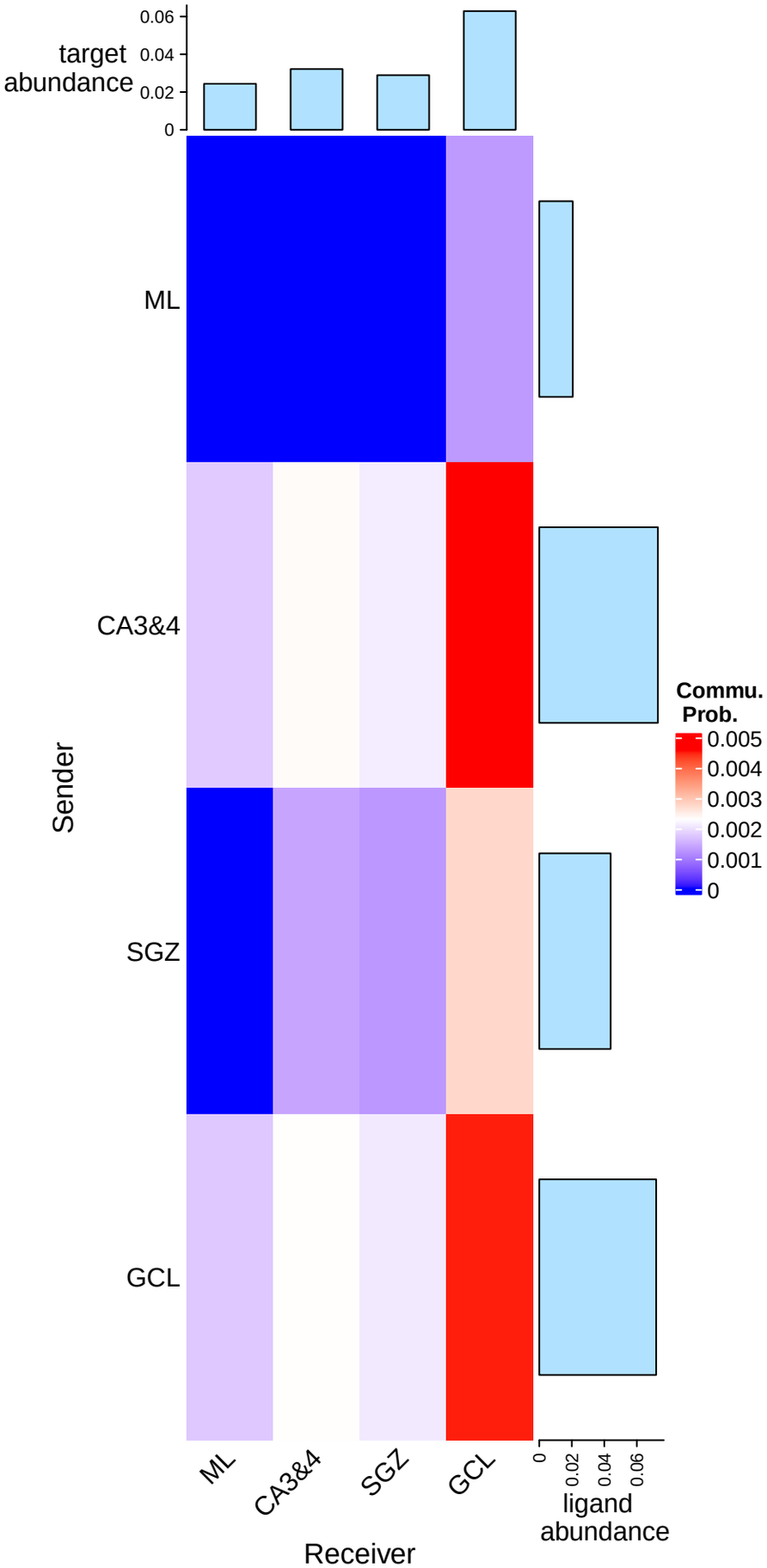

Target gene: OPRD1
Expression Level
3
2
1
0
ML
CA3&4
SGZ
GCL
Identity

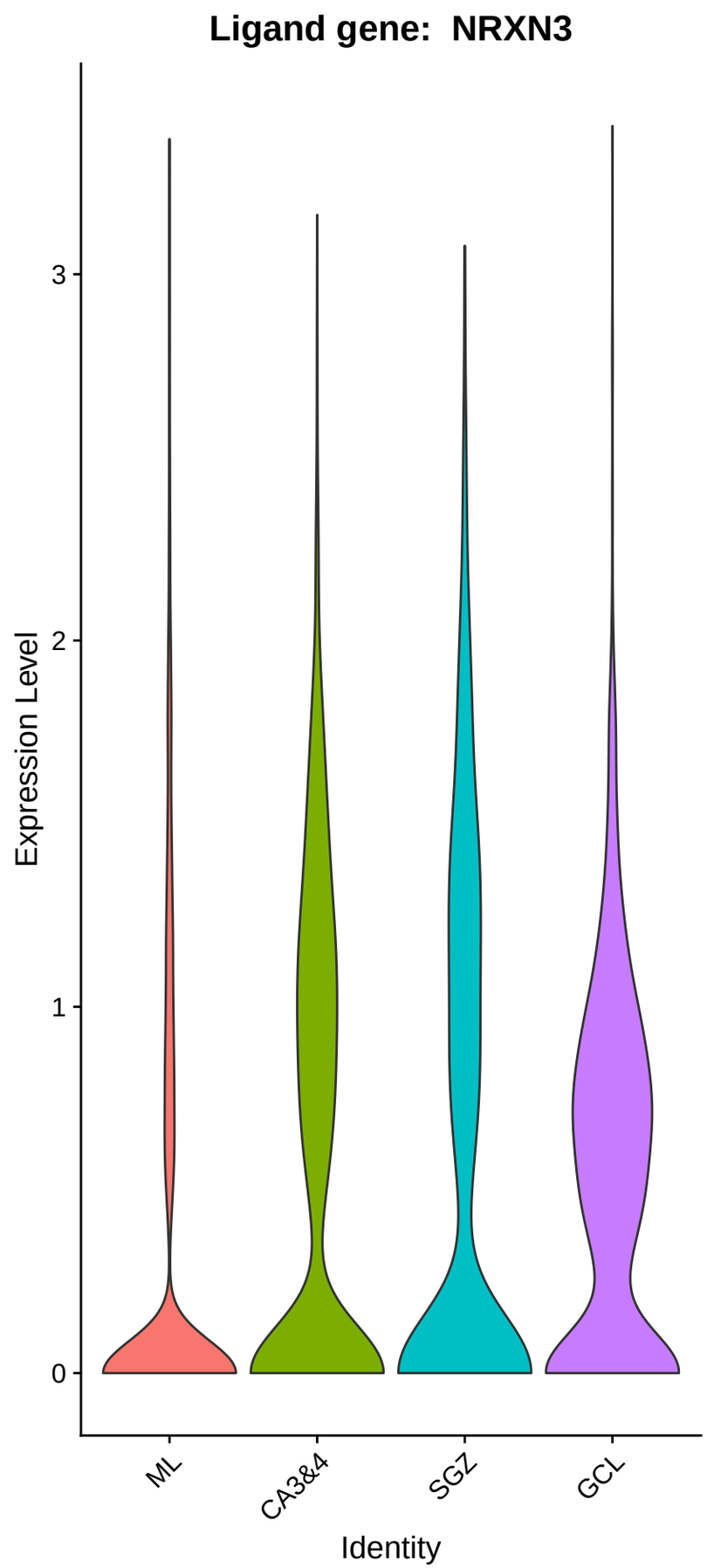

target abundance
0.015
0.01
0.005
0
Sender
ML
CA3&4
SGZ
GCL
Receiver
ML
CA3&4
SGZ
GCL
0
0.01
0.02
ligand abundance
Commu. Prob.
4e−04
3e−04
2e−04
1e−04
0
Ligand gene: CORT
Expression Level
Identity
Target gene: SSTR1
Expression Level
Identity

