Production of platelets *in vitro* in functionalized 3-dimensional scaffolds mimicking the bone marrow niche

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Supplementary methods

1. *RNA isolation and microarray analysis*
   RNA was extracted using RNeasy Plus kit (Qiagen) following manufacturers protocol. RNA quality was verified by an Agilent Bioanalyser system (Agilient Technologies) with 260/280OD ratios between 2.01-2.03 and 28S/18S ratios between 2.1-2.7. Expression levels were assayed using Illumina MouseWG-6 v2.0 and Illumina HumanHT-12 v4.0 Expression BeadChip for the murine and human cell lines, respectively. Analysis of the mouse and human expression data and downstream analyses have been described previously[1]. To adjust for the dependence between the variance and the probe intensity, variance stabilized transformation (VST) was carried out on background subtracted signal intensities generated by Genome Studio version 1.5.4. We then removed probes with very low signal (detection P-value> 0.01 in all samples) using R package lumi. On the remaining set of probes, we applied surrogate variable analysis implemented in the R package sva[4] to account for unmodeled factors that may bring about batch effects, in addition to known covariates such cell line identity. After performing these steps, we used the final adjusted intensities downstream analyses. Differential expression analyses between cell lines was carried out using the R package limma[5] where statistical significance was determined by fold change> 1.5 (over-expressed relative to control) or < 0.67 (under-expressed) and a Benjamini-Hochberg adjusted P-value < 0.25.

2. *Protein extraction and proteomics analysis*
   Subcellular fractional protein extraction was performed using Proteoextract subcellular proteome extraction kit (Merck, Millipore) following manufacturers protocol. Reduced and alkylated Cytosolic protein extract ("fraction 1") and Membrane/Organelle protein extract ("fraction 2") were analysed were sequentially digested with Lys-C (1:100; Promega, Madison, WI) and trypsin (1:100; Promega), peptides purified using C18 and resuspended in 1% formic acid as before[2, 3]. Samples were analysed in triplicate using a Thermo Scientific Q Exactive mass spectrometer connected to a Dionex Ultimate 3000 (RSLCnano) chromatography system. Raw mass spectrometry files were searched using MaxQuant (MQ) proteomics software (https://www.maxquant.org/) and tandem mass spectrometry spectra searched against mouse (Dec 2014) and human FASTA (May 2014).

3. *Identification of transmembrane proteins for recombinant expression (recTMP)*
   The sequences of proteins that were more abundant in the proteomic and transcriptomic datasets of supportive cell lines compared to control cells were downloaded from uniprot. Each protein was analysed for the presence of predicted transmembrane (TM) domains, glycosylphosphatidylinositol (GPI) anchor and signal peptide (SP) sequences using SignalP v4.1 and TMHMMv2.0 essentially as described[4-6]. Some proteins predicted to be membrane-localized were excluded based on the following criteria: membrane proteins where the ectodomain did not consist of a contiguous polypeptide such as "multi-pass" membrane proteins; those membrane proteins that lacked a signal peptide (e.g. type II membrane proteins) and those annotated as being localised to intracellular organelles such as mitochondria or the endoplasmic reticulum. The region corresponding to the entire ectodomain for each protein was determined using software tools that predicted the location of transmembrane regions as above. Synthetic gene constructs corresponding to these sequences were made by gene synthesis and codon optimised for human cells (GeneartAG, Germany), essentially as described[7]. The coding sequences were cloned

into a mammalian expression plasmids (GeneArt, derived from the pTT3 vector) containing the rat Cd4 domains 3 and 4 antigenic tag, an enzymatic biotinylatable sequence, and 6-His tags as described[8, 9].

