



Article

# Associations of SEMA7A, SEMA4D, ADAMTS10, and ADAM8 with KRAS, NRAS, BRAF, PIK3CA, and AKT Gene Mutations, Microsatellite Instability Status, and Cytokine Expression in Colorectal Cancer Tissue

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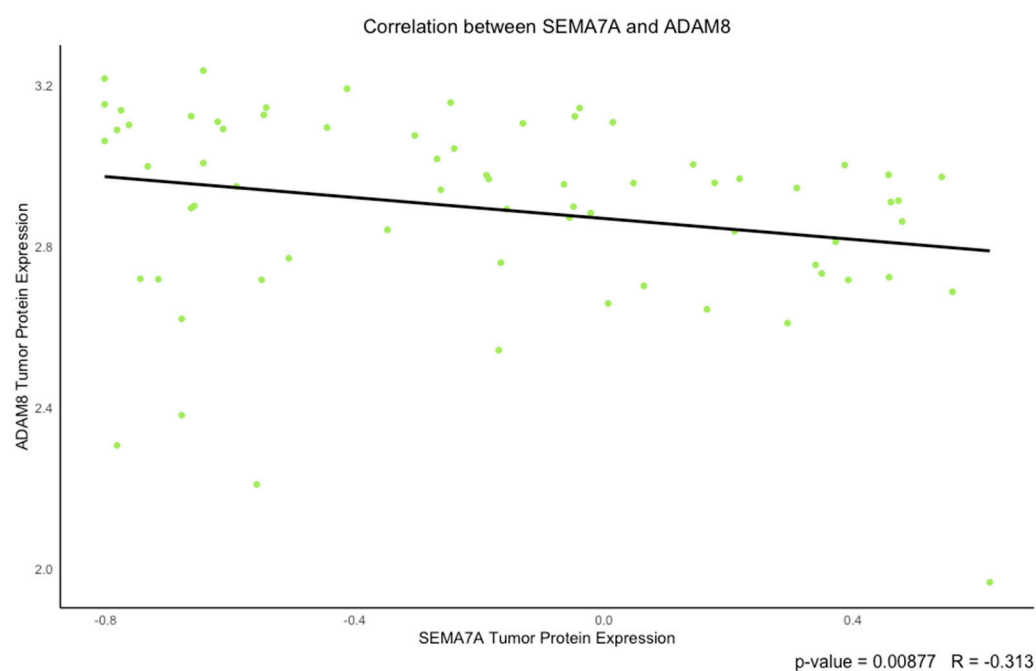
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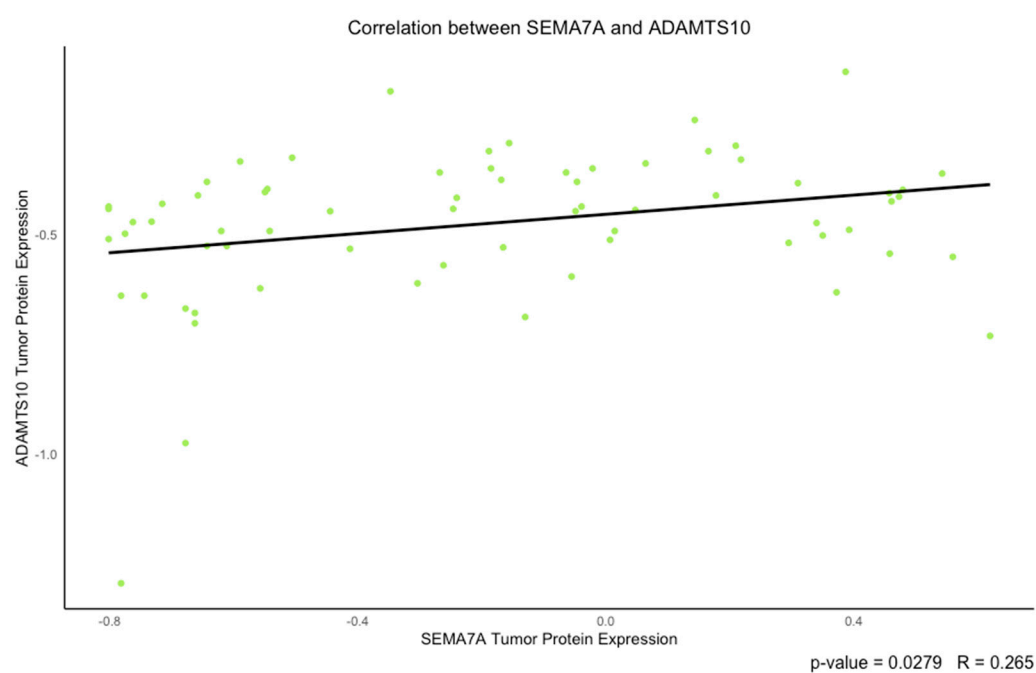