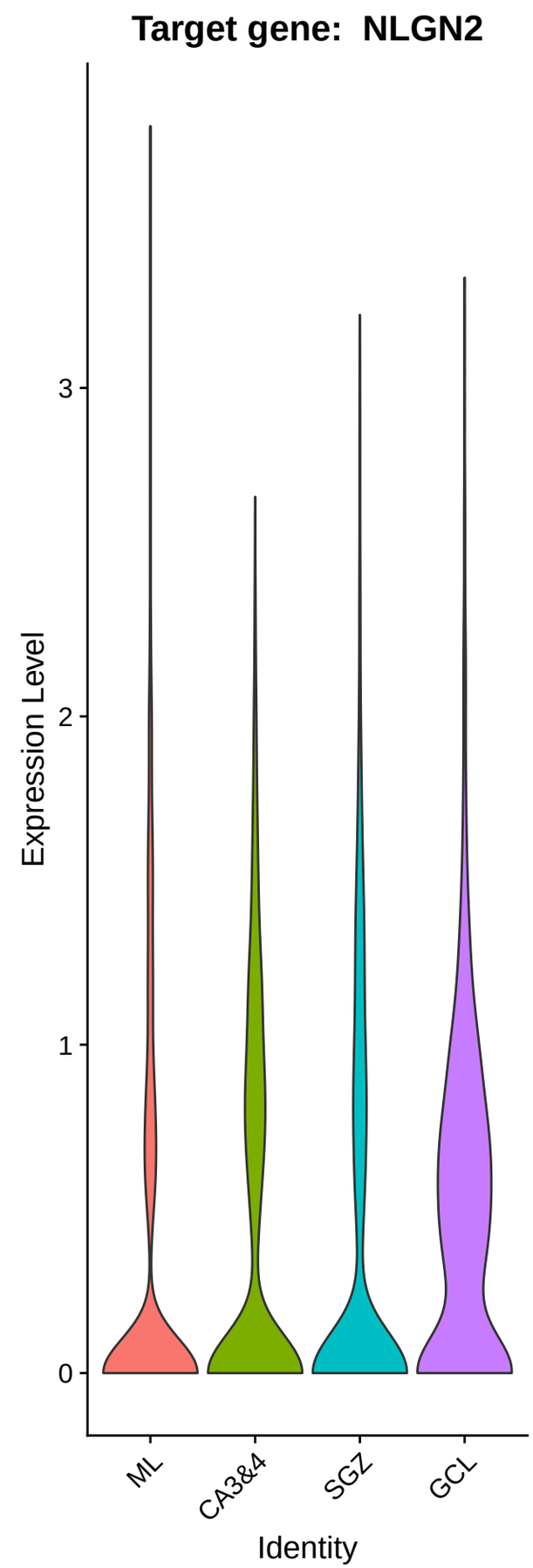

target abundance
0.3
0.2
0.1
0
ML
CA3&4
SGZ
GCL
Sender
Receiver
ligand abundance
Commu. Prob.
0.1
0.08
0.06
0.04
0.02
0