4. *Expression of recTMPs*
The extracellular region of selected receptor proteins were expressed as biotinylated, secreted recombinant proteins in HEK293E and HEK2936E cells as previously described (see also Supplementary Fig. 9a-b)[8, 10-13]. Protein expression was confirmed by a colour precipitation solution 5-bromo-4-chloro-3'-indolyphosphate p-toluidine salt/ nitro-blue tetrazolium chloride (BCIP/NBT; Roche 11697471001) or by ELISA using a mouse anti-rat-Cd4 antibody (1/300, clone OX-68, Bio-Rad) with anti-mouse IgG-alkaline phosphatase antibody (1/1000, Merck) and a phosphatase substrate (Merck). ELISAs were analysed at 405nm with a Spectromax M5 plate reader with Softmax Pro software (Molecular Devices).

5. *Mobilisation of recTMPs*
For functionalised wells (2D). Nunc Maxisorp coated 96 well plates (Merck) were incubated with 100ug/ml streptavidin (Merck) with/without 200µg/ml fibrinogen (for proplatelet assay, FIB3, Enzyme Research) for 1 hour at r.t. Wells washed with PBS+0.2% BSA were incubated for 1 hour at r.t. with recTMP. *For static collagen scaffolds*. 8mm diameter cross-linked collagen scaffolds were washed with PBS by semi-dehydration using a 0.22 µm, PES, steritop filter (Millipore). Semi-dehydrated scaffolds were rehydrated with 100ug/ml streptavidin and incubated overnight at 4°C. Scaffolds were washed with PBS+0.2% BSA. Scaffolds were rehydrated with recTMP and incubated for 1 hour at r.t. *On silk films* Silk films were generated following previously published protocol.[14] Silk films were either coated with 10 and 20µg/ml recTMPs or functionalized by mixing the silk solution with 10 or 20µg/ml recTMPs before casting. Silk films were water annealed in a vacuum chamber containing 100ml of water at the bottom of the chamber. The water annealing chamber was maintained at room temperature for 16 hours.

6. *Data Analysis- recTMP screening*
A negative binomial regression model of the number of platelets was fitted solely on batch. A scattergram of the predicted number of platelets from the model against the observed number of platelets demonstrates that batch is a strong determinant of variation. In addition, it reveals a significant degree of heteroscedasticity over batches (Supplementary Figure 10). To account for the heteroscedasticity in our analysis of the effects of protein on the number of platelets, a separate negative binomial regression model was fitted for each batch and protein, which included an intercept term and a binary covariate indicating whether a measurement corresponded to a given protein. The inverse-variance weighting method was then used to meta-analyse the fixed effects corresponding to each protein across batches. We computed adjusted p-values using Benjamini and Hochberg's method for controlling the false discovery rate[15].

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Supplementary Figure Legends

Supplementary Figure 1. Characterisation of *in vitro* produced platelets. Flow cytometry raw data representing gating strategies in *in vitro* platelet characterisation. First, by forward scatter (FS) vs side scatter (SS) with events similar in size and density to peripheral blood platelets, then using metabolic viability dye, calcein-AM, positive cells are gated on and finally using platelet surface receptors CD41a and CD42a. All *in vitro* produced platelets are defined as calcein-AM$^+$/CD41a$^+$/CD42a$^+$.

Supplementary Figure 2. Platelet production increases with direct contact of megakaryocytes (MKs) and other cells. Analysis of platelet production by flow cytometry of cord blood-derived MKs (CBMKs) **(A)** co-cultured with the indicated cell lines for 72 hours or **(B)** cultured with conditioned media from the indicated cell lines for 72 hours. All data represents relative platelet production compared to the untreated control (Ctl). **(A)** n=5-6, **(B)** n=3-4. Paired Student T-test, # p=0.085, * p<0.05.

Supplementary Figure 3. Platelets/megakaryocyte (MK) quantification of platelet production with shortlisted proteins. Analysis of platelet production by flow cytometry of **(A)** cord blood-derived MKs (CBMKs), n=3-5, and **(B)** induced pluripotent stem cell-derived MKs (iPSC-MKs), n=3-6, incubated with individual recTMPs at 10µg/ml for 72/24 hours (CBMK/iPSC-MK), data expressed as platelets per seeded MK. Streptavidin only control (Ctl). All data mean±S.D., Repeated measures one-way ANOVA, * p<0.05.