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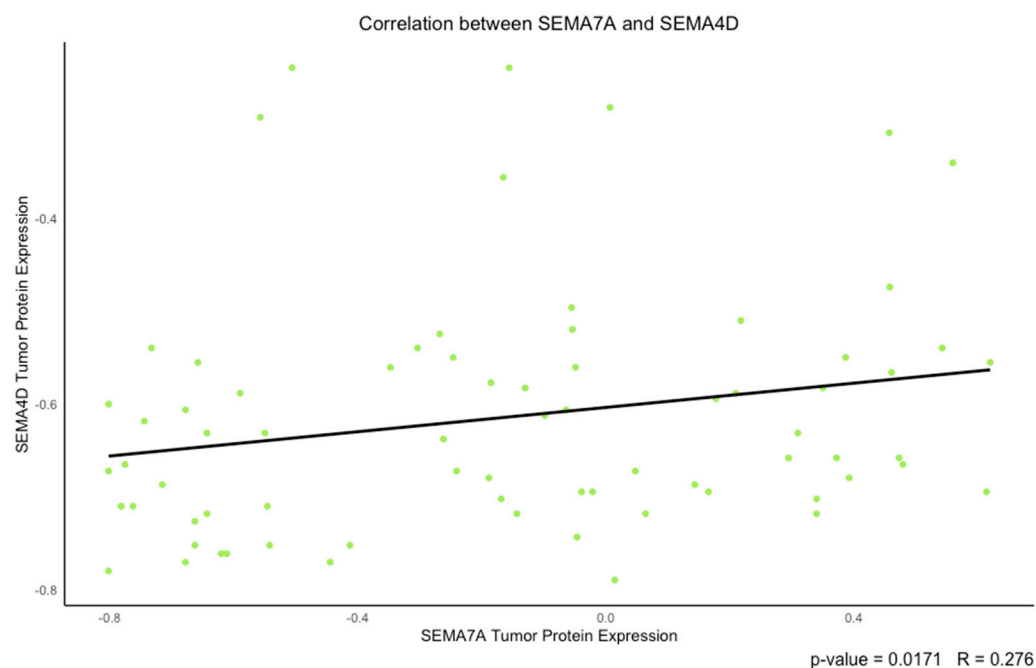
## Supplementary Material



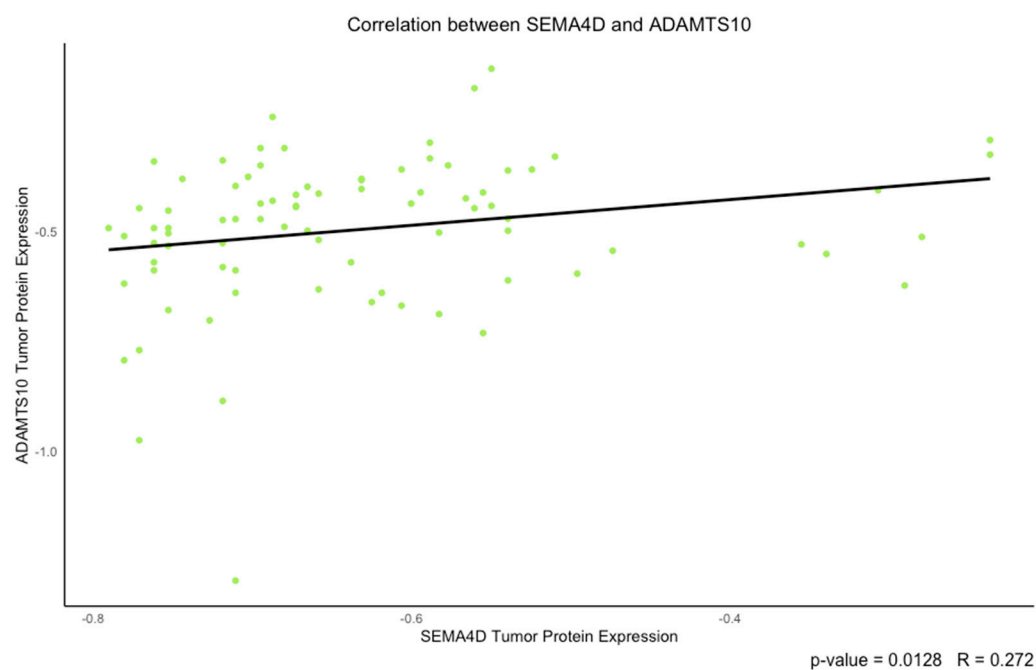
**Figure S1.** SEMA7A and ADAM8 correlation. Spearman's rank correlation.



