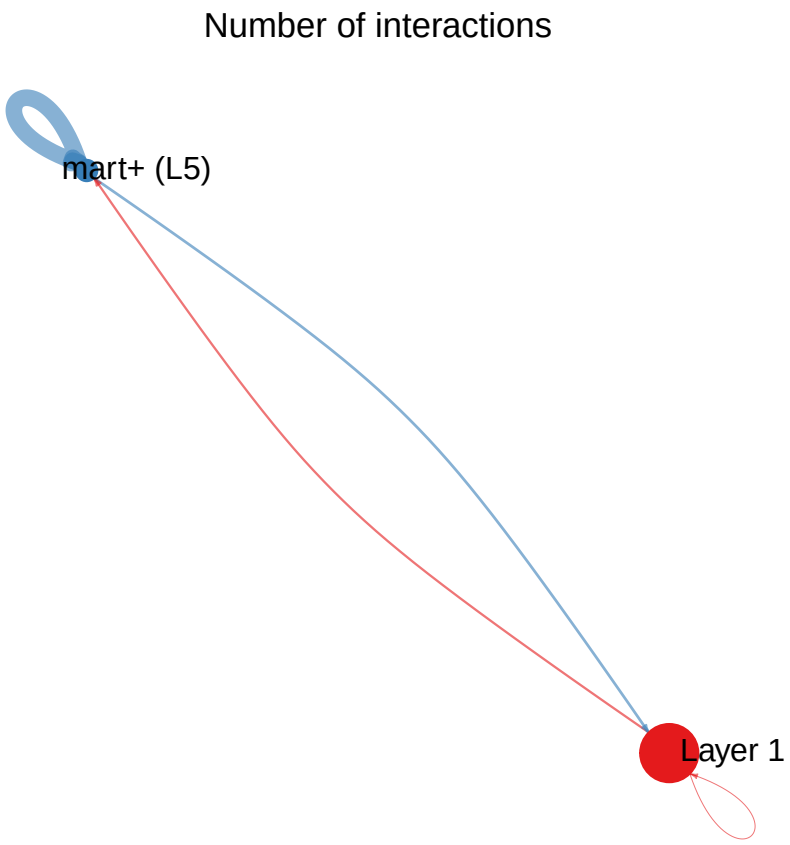
Viz showing Martinotti Cell Projection from L5 to L1 in NTC samples

This is the same analysis as in the file `cellchat_validate_NTC_Martinotti.qmd`. The ony different here is that besides including all L1 (spd07), only a **subset of L5 (spd05)** is included - only the Martinotti+ spots is included.

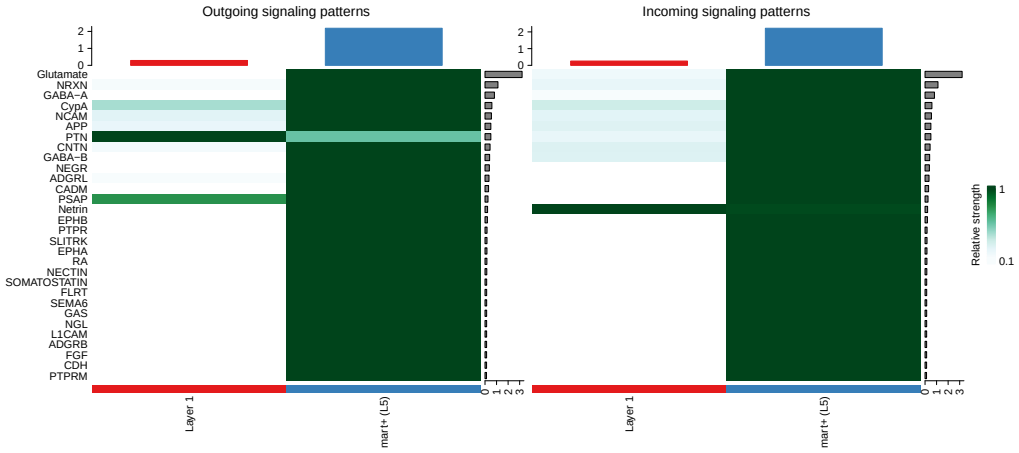
Results

Overall pattern

Here are some information about the overall communication pattern considering all the possible pathways and LR communication pairs. It is not that important. Can directly jump to the Section section.

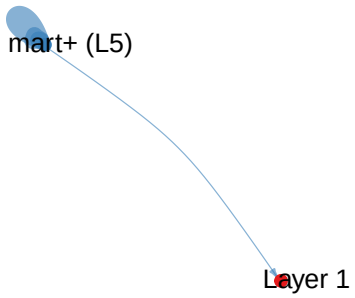

Number of interactions
mart+ (L5)
Layer 1

It looks like there are still a lot of `GABA-A` communication.