Supplementary Figure 4. Quantification of individual recombinant transmembrane proteins (recTMPs) and platelet production. (A) Quantification of the indicated concentrations of mobilised recTMPs in a 2D culture system using a rat Cd4 ELISA, data represents optical density (OD), n=3. Analysis of platelet

production by flow cytometry of **(B)** cord blood-derived megakaryocytes (CBMKs), n=3, and **(C-E)** induced pluripotent stem cell-derive megakaryocytes (iPSC-MKs), n=4-3, incubated with individual recTMPs at the indicated concentrations for 72/24 hours (CBMK/iPSC-MK), data expressed as platelets per seeded MK. Streptavidin only control (Ctl). All data mean±S.D., Repeated measures one-way ANOVA, * $p<0.05$.

Supplementary Figure 5. Quantification of recombinant transmembrane proteins (recTMPs) combinations in tissue culture wells and platelet production. Analysis of platelet production by flow cytometry of induced pluripotent stem cell-derived megakaryocytes (iPSC-MKs) incubated with the indicated concentrations of recTMPs for 24 hours individually or in combination; **(A-B)** duplicates, n=3, or **(C-D)** triplicate, n=3, **(A+C)** data represents relative platelet production compared to the streptavidin-only control (Ctl), **(B+D)** expressed as platelets per seeded MK. **(E-F)** Quantification of the indicated concentrations of mobilised recTMPs in a 2D culture system using a rat Cd4 ELISA, data represents optical density (OD), n=3. All data mean±S.D. repeated measures one-way ANOVA, n.s. not statistically significant.

Supplementary Figure 6. Platelet/megakaryocyte (MK) quantification of platelet production on collagen scaffolds. Analysis of platelet production on functionalised collagen scaffolds of **(A)** cord blood-derived MKs (CBMKs), with 0.01mg/ml ACVR1B, n=4, and **(B)** induced pluripotent stem cell-derived MKs (iPSC-MKs), with either 0.178mg/ml MUCEN, 0.355mg/ml BTN1A1, 0.71mg/ml CRTAM or all three recombinant transmembrane proteins (recTMPs) together, n=4, data expressed as platelets per seeded MK. Streptavidin only control (Ctl). All data mean±S.D., Repeated measures one-way ANOVA, ** $p<0.01$.

Supplementary Figure 7. Functionalised silk scaffold preparation and characterisation (A) Schematic showing recombinant transmembrane proteins (recTMPs) for silk scaffolds, including the protein ectodomain, Cd4 tag, silk β-sheet bind sequence and HIS tag, and how these recTMPs bind to silk β-sheets. **(B)** Representative 5-bromo-4-chloro-3'-indolyphosphate p-toluidine salt/ nitro-blue tetrazolium chloride (BCIP/NBT) dye deposition on silk films. **(C)** Quantification of recTMPs using Cd4 ELISA after silk film functionalisation with the indicated peptides, data represents optical density (OD), n=3. **(D)** Representative BCIP/NBT dye deposition on silk scaffold. **(E)** Quantification of recTMPs using Cd4 ELISA after 3D silk scaffold functionalisation with the indicated peptides, data represents optical density (OD), n=3. The figures of the tubes, pipettes and petri dish are adapted from Servier Medical Art licensed under a Creative Commons Attribution 3.0 Unported License (https://smart.servier.com). All data mean±S.D.

Supplementary Figure 8. Proplatelets and dumbbells structures in bioreactor outflow. Brightfield images of bioreactor out flow of silk functionalised with ACVR1B and the control, representative image of three repeats.