**Figure S2.** SEMA7A and ADAMTS10 correlation. Spearman's rank correlation.



**Figure S3.** SEMA7A and SEMA4D correlation. Spearman's rank correlation.

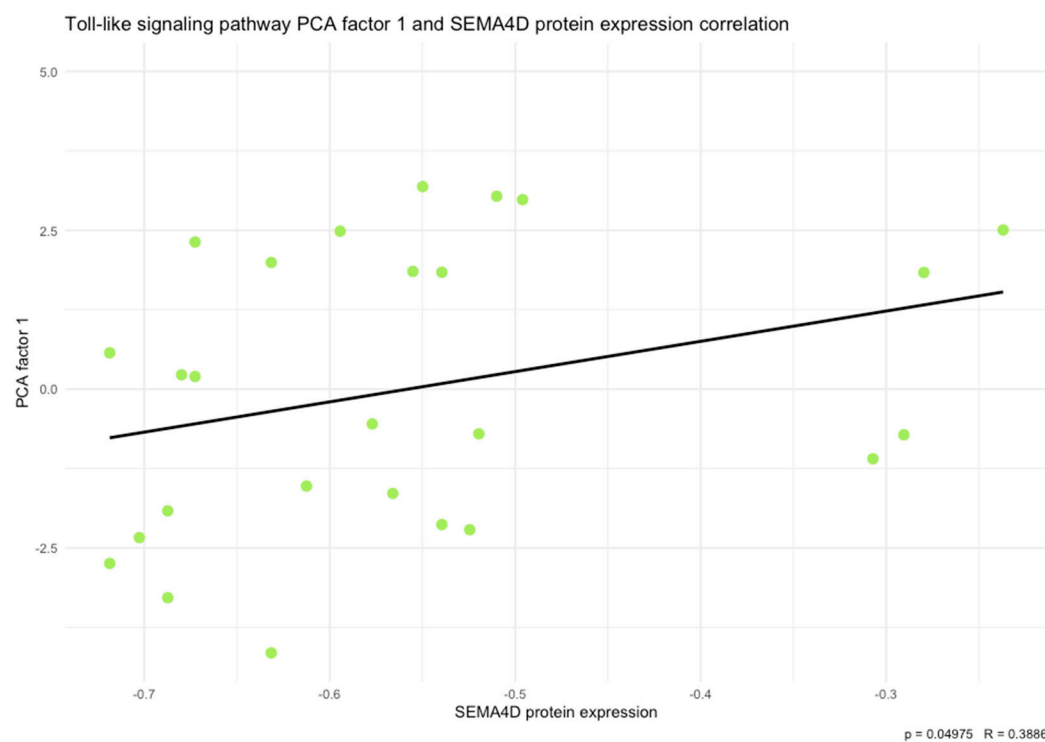


**Figure S4.** SEMA4D and ADAMTS10 correlation. Spearman's rank correlation.

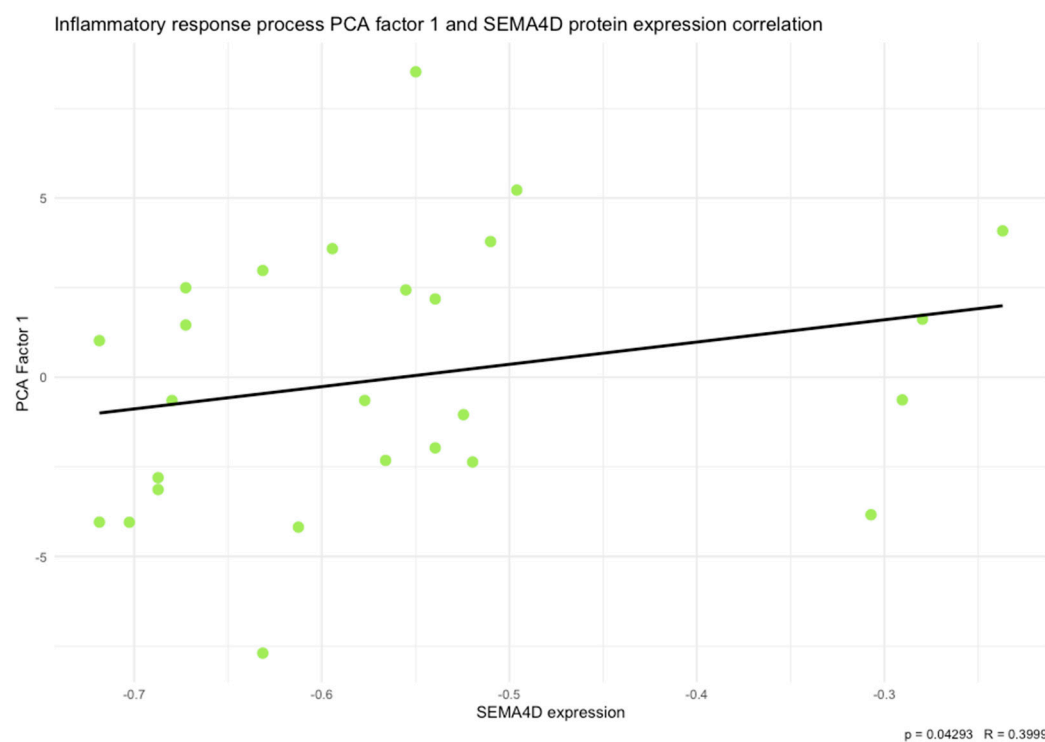
**Table S1.** Loadings of 3 factors (PCA Factors) after varimax rotation. Coordinates for the variables for molecular processes associated with SEMA4D protein expression in PCA.

Variable	Factor 1	Factor 2	Factor 3
Toll-like signaling pathway			
IL-8	0.8654129	0.12082868	−0.27832677
TNF-a	0.7646254	−0.57456393	0.04243603
IL-6	0.5520321	−0.38637508	−0.08314433
IP-10	0.7412093	0.24245448	0.34048522
RANTES	0.8876157	0.24209875	0.30374570
IL-1b	0.5088703	0.03359059	−0.78865237
MIP-1b	0.7329184	0.21100264	0.10733257
MIG	0.7464454	0.50145339	−0.08627164
IFN-a2	0.7510489	−0.52273266	0.15896540
Inflammatory Response			
IL-9	0.908600937	−0.32890339	−0.05068055
CTACK	0.894026864	0.10838820	−0.35198564
Eotaxin	0.819986873	0.08900517	0.03945236
MCP1	0.733748228	−0.49996173	0.03181336
IFN-a2	0.901154942	0.22190152	−0.23097914
IL-1Ra	0.488805956	0.15149237	0.34305817
