**Analysis our data vs other cell types**

**Astrocytes**

Pvalue & Rank:

All the samples react with different possible interaction, some of them are shared but there isn’t a pattern. Even though, the top shared interactions are:

|  |
| --- |
| HGF\_CD44 |
| FGF1\_FGFR1 |
| FGF1\_TGFBR3 |
| FGFR2\_FGFR3 |
| FGF1\_FGFR3 |
| FGF2\_FGFR3 |
| TIMP1\_FGFR2 |
| CD44\_FGFR2 |
| PTN\_PTPRS |
| FGF2\_FGFR2 |
| TFRC\_TF |
| HLA-C\_FAM3C |
| PLXNB1\_SEMA4D |
| CD74\_COPA |
| Cholesterol\_byDHCR7\_RORA |

Pvalue & mean:

No interactions: U3021 & U3088 & U3281

U3031 & U3035

U3017 & U3051 & U3123 & U3169

More interactions from neoplastic-astrocyte side

Repeated interactions:

* BMPR1X\_BMPR2\_BMP7
* CADMX\_CADMX
* FGFRX\_FGFRX
* CD44\_FGFR2
* NOTCHX\_CNTNX
* TIMPX\_FGFRX

|  |  |  |
| --- | --- | --- |
| Sample | Astrocyte-neoplastic | Neoplastic-astrocyte |
| U3005 | TIMP1\_FGFR2 | CADM1\_CADM1 |
| U3008 | FGF1\_FGFR1 | BMPR1B\_BMPR2\_BMP7 |
| U3013 | --- | BMPR1A\_BMPR2\_BMP7 / FGFR2\_FGFR3 |
| U3016 | FN1\_integrin\_aVb1\_complex | CADM3\_CADM1 |
| U3017 | --- | CADM1\_CADM1 |
| U3020 | TIMP1\_FGFR2 | LAMC1\_integrin\_a6b1\_complex |
| U3021 | ---- | ---- |
| U3024 | LAMP1\_FAM3C | BMPR1B\_BMPR2\_BMP7 |
| U3027 | ---- | APP\_SORL1 / CD44\_FGFR2 |
| U3028 | ---- | CD44\_FGFR2 |
| U3031 | ---- | BMPR1A\_BMPR2\_BMP7 |
| U3033 | FGF1\_TGFBR3 | CD44\_FGFR2 |
| U3035 | --- | BMPR1A\_BMPR2\_BMP7 |
| U3039 | HLA-C\_FAM3C | CADM1\_CADM1 / CD44\_FGFR2 |
| U3047 | TIMP1\_FGFR2 | CADM3\_CADM1 / NOTCH1\_CNTN1 |
| U3051 | ---- | CADM1\_CADM1 |
| U3053 | NOTCH2\_CNTN1 | FGF1\_FGFR3 |
| U3054 | --- | BMPR1A\_BMPR2\_BMP7 / CD44\_FGFR2 |
| U3065 | ---- | BMPR1B\_BMPR2\_BMP7 / FGF2\_FGFR3 |
| U3071 | ---- | ACVR1\_BMPR2\_BMP7 |
| U3078 | CADM3\_CADM4 | BMPR1B\_BMPR2\_BMP7 |
| U3082 | ---- | CADM3\_CADM1 / BMPR1A\_BMPR2\_BMP7 |
| U3084 | TIMP1\_FGFR2 | CADM3\_CADM1 / CD44\_FGFR2 |
| U3086 | --- | CADM1\_CADM1 / LAMC1\_integrin\_a7b1\_complex |
| U3088 | --- | --- |
| U3093 | FGF1\_TGFBR3 | ---- |
| U3101 | TIMP1\_FGFR2 | CADM1\_CADM1 / CD44\_FGFR2 |
| U3110 | FGF1\_FGFR1 | FGF2\_FGFR3 |
| U3117 | LAMP1\_FAM3C | BMPR1B\_BMPR2\_BMP7 |
| U3118 | ---- | NOTCH1\_CNTN1 / BMPR1B\_BMPR2\_BMP7 |
| U3123 | ---- | CADM1\_CADM1 |
| U3137 | CADM3\_CADM4 | FGF2\_FGFR3 |
| U3167 | FGF1\_TGFBR3 | --- |
| U3169 | ---- | CADM1\_CADM1 |
| U3179 | ---- | FGF2\_FGFR2 |
| U3180 | LAMP1\_FAM3C | ---- |
| U3182 | HLA-C\_FAM3C | CD44\_FGFR2 |
| U3202 | NOTCH2\_CNTN1 | FGF2\_FGFR3 |
| U3213 | ---- | MDK\_SORL1 / FGF2\_FGFR3 |
| U3220 | NOTCH2\_CNTN1 | ---- |
| U3226 | ---- | FGF1\_FGFR3 |
| U3230 | TIMP1\_FGFR2 | CD44\_FGFR2 |
| U3233 | HLA-C\_FAM3C | CD44\_FGFR2 |
| U3257 | TIMP1\_FGFR2 | ---- |
| U3275 | ---- | CADM1\_CADM1 / BMPR1B\_BMPR2\_BMP7 |
| U3279 | ---- | LAMC1\_integrin\_a7b1\_complex / BMPR1B\_BMPR2\_BMP7 |
| U3281 | ---- | ---- |
| U3289 | ---- | CADM1\_CADM1 / FGF2\_FGFR2 |
| U3291 | ---- | CADM3\_CADM1 / CD44\_FGFR3 |
| U3299 | ---- | NOTCH1\_CNTN1 |