Supplementary Figure 9. Schematic of collagen and silk recombinant transmembrane proteins (recTMPs). (A) recTMPs for the functionalisation of collagen scaffolds or any streptavidin coated surface contain the protein ectodomain, a rat Cd4 tag (domains 3+4), HIS tag and a biotin binding sequence. **(B)** To conjugate the purified recombinant proteins to the silk scaffold, the biotin- and 6-HIS- tag were

removed by cutting the expression plasmid with EcoR1 and XbaI restriction enzymes and replacing it with a synthetic gene insert encoding a "silk-tag" which is comprised of the repeated sequence ((GAGAGS)6) and again followed a 6-His tag for purification**.**

Supplementary Figure 10. Degree of heteroscedasticity over batches
We fitted a negative binomial regression model of the number of platelets on batch, encoded as a matrix of binary covariates. The scattergrams show the predicted number of platelets from a model fitted to data from **(A)** cord blood-derived megakaryocytes (CBMKs) and from a model fitted to data from **(B)** induced pluripotent stem cell-derived megakaryocytes (iPSC-MKs) against the observed number of platelets. Each distinct prediction value on the x-axes corresponds to a different batch. The residual variance differs substantially between each batch, reflecting heteroscedasticity. We accounted for this heteroscedasticity through a meta-analysis of batch-specific regression coefficients.

Supplementary Table legends

Supplementary Table 1. showing shortlisted differentially expressed proteins/transcripts in supportive mouse cell line C3H/10T1/2 compared to non-supportive mouse cell lines; OP9 and MEF. Whether they were successfully expressed and immobilised on streptavidin coated surfaces. Highlighted red, proteins that were unable to be expressed as recombinant transmembrane proteins (recTMPs).

Supplementary Table 2. showing shortlisted differentially expressed proteins/transcripts in supportive human cell lines; HUVEC and BMEC, compared to non-supportive human cell line, MSC. Whether they were successfully expressed and immobilised on streptavidin coated surfaces. Highlight red, proteins that were unable to be expressed as recombinant transmembrane proteins (recTMPs).

Supplementary Table 3. showing a shortlisted human platelet ectodomain protein library previously described in Sun Y 2015[16].

Supplementary Table 4. showing the inverse-variance weighted estimate of protein effect (Estimate) in cord blood-derived megakaryocytes (CBMKs) compared to the streptavidin only control, standard error (S.E.), p-value and adjusted p-value using Benjamini and Hochberg's method[15]. Red fill indicates shortlisted recombinant transmembrane proteins (recTMPs) for further validation. Blue fill indicates recTMPs shortlisted in iPSC-MKs.

Supplementary Table 5. showing the inverse-variance weighted estimate of protein effect (Estimate) in induced pluripotent stem cell-derived megakaryocytes (iPSC-MKs) compared to the streptavidin only control, standard error (S.E.), p-value and adjusted p-value using Benjamini and Hochberg's method[15]. Red fill indicates shortlisted recombinant transmembrane proteins (recTMPs) for further validation. Blue fill indicates recTMPs shortlisted in cord blood-derived megakaryocytes (CBMKs).

Supplementary Table 6. showing which data sets the shortlisted proteins were identified in.

Supplementary Tables

Supplementary table 1.