IL-2Ra	0.853938809	0.07262477	0.05459024
IFN-g	0.447744313	0.48743094	0.38113586
IL-15	0.718845504	0.42286881	−0.29808614
IL-1a	0.634089609	0.53494935	0.18249841
IL-6	0.526102401	−0.20455367	−0.24986346
IL-17	0.583594480	0.11928565	0.08824774
IL-4	0.861614182	0.19077054	−0.20109329
MCP3	0.821075885	0.27098042	−0.33391342
MIP-1a	0.588915633	−0.71512131	−0.17401599
IL-18	0.800331600	−0.30413510	−0.02818448
MIF	0.006016992	−0.60887398	−0.01495696
TNF-a	0.904220312	0.24968806	−0.18887330
RANTES	0.768333158	−0.53175078	0.10603131
MCSF	0.669870971	0.27323380	0.53931679
MIG	0.551769594	−0.46071326	0.47585030
IL-1b	0.438269254	0.28125183	0.69969458
IL-5	0.406832362	0.71071423	−0.10909693
IL-10	0.791540601	0.26970252	−0.33201866
IL-8	0.762483782	−0.17913175	0.39990466
IL-13	0.286289606	−0.27090886	−0.55120846
IP-10	0.678824345	−0.39904962	0.14902050
MIP-1b	0.587888518	−0.45790762	0.16507643
Leukocyte Activation			
IL-4	0.8621145	−0.21063257	−0.01619217
IL-15	0.7528651	−0.39217814	−0.26374188
IFN-g	0.3869067	−0.52466834	−0.01792524
SCF	0.7029633	0.36661631	−0.25052082
IL-2Ra	0.8347054	−0.24723877	0.21956046
IL-8	0.6836284	−0.07278409	0.56909430