**Dendritic cells**

All samples react in the same way.

Pvalue & rank:

|  |
| --- |
| SPP1\_CD44 |
| LGALS9\_CD44 |
| TYROBP\_CD44 |
| LGALS9\_P4HB |
| LGALS9\_CD47 |
| LGALS9\_HAVCR2 |
| CD74\_MIF |
| TNFRSF1B\_GRN |
| CD74\_APP |
| NR3C1\_CXCL8 |
| ANXA1\_FPR1 |
| SELL\_SELPLG |
| AXL\_GAS6 |
| BSG\_PPIA |
| LILRA4\_BST2 |
| LAIR1\_LILRB4 |

Pvalue & Mean:

|  |  |  |
| --- | --- | --- |
| dendritic-neoplastic | CD74\_APP / CD74\_MIF | |
| neoplastic-dendritic | | ----- |

**Endothelial cells**

No significant interactions found.

**Natural killer cells**

All samples react in the same way.

Pvalue & rank:

|  |
| --- |
| SPP1\_CD44 |
| TYROBP\_CD44 |
| CD94:NKG2A\_HLA-E |
| CD74\_MIF |
| HLA-E\_KLRC1 |
| BSG\_PPIA |
| CLEC2B\_KLRF1 |

Pvalue & Mean:

|  |  |
| --- | --- |
| killer-neoplastic | TYROBP\_CD44 / HLA-E\_KLRC1 |
| neoplastic-killer | CD94:NKG2A\_HLA-E |

**Mast cells**

No significant interactions found.

**Monocytes**

Pvalue & Rank:

5 groups:

(0.25:2) U3005 & U3013 & U3016 & U3020 & U3033 & U3065 & U3078 & U3179 & U3226 & U3257 & U3291 & U3299

U3005 doesn’t have PLXNB2\_SEMA4D

(0.25:1) U3008 & U3169

(0.25:0) U3017 & U3021 & U3024 & U3027 & U3028 & U3039 & U3047 & U3051 & U3054& U3071 & U3082 & U3084 & U3086 & U3088 & U3093 & U3101 & U3110 & U3117 & U3118 & U3123 & U3137 & U3167 & U3180 & U3182 & U3202 & U3220 & U3230 & U3233 & U3275 & U3279 & U3281 & U3289

(0.25:3) U3053 & U3213

(0.25:4) U3035

VDR\_HBEGF and TGFB1\_VDR are unique for samples U3031 & U3035 (with 0.25 rank)