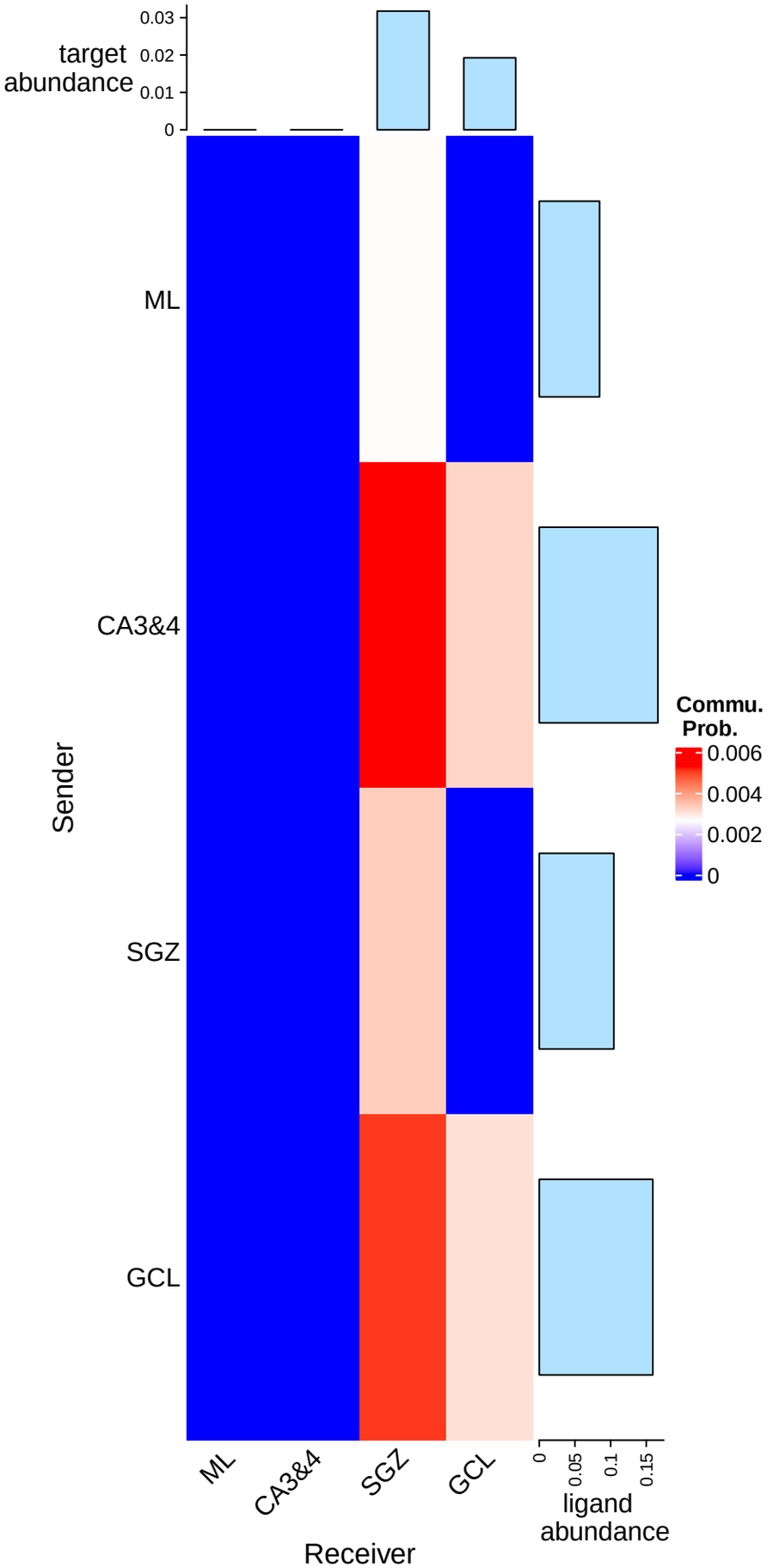

Ligand gene: GJA1
Expression Level
5
4
3
2
1
0
ML
CA3&4
SGZ
GCL
Identity

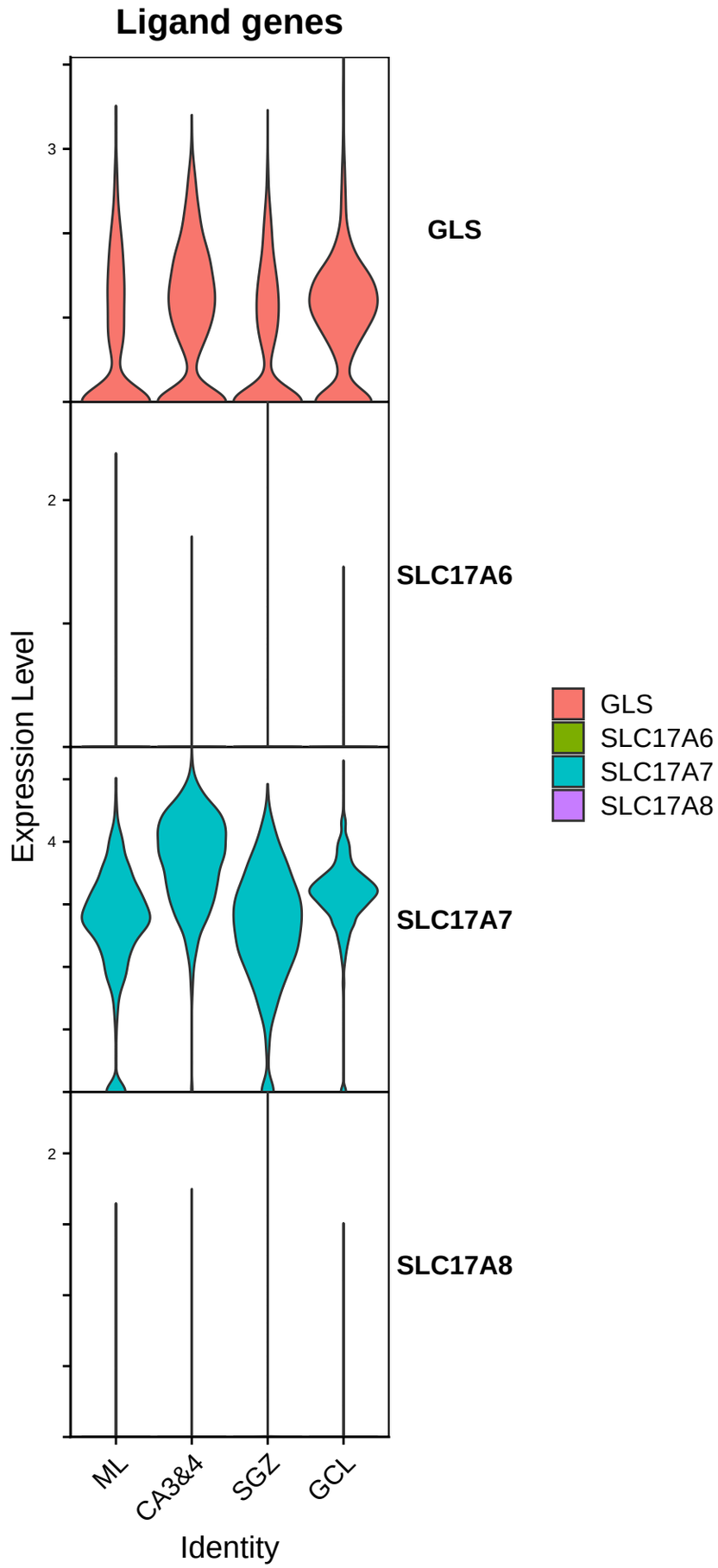

Target gene: GJA1
Expression Level
5
4
3
2
1
0
ML
CA3&4
SGZ