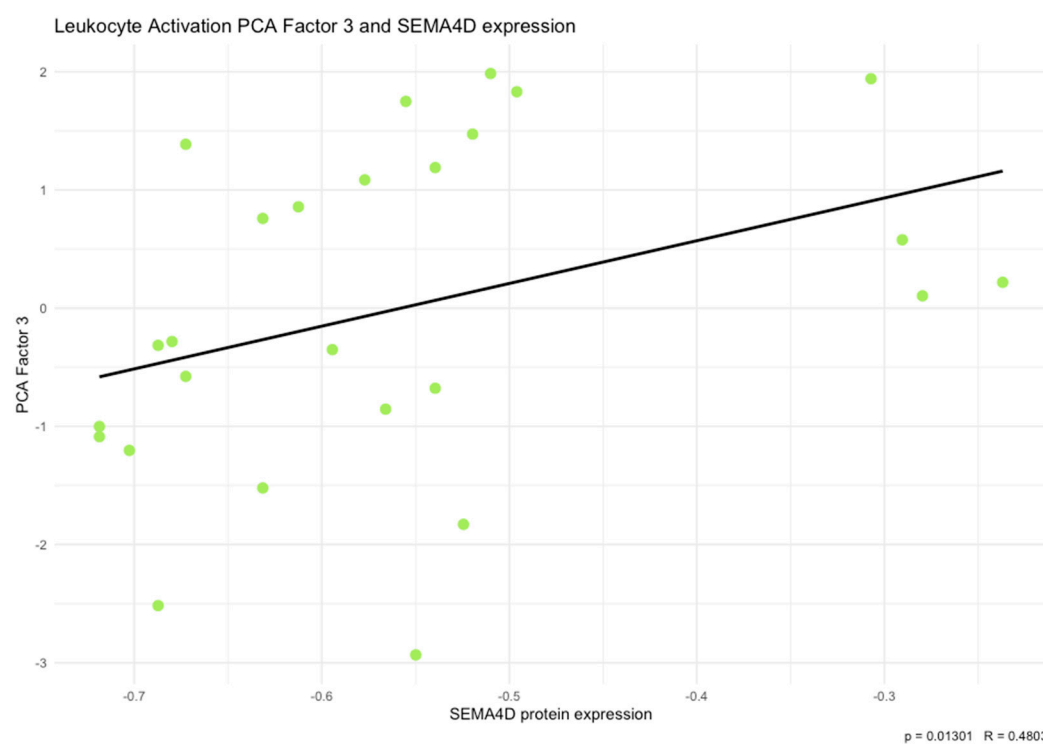
Variable	Factor 1	Factor 2	Factor 3
MCSF	0.5556702	−0.51197340	0.42794971
IL-13	0.4037088	0.61653253	−0.42153697
IL-18	0.8148456	0.22314262	0.28010760
MIP-1a	0.5918515	0.68031527	0.29531769
RANTES	0.7047315	0.30510383	0.54001070
IL-10	0.8513180	−0.04877440	−0.35578514
GM-CSF	0.7018462	−0.09616087	−0.23105580
IL-9	0.8808144	0.21898956	0.28637747
IL-7	0.6601777	0.37779854	−0.39166412
IFN- $\alpha$ 2	0.9193341	−0.21530767	−0.08709482
IL-2	0.7414459	−0.39286735	−0.41610803
IL-6	0.6044558	0.37808422	−0.09276581
TNF- $\alpha$	0.9261431	−0.17086013	−0.12085306