Top proteins common shared:

|  |
| --- |
| LeukotrieneB4\_byLTA4H\_LTB4R |
| PLXNB2\_SEMA4D |
| CLU\_TREM2\_receptor |
| APOE\_TREM2\_receptor |
| APP\_TREM2\_receptor |
| ANXA1\_FPR3 |
| ANXA1\_FPR1 |
| APP\_FPR2 |
| ANXA1\_FPR2 |
| IL1\_receptor\_inhibitor\_IL1RN |

Pvalue & mean:

A total of 8 groups (5 big ones). All the interactions from neoplastic-monocytes are ICAM1\_integrin\_aXb2\_complex or nothing. ANXAX-FPRX is present in almost all groups in monocytes-neoplastic.

|  |  |  |
| --- | --- | --- |
|  | Monocytes-neoplastic | Neoplastic-monocytes |
| 0.25:0 U3017 | ANXA1\_FPR1 | --- |
| 0.25:0 U3024 | RNASET2\_TLR8 / FPR3\_HEBP1 / ANXA1\_FPR1 | ICAM1\_integrin\_aXb2\_complex |
| 0.25:0 U3118 | MIF\_TNFRSF14 / ANXA1\_FPR2 | --- |
| 0.25:1 U3008 | RNASET2\_TLR8 / FPR3\_HEBP1 / ANXA1\_FPR1 | ICAM1\_integrin\_aMb2\_complex |
| 0.25:2 U3005 | PTPRC\_MRC1 / PLXNB2\_SEMA4D / ANXA1\_FPR2 / ANXA1\_FPR3 | ---- |
| 0.25:2 U3013 | DHEAsulfate\_bySULT2B\_PPARD / PTGER4\_ProstaglandinE2\_byPTGES2 / ANXA1\_FPR1 | ---- |
| 0.25:3 U3053 | APP\_FPR2 | ICAM1\_integrin\_aXb2\_complex |
| 0.25:4 U3035 | RNASET2\_TLR8 / FPR3\_HEBP1 / PTPRC\_SEMA4D / ANXA1\_FPR1 | ICAM1\_integrin\_aXb2\_complex |

0.25:0 U3017 / U3021 / U3027 / U3028 / U3039 / U3047 / U3051 / U3071 / U3082 / U3084 / U3086 / U3088 / U3093 / U3101 / U3110 / U3117 / U3123 / U3137 / U3167 / U3180 / U3182 / U3202 / U3220 / U3230 / U3275 / U3279 / U3281 / U3289

0.25:0 U3024 / U3054 / U3233 /

0.25:0 U3118

0.25:1 U3008 / U3169

0.25:2 U3005 / U3065

0.25:2 U3013 / U3016 / U3020 / U3031 / U3033 / U3078 / U3179 / U3226 / U3257 / U3291 / U3299

0.25:3 U3053 / U3213 /

0.25:4 U3035

**Mural cells**

Pvalue & Rank:

Most of them follow the same pattern. Even though, there is possible 2 subgroups, 1 has extra CD74\_MIF and the other not. Also, there is two samples, U3054 and U3220 that has COL5A2\_integrin\_a1b1\_complex as extra (and also CD74\_MIF)

Common shared genes:

|  |
| --- |
| COL1A1\_integrin\_a1b1\_complex |
| COL3A1\_integrin\_a1b1\_complex |
| COL4A1\_integrin\_a1b1\_complex |
| COL1A2\_integrin\_a1b1\_complex |
| COL4A2\_integrin\_a1b1\_complex |
| COL6A1\_integrin\_a1b1\_complex |
| COL6A2\_integrin\_a1b1\_complex |
| COL18A1\_integrin\_a1b1\_complex |
| CD74\_APP |
| BSG\_PPIA |

Subgroup 1 (doesn’t has CD74\_MIF): U3008, U3016, U3017, U3020, U3027, U3028, U3031, U3033, U3047, U3051, U3053, U3065, U3071, U3078, U3084, U3086, U3093, U3110, U3117, U3118, U3123, U3137, U3167, U3169, U3179, U3180, U3182, U3202, U3213, U3226, U3230, U3233, U3257, U3275, U3279, U3289, U3299