GABA pathways

If we focus on the communication that is in the GABA pathways, it looks like that there are communication pattern from Martinotti+ spots to Layer 1.



Here is another quick view for for the explaination. There's still a lot of GABA-A signaling mainly within the martinotti+spots and there's also sending from martinotti+ spots to layer 1.

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Do heatmap based on a single object
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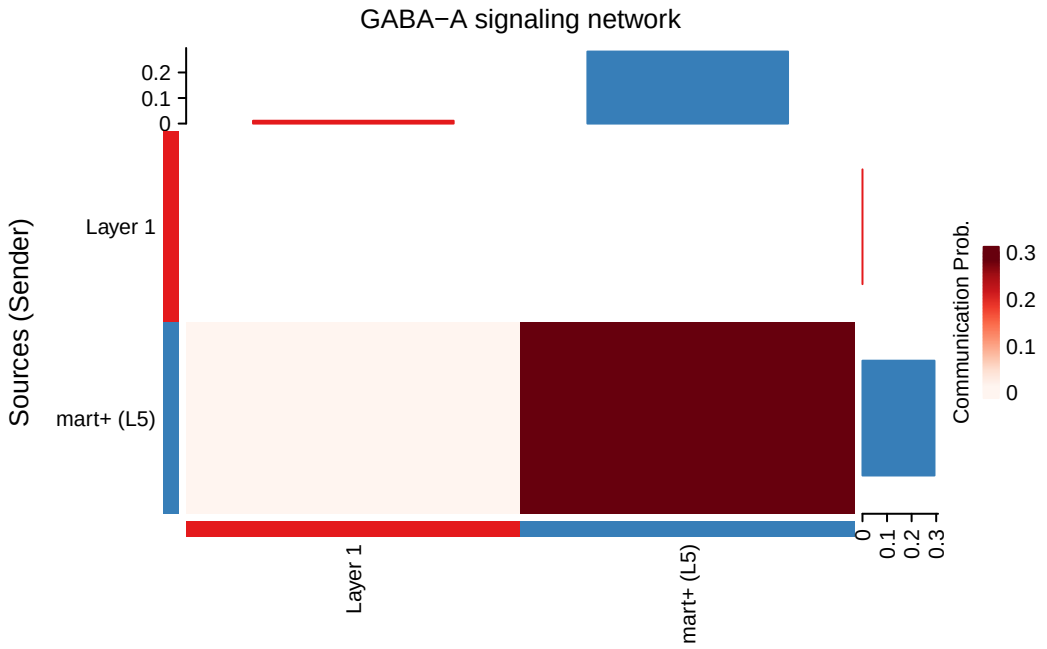
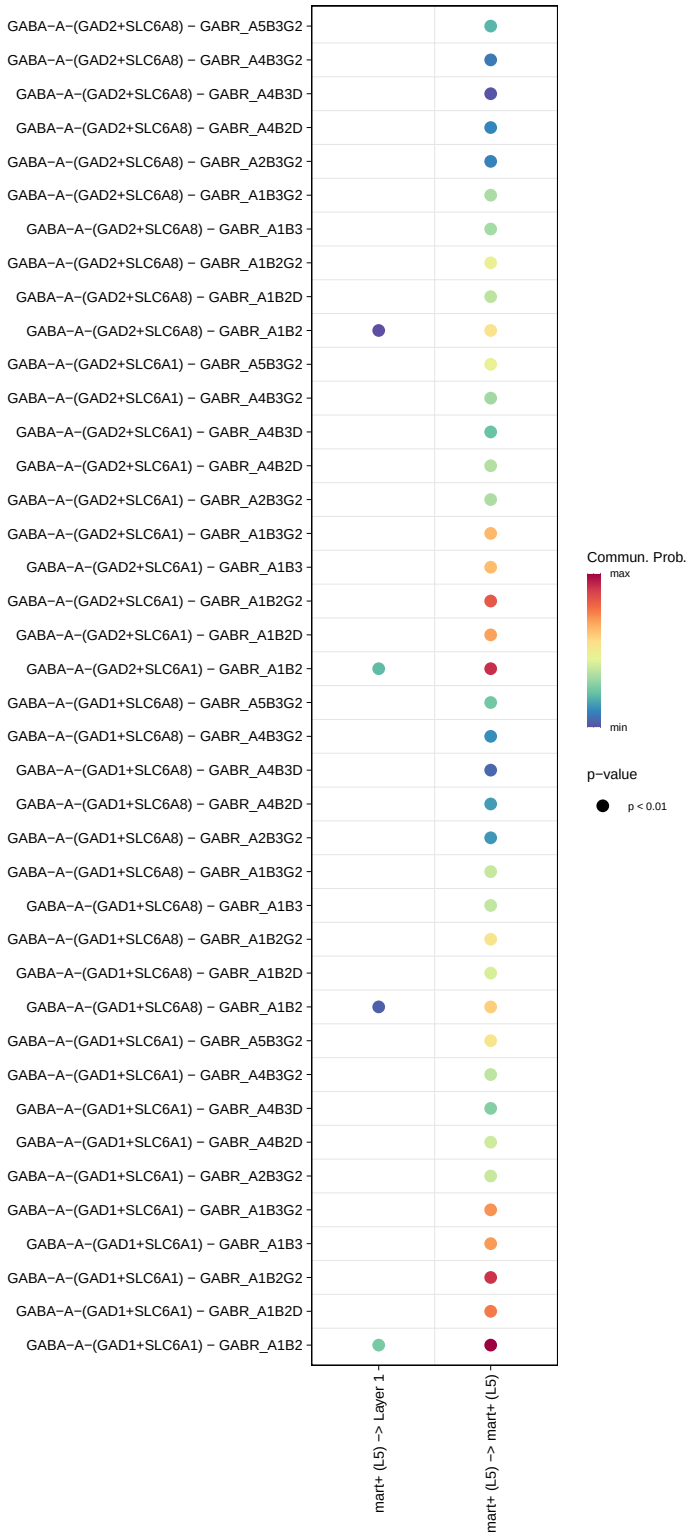


