

**Table S1.** CCC inference results based on expression thresholding (Thresholding), expression product (Product), cell expression (Cell), and CellDialog.

Function	Cell type	“outgoing” LRIs	“incoming” LRIs	Evidence
Thresholding	CAFs	6	9	Refs. (1; 2)
	Macrophages	4	5	Refs. (3)
	Endothelial cells	7	0	Refs. (4; 5)
	NK cells	2	1	
	B cells	0	0	
	T cells	0	0	
Product	CAFs	B2M_HLA-F, APP_RPSA, HLA-A_APLP2	VIM_LRP1, SERPINE2_LRP1, HLA-A_LRP1	Refs. (1; 2; 6)
	Macrophages	B2M_HLA-F, HLA-A_APLP2, C1QB_C1QBP	CALM2_ITGB2, GRN_ITGB2, LGALS1_PTPRC	Refs. (3; 6)
	Endothelial cells	APP_RPSA, B2M_HLA-F, HLA-A_APLP2	B2M_HLA-F, HLA-A_APLP2, CALM2_AQP1	Refs. (4; 5; 6)
	NK cells	B2M_HLA-F, HLA-A_APLP2, PSAP_SORT1	B2M_CD247, LGALS1_PTPRC, B2M_HLA-F	
	T cells	B2M_HLA-F, HLA-A_APLP2, CALM2_ITGA3	LGALS1_PTPRC, B2M_IL2RG, B2M_HLA-F	
	B cells	B2M_HLA-F, HLA-A_APLP2, PSAP_SORT1	LGALS1_PTPRC, HMGB1_CXCR4, CALM2_SELL	
Cell	CAFs	PSAP_SORT1, APP_RPSA, THBS2_CD47	VIM_LRP1, PSAP_LRP1, HSP90B1_LRP1	Refs. (1; 2)
	Macrophages	PSAP_SORT1, HLA-A_APLP2, GRN_SORT1	LGALS1_PTPRC, CALM2_ITGB2, HSP90B1_ITGB2	Refs. (3; 6)
	Endothelial cells	APP_RPSA, APP_ERBB3, PSAP_SORT1	HLA-A_APLP2, B2M_HLA-F, GRN_TNFRSF1A	Refs. (4; 5; 6)
	NK cells	HLA-A_APLP2, B2M_HLA-F, PSAP_SORT1	LGALS1_PTPRC, B2M_CD247, B2M_HLA-F	
	T cells	HLA-A_APLP2, B2M_HLA-F, PRND_RPSA	LGALS1_PTPRC, B2M_CD3G, HLA-A_CD3G	
	B cells	HLA-A_APLP2, B2M_HLA-F, HLA-C_LRP1	LGALS1_PTPRC, HMGB1_CXCR4, B2M_HLA-F	
CellDialog	CAFs	B2M_HLA-F, APP_RPSA, HLA-A_APLP2	VIM_LRP1, SERPINE2_LRP1, PSAP_LRP1	Refs. (1; 6; 7; 8)
	Macrophages	B2M_HLA-F, HLA-A_APLP2, PSAP_SORT1	CALM2_ITGB2, LGALS1_PTPRC, GRN_ITGB2	Refs. (3; 6; 9)
	Endothelial cells	APP_RPSA, B2M_HLA-F, APP_ERBB3	B2M_HLA-F, HLA-A_APLP2, GRN_TNFRSF1A	Refs. (4; 6; 10)
	NK cells	B2M_HLA-F, HLA-A_APLP2, PSAP_SORT1	LGALS1_PTPRC, B2M_CD247, B2M_HLA-F	
	T cells	B2M_HLA-F, HLA-A_APLP2, HLA-C_LRP1	LGALS1_PTPRC, B2M_IL2RG, B2M_HLA-F	
	B cells	B2M_HLA-F, HLA-A_APLP2, HLA-C_LRP1	LGALS1_PTPRC, HMGB1_CXCR4, CALM2_SELL	

Note: The expression thresholding method can only characterize whether two cell types are communicating or non-communicating and fails to compute their communication score due to its nature. Thus, we counted the number of LRIs that mediate CCCs for it.

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