Subgroup 2 (has CD74\_MIF): U3005, U3013, U3021, U3024, U3035, U3039, U3082, U3088, U3101, U3281, U3291

Subgroup 2.2 (has COL5A2\_integrin\_a1b1\_complex): U3054, U3220

Pvalue & Mean:

A total of 5 groups (with 3 outliers as group):

|  |  |  |
| --- | --- | --- |
|  | Mural\_cells-neoplastic | Neoplastic-mural\_cells |
| Subgroup 1 | COL1A2\_integrin\_a1b1\_complex | --- |
| Subgroup 2 | COL4A2\_integrin\_a1b1\_complex / COL1A2\_integrin\_a1b1\_complex | BSG\_PPIA |
| Subgroup 2.2 U3054 | COL4A1\_integrin\_a1b1\_complex | --- |
| Subgroup 2.2 U3220 | COL5A2\_integrin\_a1b1\_complex | --- |
| U3031 | COL6A1\_integrin\_a1b1\_complex / COL4A2\_integrin\_a1b1\_complex | BSG\_PPIA |

**Neurons**

Pvalue & rank:

U3078 has no predicted interactions

BSG\_PPIA always present (except U3078 without any)

2 patterns with 5 outliers:

* Only BSG\_PPIA (37): U3008, U3016, U3017, U3020, U3021, U3024, U3027, U3031, U3033, U3035, U3039, U3047, U3051, U3053, U3054, U3071, U3082, U3084, U3086, U3088, U3110, U3117, U3118, U3123, U3137, U3167, U3169, U3179, U3180, U3202, U3220, U3230, U3233, U3257, U3279, U3281, U3289
* BSG\_PPIA and CADM1\_CADM1: U3005, U3013, U3028, U3093, U3182, U3213, U3226
* Outliers: U3065, U3101, U3275, U3291, U3299

Pvalue&mean: non expressed (mean) but big pvalue in neoplastic-neurons (BSG\_PPIA)

**Oligodendrocytes**

Pvalue & Rank:

2 groups:

Group 1 (without TFRC\_TF): U3005, U3008, U3013, U3016, U3017, U3020, U3021, U3024, U3027, U3028, U3031, U3035, U3039, U3047, U3053, U3054, U3065, U3071, U3078, U3082, U3088, U3093, U3101, U3110, U3118, U3123, U3137, U3167, U3169, U3179, U3180, U3182, U3202, U3213, U220, U3226, U3230, U3233, U3257, U3275, U32L79, U3289, U3291

Group 2 (with TFRC\_TF): U3033, U3084, U3086, U3117, U3281, U3299

Top shared genes:

|  |
| --- |
| SPP1\_CD44 |
| EGFR\_COPA |
| CD74\_COPA |
| EGFR\_HBEGF |
| CD74\_APP |
| TNFRSF21\_APP |
| NRP2\_VEGFA |
| NRP2\_SEMA3C |
| PTN\_PTPRS |
| AGRN\_PTPRS |

Pvalue & Mean:

3 groups (group 1 divided into 2):

|  |  |  |
| --- | --- | --- |
|  | oligo\_cells-neoplastic | Neoplastic-oligo\_cells |
| Group 1 | ---- | JAM3\_JAM3 |
| Group 1.1 | ---- | --- |
| Group 2 | COL18A1\_integrin\_a2b1\_complex | ---- |

Group 1: U3005, U3008, U3013, U3017, U3020, U3021, U3024, U3027, U3028, U3031, U3047, U3054, U3078, U3088, U3101, U3110, U3118, U3137, U3182, U3220, U3226, U3230, U3275, U3279, U3291

Group 1.1: U3016, U3035, U3039, U3051, U3053, U3065, U3071, U3082, U3093, U3123, U3167, U3169, U3179, U3180, U3202, U3213, U3233, U3257, U3289

Group 2: U3033, U3084, U3086, U3117, U3281, U3299

**Radial glial cells**

No significant interactions found.