LR pairs in the `GABA_A` path

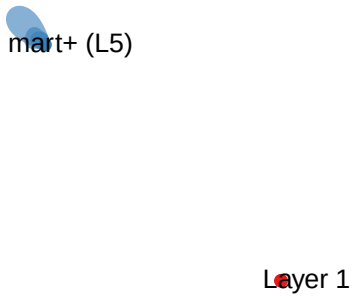
So the LR pairs `GABA-A-(GAD1/2+SLC6A1/8) - GABR_A1B2` and `GABA-A-(GAD2+SLC6A8) - GABR_A1B2` are idenitified to communicate from Martinotti+ spots to L1 spots.

`Comparing communications on a single object`

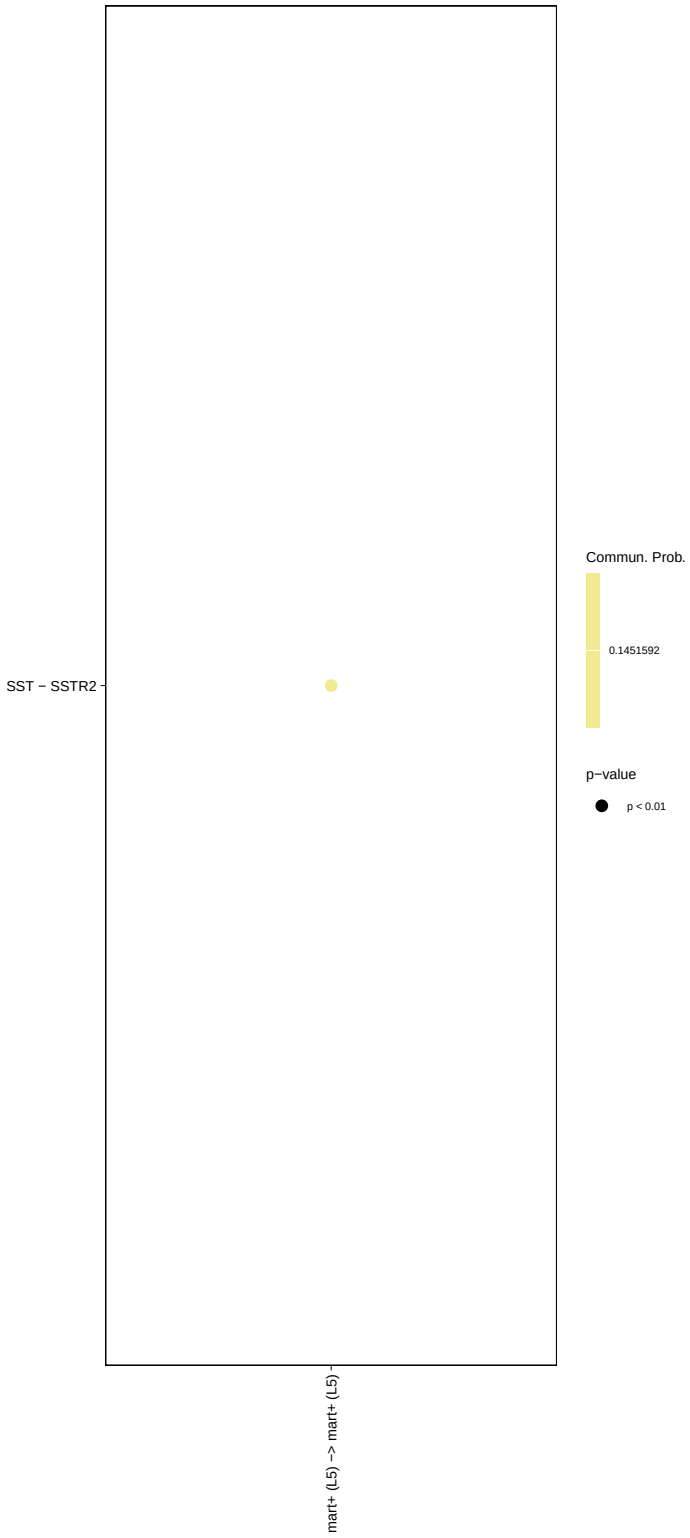

GABA−A−(GAD2+SLC6A8) − GABR_A5B3G2
GABA−A−(GAD2+SLC6A8) − GABR_A4B3G2
GABA−A−(GAD2+SLC6A8) − GABR_A4B3D
GABA−A−(GAD2+SLC6A8) − GABR_A4B2D
GABA−A−(GAD2+SLC6A8) − GABR_A2B3G2
GABA−A−(GAD2+SLC6A8) − GABR_A1B3G2
GABA−A−(GAD2+SLC6A8) − GABR_A1B3
GABA−A−(GAD2+SLC6A8) − GABR_A1B2G2
GABA−A−(GAD2+SLC6A8) − GABR_A1B2D
GABA−A−(GAD2+SLC6A8) − GABR_A1B2
GABA−A−(GAD2+SLC6A1) − GABR_A5B3G2
GABA−A−(GAD2+SLC6A1) − GABR_A4B3G2
GABA−A−(GAD2+SLC6A1) − GABR_A4B3D
GABA−A−(GAD2+SLC6A1) − GABR_A4B2D
GABA−A−(GAD2+SLC6A1) − GABR_A2B3G2
GABA−A−(GAD2+SLC6A1) − GABR_A1B3G2
GABA−A−(GAD2+SLC6A1) − GABR_A1B3
GABA−A−(GAD2+SLC6A1) − GABR_A1B2G2
GABA−A−(GAD2+SLC6A1) − GABR_A1B2D
GABA−A−(GAD2+SLC6A1) − GABR_A1B2