**Figure S5.** Correlation between SEMA4D protein expression and Toll-like signaling pathway PCA Factor 1. Spearman's rank correlation.



**Figure S6.** Correlation between SEMA4D protein expression and Inflammatory Response PCA Factor 1. Spearman's rank correlation.

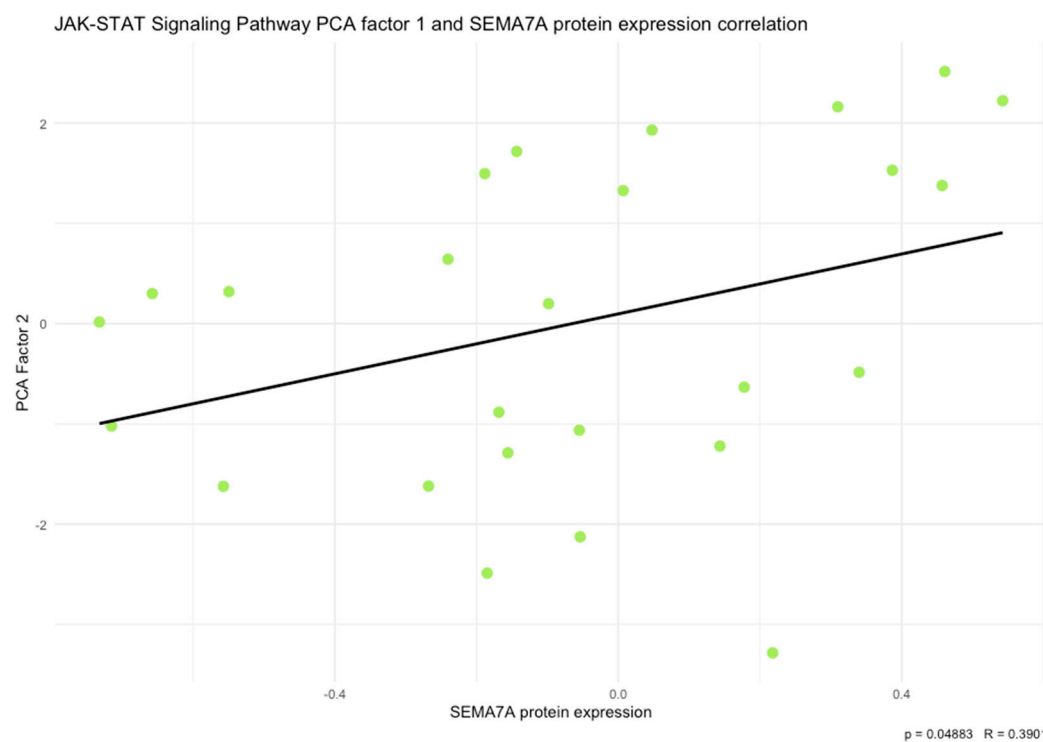


**Figure S7.** Correlation between SEMA4D protein expression and Leukocyte Activation PCA Factor 1. Spearman's rank correlation.