GCL
Identity

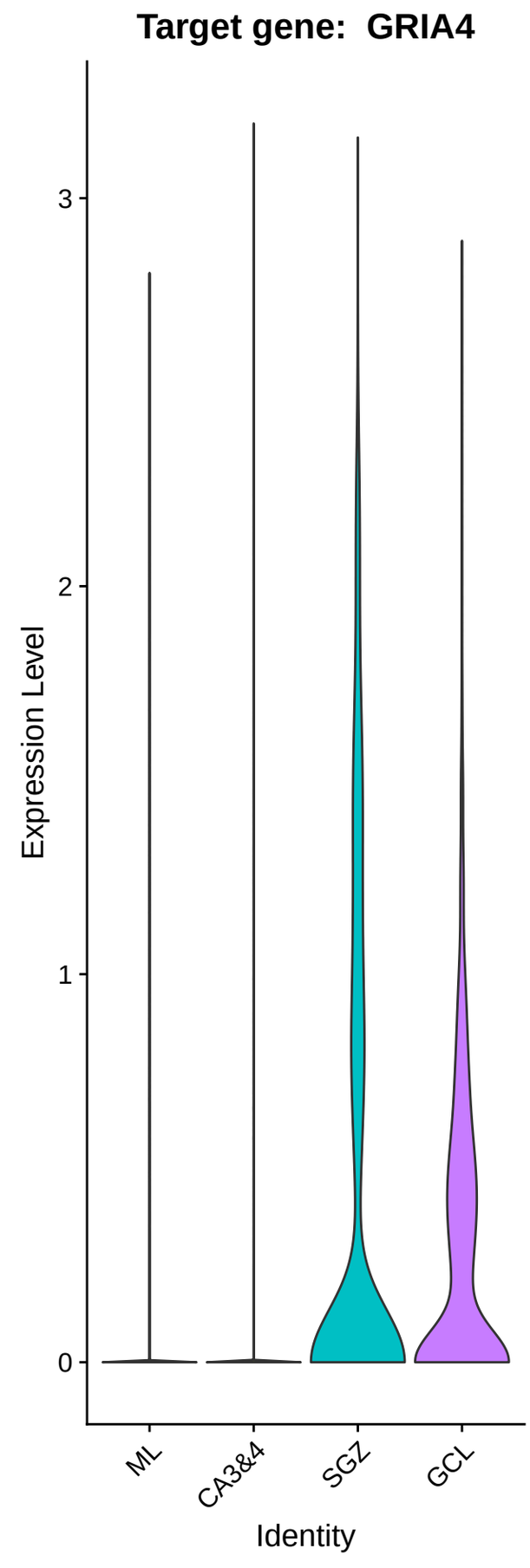

target abundance
0.06
0.04
0.02
0
ML
CA3&4
SGZ
GCL
Sender
Receiver
ML
CA3&4
SGZ
GCL
0
0.02
0.04
0.06
ligand abundance
Commu. Prob.
0.005
0.004
0.003
0.002
0.001
0