Protein no.	Gene	Description	uniprot ID	Truncation residue	Analysis type	Expressed?	Immobilised?
1	IL1RA	Interleukin-1 receptor antagonist protein	P18510	E177	Proteomics	Yes	Yes
2	DHRS9	Dehydrogenase/reductase SDR family member 9	Q9BPW9	V319	Proteomics	No	-
3	ARSB	Arylsulfatase B	P15848	M533	Proteomics	Yes	Yes
4	ANPRC	Atrial natriuretic peptide receptor 3	P17342	G477	Proteomics	Yes	Yes
5	PTN	Pleiotrophin	P21246	D168	Proteomics	Yes	Yes
6	CST9	Cystatin-9	Q5W186	K159	Proteomics	No	-
7	EST5A	Carboxylesterase 5A	Q6NT32	S550	Proteomics	Yes	Yes
8	X3CL1	Fractalkine	P78423	T338	Proteomics	Yes	Yes
9	LG3BP	Galectin-3-binding protein	Q08380	D585	Proteomics	Yes	Yes
10	RETST	All-trans-retinol 13,14-reductase	Q6NUM9	N610	Proteomics	No	-
11	HEXB	Beta-hexosaminidase subunit beta	P07686	M556	Proteomics	Yes	Yes
12	CYTC	Cystatin-C	P01034	A146	Proteomics	Yes	Yes
13	SDF1	Stromal cell-derived factor 1	P48061	M93	Proteomics	Yes	Yes
14	VWA8	von Willebrand factor A domain-containing protein 8	A3KMH1	V1905	Proteomics	No	-
15	LMA1L	Protein ERGIC-53-like	Q9HAT1	P463	Proteomics	No	-
16	EST1	Liver carboxylesterase 1	P23141	L567	Proteomics	Yes	Yes
17	CSPG4	Chondroitin sulfate proteoglycan 4	Q6UVK1	S2224	Proteomics	Yes	Yes
18	SPI2	Serpin I2	O75830	L405	Proteomics	Yes	Yes
19	ISLR	Immunoglobulin superfamily containing leucine-rich repeat protein	O14498	P405	Proteomics	Yes	Yes
20	TM9S	Transmembrane 9 superfamily member 1	O15321	S238	Proteomics	Yes	Yes
21	CADH4	Cadherin-4	P55283	T732	Proteomics	Yes	Yes
22	ITIH3	Inter-alpha-trypsin inhibitor heavy chain H3	Q06033	F890	Proteomics	Yes	Yes
23	SBSN	Suprabasin	Q6UWP8	P590	Proteomics	Yes	Yes
24	DHB13	17-beta-hydroxysteroid dehydrogenase 13	Q7Z5P4	K300	Proteomics	No	-
25	ROBO4	Roundabout homolog 4	Q8WZ75	P468	Proteomics	Yes	Yes
26	FGRL1	Fibroblast growth factor receptor-like 1	Q8N441	P376	Transcriptomics	Yes	Yes
27	GLIP1	Glioma pathogenesis-related protein 1	P48060	S235	Transcriptomics	Yes	Yes
28	PCP	Lysosomal Pro-X carboxypeptidase	P42785	H496	Transcriptomics	Yes	Yes
29	CLCF1	Cardiotrophin-like cytokine factor 1	Q9UBD9	F225	Transcriptomics	Yes	Yes
30	ECM1	Extracellular matrix protein 1	Q16610	E540	Transcriptomics	Yes	Yes
31	CDSN	Corneodesmosin	Q15517	P529	Transcriptomics	Yes	Yes
32	FBLN2	Fibulin-2	P98095	L1184	Transcriptomics	Yes	Yes
33	GHR	Growth hormone receptor	P10912	T258	Transcriptomics	Yes	Yes
34	CADH2	Cadherin-2	P19022	T722	Transcriptomics	Yes	Yes

Supplementary table 2.