GABA−A−(GAD1+SLC6A8) − GABR_A5B3G2
GABA−A−(GAD1+SLC6A8) − GABR_A4B3G2
GABA−A−(GAD1+SLC6A8) − GABR_A4B3D
GABA−A−(GAD1+SLC6A8) − GABR_A4B2D
GABA−A−(GAD1+SLC6A8) − GABR_A2B3G2
GABA−A−(GAD1+SLC6A8) − GABR_A1B3G2
GABA−A−(GAD1+SLC6A8) − GABR_A1B3
GABA−A−(GAD1+SLC6A8) − GABR_A1B2G2
GABA−A−(GAD1+SLC6A8) − GABR_A1B2D
GABA−A−(GAD1+SLC6A8) − GABR_A1B2
GABA−A−(GAD1+SLC6A1) − GABR_A5B3G2
GABA−A−(GAD1+SLC6A1) − GABR_A4B3G2
GABA−A−(GAD1+SLC6A1) − GABR_A4B3D
GABA−A−(GAD1+SLC6A1) − GABR_A4B2D
GABA−A−(GAD1+SLC6A1) − GABR_A2B3G2
GABA−A−(GAD1+SLC6A1) − GABR_A1B3G2
GABA−A−(GAD1+SLC6A1) − GABR_A1B3
GABA−A−(GAD1+SLC6A1) − GABR_A1B2G2
GABA−A−(GAD1+SLC6A1) − GABR_A1B2D
GABA−A−(GAD1+SLC6A1) − GABR_A1B2
mart+ (L5) −> Layer 1
mart+ (L5) −> mart+ (L5)
Commun. Prob.
max
min
p−value
p < 0.01

SST pathways

There's no significant SST- realated LR pair are itentified from Martinotti+spots L5 to L1.




```
Comparing communications on a single object
```


SST − SSTR2
mart+ (L5) −> mart+ (L5)
Commun. Prob.
0.1451592
p−value
p < 0.01