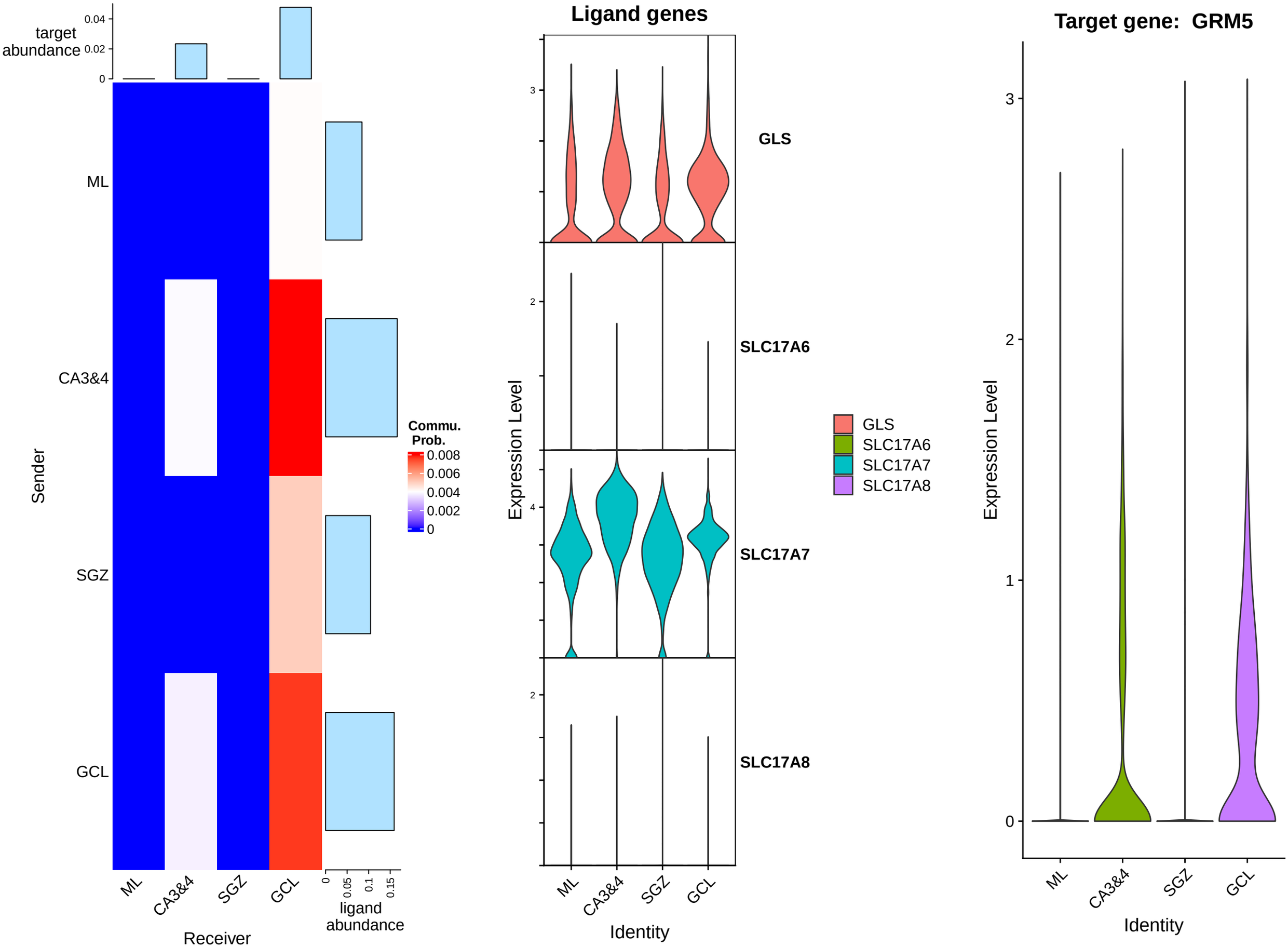

Ligand gene: NRXN3
Expression Level
0
1
2
3
ML
CA3&4
SGZ
GCL
Identity

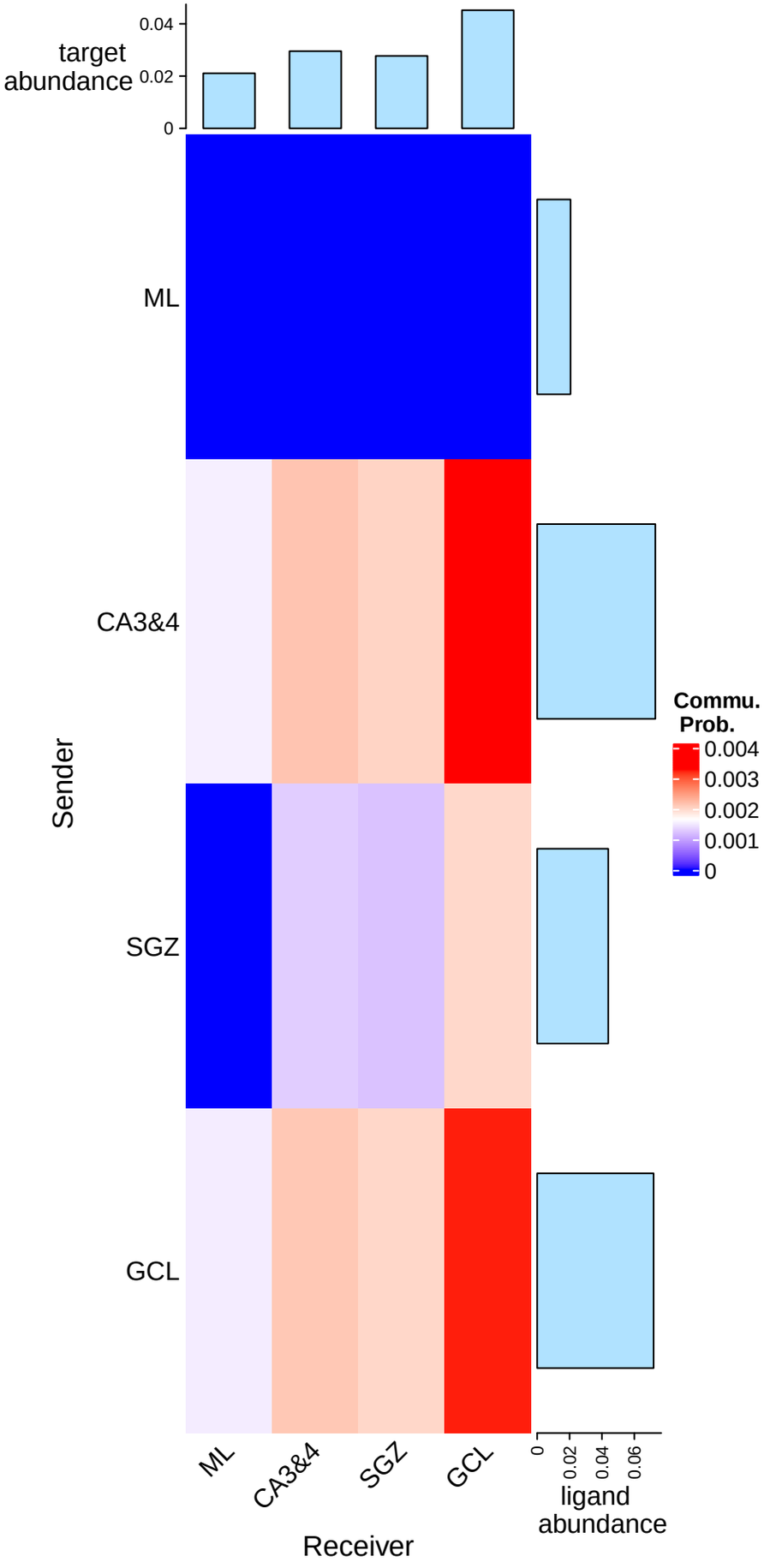

Target gene: NLGN2
Expression Level
0
1
2
3
ML
CA3&4
SGZ
GCL
Identity

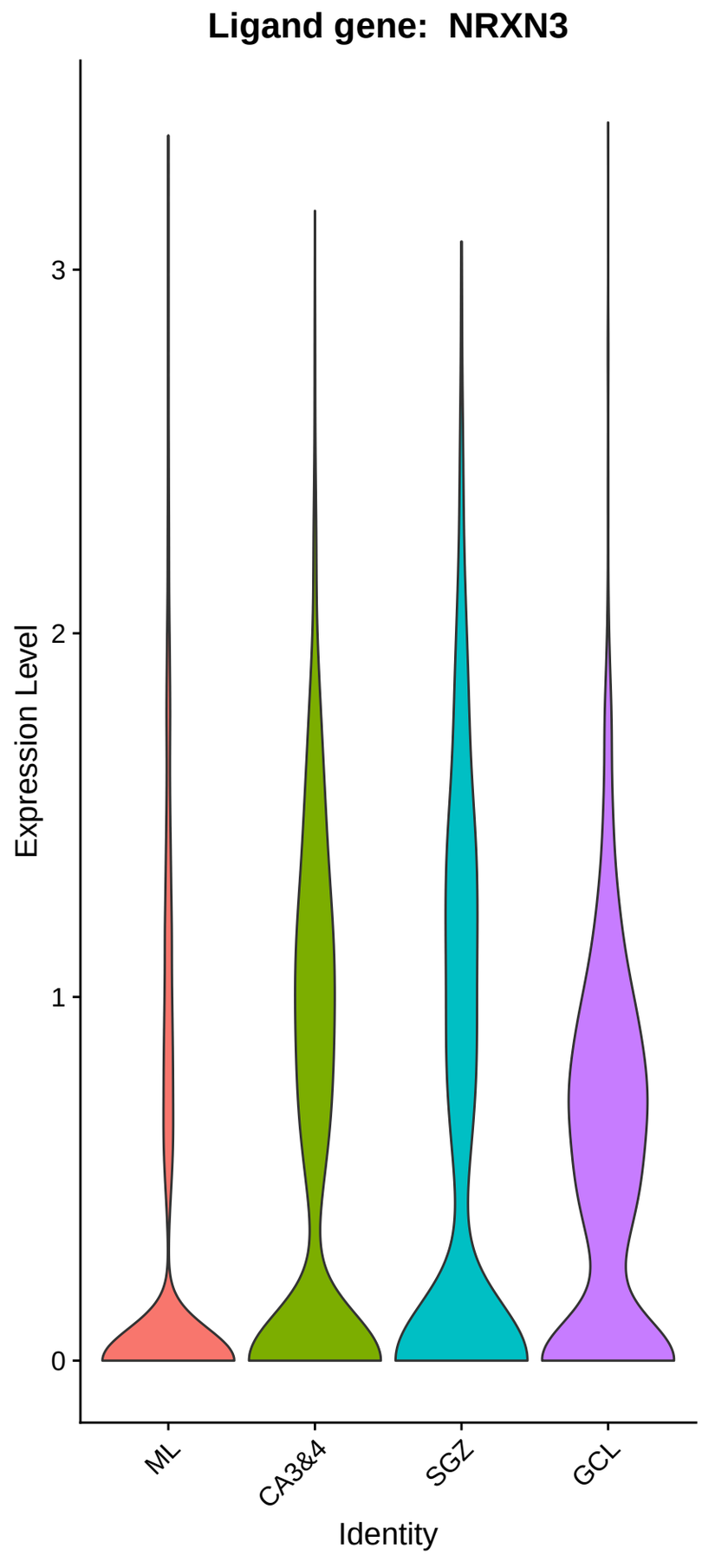

target abundance
0.03
0.02
0.01
0
ML
CA3&4
SGZ
GCL
Sender
Receiver
Commu. Prob.
0.006
0.004
0.002
0
0
0.05
0.1
0.15
ligand abundance


Ligand genes
GLS
SLC17A6
SLC17A7