Protein no.	Gene	Description	uniprot ID	Truncation residue	Analysis type	Expressed?	Immobilised?
35	PORIM	Porimin	Q8N131	S168	Proteomics	Yes	Yes
36	MFGM	Lactadherin	Q08431	C387	Proteomics	No	-
37	FKB11	Peptidyl-prolyl cis-trans isomerase FKBP11	Q9NYL4	P158	Proteomics	Yes	Yes
38	CNTP1	Contactin-associated protein 1	P78357	G1280	Proteomics	No	-
39	LYOX	Protein-lysine 6-oxidase	P28300	Y417	Proteomics	No	-
40	LOXL1	Lysyl oxidase homolog 1	Q08397	S574	Proteomics	No	-
41	EPHA2	Ephrin type-A receptor 2	P29317	G533	Proteomics	Yes	Yes
42	EPHA4	Ephrin type-A receptor 4	P54764	A544	Proteomics	Yes	Yes
43	EPHA7	Ephrin type-A receptor 7	Q15375	P554	Proteomics	Yes	Yes
44	EPHB3	Ephrin type-B receptor 3	P54753	P558	Proteomics	Yes	Yes
45	EPHA6	Ephrin type-A receptor 6	Q9UF33	I548	Proteomics	Yes	Yes
46	EPHB2	Ephrin type-B receptor 2	P29323	P542	Proteomics	Yes	Yes
47	UFO	Tyrosine-protein kinase receptor UFO	P30530	P449	Proteomics	Yes	Yes
48	GPC1	Glypican-1	P35052	S533	Proteomics	Yes	Yes
49	TPBG	Trophoblast glycoprotein	Q13641	S351	Proteomics	Yes	Yes
50	NID2	Nidogen-2	Q14112	G1373	Proteomics	Yes	Yes
51	IBP7	Insulin-like growth factor-binding protein 7	Q16270	L282	Proteomics	Yes	Yes
52	VASN	Vasorin	Q6EMK4	P575	Proteomics	Yes	Yes
53	C99L2	CD99 antigen-like protein 2	Q8TCZ2	P184	Proteomics	Yes	Yes
54	GSLG1	Golgi apparatus protein 1	Q92896	S1143	Proteomics	Yes	Yes
55	TINAL	Tubulointerstitial nephritis antigen-like	Q9GZM7	H467	Proteomics	Yes	Yes
56	CD248	Endosialin	Q9HCU0	S680	Proteomics	Yes	Yes
57	MRC2	C-type mannose receptor 2	Q9UBG0	P1412	Proteomics	Yes	Yes
58	CATZ	Cathepsin Z	Q9UBR2	V303	Proteomics	Yes	Yes
59	LOXL2	Lysyl oxidase homolog 2	Q9Y4K0	P773	Proteomics	Yes	Yes
60	GPC6	Glypican-6	Q9Y625	S530	Proteomics	Yes	Yes
61	ROBO1	Roundabout homolog 1	Q9Y6N7	P897	Proteomics	Yes	Yes
62	ROBO2	Roundabout homolog 2	Q9HCK4	P859	Proteomics	Yes	Yes
63	SHSA3	Protein shisa-3 homolog	A0PJX4	P94	Proteomics	Yes	Yes
64	TLR4	Toll-like receptor 4	O00206	I634	Proteomics	No	-
65	PODXL	Podocalyxin	O00592	P461	Transcriptomics	Yes	Yes
66	PCD17	Protocadherin-17	O14917	P707	Transcriptomics	Yes	Yes
67	ANGP2	Angiopoietin-2	O15123	F496	Transcriptomics	Yes	Yes
68	MPZL2	Myelin protein zero-like protein 2	O60487	S149	Transcriptomics	Yes	Yes
69	SRPX2	Sushi repeat-containing protein SRPX2	O60687	E465	Transcriptomics	No	-
70	RAMP2	Receptor activity-modifying protein 2	O60895	P142	Transcriptomics	Yes	Yes
71	CATL2	Cathepsin L2	O60911	V334	Transcriptomics	Yes	Yes
72	PLXA2	Plexin-A2	O75051	P1237	Transcriptomics	Yes	Yes
73	MEGF6	Multiple epidermal growth factor-like domains protein 6	O75095	H1541	Transcriptomics	No	-
74	GABR2	Gamma-aminobutyric acid type B receptor subunit 2	O75899	P480	Transcriptomics	Yes	Yes
75	UROK	Urokinase-type plasminogen activator	P00749	L431	Transcriptomics	Yes	Yes
76	TPA	Tissue-type plasminogen activator	P00750	P562	Transcriptomics	Yes	Yes
77	PDGFB	Platelet-derived growth factor subunit B	P01127	A241	Transcriptomics	Yes	Yes
78	APOE	Apolipoprotein E	P02649	H317	Transcriptomics	Yes	Yes
79	CFAI	Complement factor I	P05156	V583	Transcriptomics	Yes	Yes
80	EDN1	Endothelin-1	P05305	W212	Transcriptomics	Yes	Yes
81	HEP2	Heparin cofactor 2	P05546	S499	Transcriptomics	Yes	Yes
82	TRBM	Thrombomodulin	P07204	G516	Transcriptomics	Yes	Yes
83	PROS	Vitamin K-dependent protein S	P07225	S676	Transcriptomics	Yes	Yes
84	MGP	Matrix Gla protein	P08493	F96	Transcriptomics	Yes	Yes
85	MMP7	Matrilysin	P09237	G259	Transcriptomics	Yes	Yes