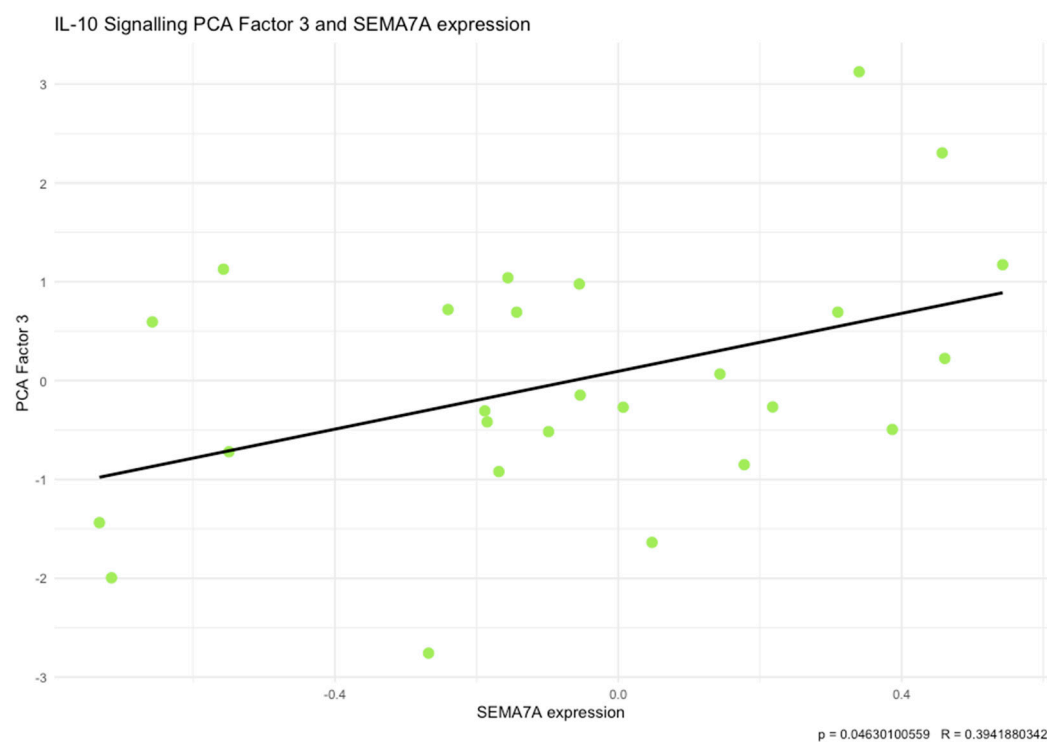
**Table S2.** Loadings of 3 factors (PCA Factors) after varimax rotation. Coordinates for the variables for molecular processes associated with SEMA7A protein expression in PCA.

	Factor 1	Factor 2	Factor 3
<b>JAK-STAT Signaling pathway</b>			
IL-12p70	−0.8258624	0.11750205	−0.457282328
IL-12p40	−0.8373085	0.22487476	−0.273070868
PDGF-bb	−0.8150474	−0.35654009	0.293391183
GM-CSF	−0.7318521	−0.09920407	−0.009131147
IFN-g	−0.4345574	−0.38886051	0.005565871
IL-3	−0.9030440	−0.22457675	−0.168425370
IL-5	−0.5419631	−0.59561754	−0.440889888
IL-6	−0.5894099	0.36691639	0.281352065
IL-7	−0.6578941	0.56600596	−0.212041374
IL-8	−0.6088077	−0.15935003	0.677005337
LIF	−0.6822913	−0.36118515	0.300599048
IL-9	−0.7968022	0.24426849	0.333012959
IL-10	−0.9025569	0.12695732	−0.256924516
G-CSF	−0.5905676	0.69535976	0.275303348
IL-13	−0.4074818	0.74137612	−0.133061854
IL-15	−0.8195435	−0.25087146	−0.275605837
IL-2Ra	−0.8228323	−0.20592529	0.310738099
IFN-a2	−0.9397476	−0.12733614	−0.056136555
<b>Interleukin-10 Signaling</b>			
MCP1	0.7943372	−0.3767467	0.02166584
MCSF	0.6362290	0.5551807	0.15726514
IL-8	0.8170250	0.1309014	0.05806426
IL-18	0.8552311	−0.1131509	−0.15993176
IL-6	0.5969671	−0.1126385	−0.13581595
GM-CSF	0.5455173	0.1217519	−0.58076828
LIF	0.6765232	0.4198803	−0.22605400
IL-10	0.7198566	0.1825030	−0.07950679
IL-1Ra	0.4971078	0.2547767	0.68842510
IL-1a	0.5637802	0.6349949	0.20255925
IP-10	0.7202554	−0.2241361	0.01494021
GRO-a	0.5420590	0.1601852	−0.62518396
MIP-1a	0.7035367	−0.6550089	0.11742772
IL-1b	0.4579680	0.6674594	0.27835836
MIP-1b	0.6971988	−0.3087812	0.35561877
G-CSF	0.7320699	−0.5831195	0.12585389
RANTES	0.8335233	−0.3698583	0.05552647
TNF-a	0.8284932	0.2616883	−0.17454436
<b>MAPK Signaling Pathway</b>			
bNGF	0.7650901	−0.32585012	−0.18556043
IL-1b	0.6077804	0.61540223	0.26322338
PDGF-bb	0.8447211	0.01907708	−0.32578568
IL-1a	0.8095839	0.05862270	0.24379058
BasicFGF	0.3503633	0.50349412	−0.70831476
SCF	0.4540817	−0.71927173	−0.07608305
MCSF	0.8046069	0.44958270	0.07520154
TNF-a	0.8924766	−0.24856940	−0.02908210
HGF	0.1149185	−0.90042150	−0.10967790
VEGFA	0.5909068	−0.12610632	0.54252954