SLC17A8
Expression Level
Identity
ML
CA3&4
SGZ
GCL
GLS
SLC17A6
SLC17A7
SLC17A8


Target gene: GRIA4
Expression Level
Identity
ML
CA3&4
SGZ
GCL


target abundance
0.04
0.02
0
ML
CA3&4
SGZ
GCL
Sender
Receiver
Commu. Prob.
0.008
0.006
0.004
0.002
0
0
0.05
0.1
0.15
ligand abundance
Ligand genes
GLS
SLC17A6
SLC17A7
SLC17A8
Expression Level
Identity
GLS
SLC17A6
SLC17A7
SLC17A8
Target gene: GRM5
Expression Level
Identity


target
abundance
0.04
0.02
0
ML
CA3&4
SGZ
GCL
Sender
Commu.
Prob.
0.004
0.003
0.002
0.001
0
ML
CA3&4
SGZ
GCL
Receiver
0
0.02
0.04
0.06
ligand
abundance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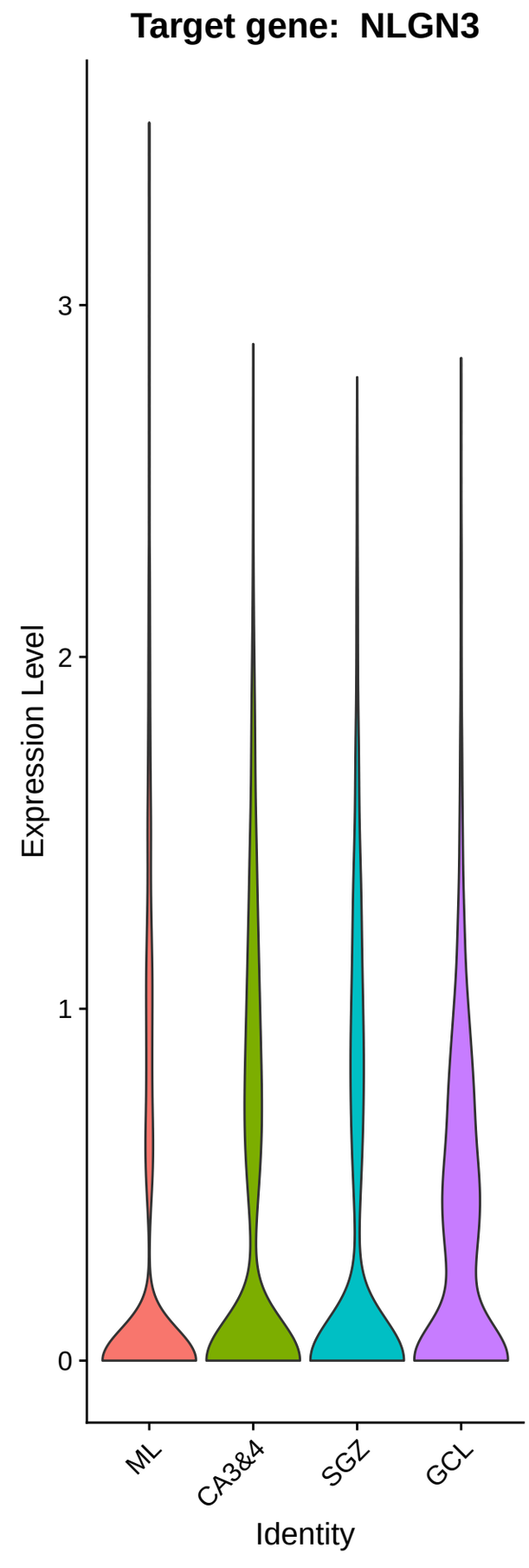
Expression Level
0
1
2
3
ML
CA3&4
SGZ
GCL
Identity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Expression Level
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2
3
ML
CA3&4
SGZ
GCL
Identity