86	MMP10	Stromelysin-2	P09238	C476	Transcriptomics	Yes	Yes
87	TACD2	Tumor-associated calcium signal transducer 2	P09758	A275	Transcriptomics	Yes	Yes
88	TFPI1	Tissue factor pathway inhibitor	P10646	F209	Transcriptomics	Yes	Yes
89	KIT	Mast/stem cell growth factor receptor Kit	P10721	P524	Transcriptomics	Yes	Yes
90	CBPA3	Mast cell carboxypeptidase A	P15088	S417	Transcriptomics	No	-
91	CBPE	Carboxypeptidase E	P16870	F476	Transcriptomics	Yes	Yes
92	EGLN	Endoglin	P17813	P590	Transcriptomics	Yes	Yes
93	IBP2	Insulin-like growth factor-binding protein 2	P18065	Q325	Transcriptomics	Yes	Yes
94	TCO2	Transcobalamin-2	P20062	W427	Transcriptomics	Yes	Yes
95	TNR1B	Tumor necrosis factor receptor superfamily member 1B	P20333	T255	Transcriptomics	Yes	Yes
96	EFNA1	Ephrin-A1	P20827	S182	Transcriptomics	Yes	Yes
97	ZP3	Zona pellucida sperm-binding protein 3	P21754	S386	Transcriptomics	Yes	Yes
98	GALA	Galanin peptides	P22466	S123	Transcriptomics	Yes	Yes
99	PTPRB	Receptor-type tyrosine-protein phosphatase beta	P23467	E1621	Transcriptomics	Yes	Yes
100	PTPRE	Receptor-type tyrosine-protein phosphatase epsilon	P23469	P46	Transcriptomics	Yes	Yes
101	ACHA5	Neuronal acetylcholine receptor subunit alpha-5	P30532	P250	Transcriptomics	Yes	Yes
102	CADH5	Cadherin-5	P33151	S597	Transcriptomics	Yes	Yes
103	TIE1	Tyrosine-protein kinase receptor Tie-1	P35590	L763	Transcriptomics	Yes	Yes
104	ACVL1	Serine/threonine-protein kinase receptor R3	P37023	G117	Transcriptomics	Yes	Yes
105	MUC18	Cell surface glycoprotein MUC18	P43121	G559	Transcriptomics	Yes	Yes
106	ABCG1	ATP-binding cassette sub-family G member 1	P45844	T423	Transcriptomics	No	-
107	PLGF	Placenta growth factor	P49763	R221	Transcriptomics	Yes	Yes
108	CATC	Dipeptidyl peptidase 1	P53634	L463	Transcriptomics	Yes	Yes
109	EPHB4	Ephrin type-B receptor 4	P54760	L540	Transcriptomics	Yes	Yes
110	PAR2	Proteinase-activated receptor 2	P55085	P79	Transcriptomics	Yes	Yes
111	CCL23	C-C motif chemokine 23	P55773	N120	Transcriptomics	Yes	Yes
112	SRPX	Sushi repeat-containing protein SRPX	P78539	T464	Transcriptomics	Yes	Yes
113	ILRL1	Interleukin-1 receptor-like 1	Q01638	S328	Transcriptomics	Yes	Yes
114	TIE2	Angiopoietin-1 receptor	Q02763	G743	Transcriptomics	Yes	Yes
115	HYAL1	Hyaluronidase-1	Q12794	W435	Transcriptomics	Yes	Yes
116	FBLN3	EGF-containing fibulin-like extracellular matrix protein 1	Q12805	F493	Transcriptomics	No	-
117	MERTK	Tyrosine-protein kinase Mer	Q12866	P501	Transcriptomics	Yes	Yes
118	HYAL2	Hyaluronidase-2	Q12891	G447	Transcriptomics	Yes	Yes
119	I15RA	Interleukin-15 receptor subunit alpha	Q13261	T205	Transcriptomics	Yes	Yes
120	SEM3F	Semaphorin-3F	Q13275	T785	Transcriptomics	Yes	Yes
121	IL18R	Interleukin-18 receptor 1	Q13478	G330	Transcriptomics	Yes	Yes
122	SEM3A	Semaphorin-3A	Q14563	V771	Transcriptomics	Yes	Yes
123	CALRL	Calcitonin gene-related peptide type 1 receptor	Q16602	T145	Transcriptomics	Yes	Yes
124	CCL14	C-C motif chemokine 14	Q16627	N93	Transcriptomics	Yes	Yes
125	CCL15	C-C motif chemokine 15	Q16663	I113	Transcriptomics	Yes	Yes
126	ECSCR	Endothelial cell-specific chemotaxis regulator	Q19T08	V122	Transcriptomics	Yes	Yes
127	F174B	Membrane protein FAM174B	Q3ZCQ3	T90	Transcriptomics	Yes	Yes
128	SHSA2	Protein shisa-2 homolog	Q6UWI4	P113	Transcriptomics	Yes	Yes
129	TARSH	Target of Nesh-SH3	Q7Z7G0	W1075	Transcriptomics	Yes	Yes
130	CLC14	C-type lectin domain family 14 member A	Q86T13	S396	Transcriptomics	Yes	Yes