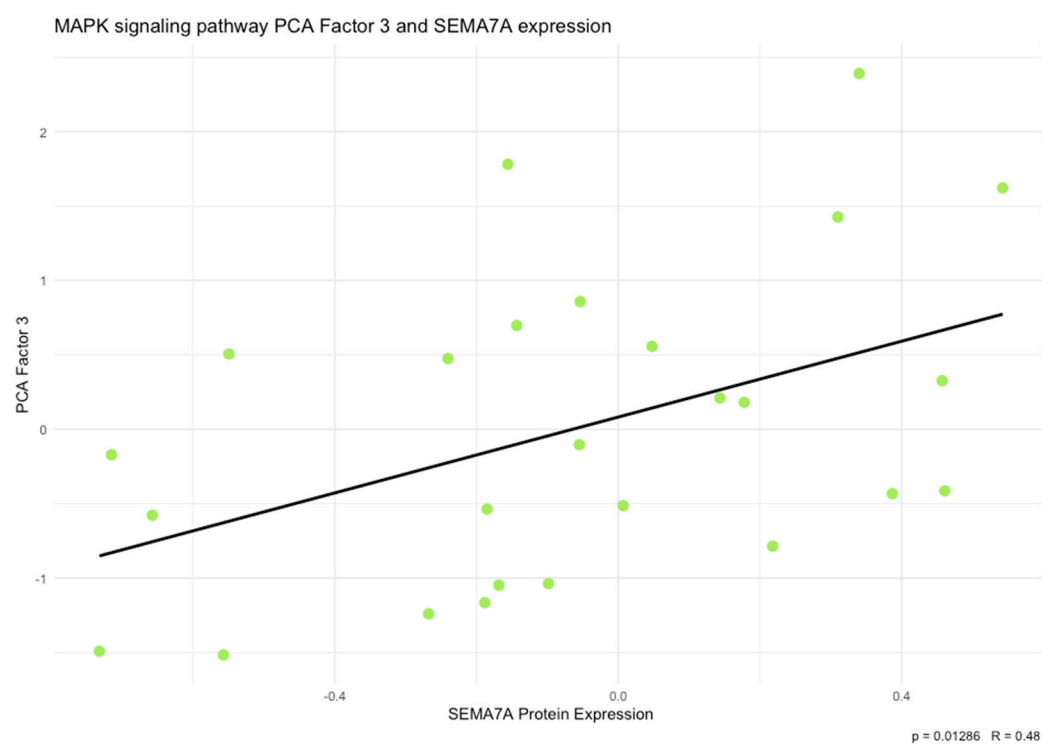




**Figure S8.** Correlation between SEMA7A protein expression and JAK-STAT Signaling Pathway PCA Factor 1. Spearman's rank correlation.



**Figure S9.** Correlation between SEMA7A protein expression and IL-10 Signaling PCA Factor 3. Spearman's rank correlation.



**Figure S10.** Correlation between SEMA7A protein expression and MAPK Signaling Pathway PCA Factor 3. Spearman's rank correlation.