Supplementary table 2. Continued

Protein no.	Gene	Description	uniprot ID	Truncation residue	Analysis type	Expressed?	Immobilised?
131	NRROS	Negative regulator of reactive oxygen species	Q86YC3	G649	Transcriptomics	No	-
132	C1QL4	Complement C1q-like protein 4	Q86Z23	D238	Transcriptomics	No	-
133	RELL1	RELT-like protein 1	Q8IUW5	I59	Transcriptomics	No	-
134	SULF2	Extracellular sulfatase Sulf-2	Q8IWU5	G870	Transcriptomics	No	-
135	GP116	Adhesion G protein-coupled receptor F5	Q8IZF2	L990	Transcriptomics	Yes	Yes
136	SFRP1	Secreted frizzled-related protein 1	Q8N474	K314	Transcriptomics	Yes	Yes
137	NRCAM	Neuronal cell adhesion molecule	Q92823	T1166	Transcriptomics	Yes	Yes
138	TNR14	Tumor necrosis factor receptor superfamily member 14	Q92956	S199	Transcriptomics	Yes	Yes
139	PCD16	Protocadherin-16	Q96JQ0	V2938	Transcriptomics	No	-
140	HHIP	Hedgehog-interacting protein	Q96QV1	V700	Transcriptomics	No	-
141	CLCC1	Chloride channel CLIC-like protein 1	Q96S66	P182	Transcriptomics	Yes	Yes
142	C1QT6	Complement C1q tumor necrosis factor-related protein 6	Q9BXI9	D259	Transcriptomics	No	-
143	C1QT5	Complement C1q tumor necrosis factor-related protein 5	Q9BXJ0	A243	Transcriptomics	Yes	Yes
144	RSPO3	R-spondin-3	Q9BXY4	H272	Transcriptomics	Yes	Yes
145	ANGL4	Angiopoietin-related protein 4	Q9BY76	S406	Transcriptomics	No	-
146	FXYD6	FXYD domain-containing ion transport regulator 6	Q9H0Q3	T36	Transcriptomics	Yes	Yes
147	SEM6C	Semaphorin-6C	Q9H3T2	P604	Transcriptomics	Yes	Yes
148	SEM6B	Semaphorin-6B	Q9H3T3	S602	Transcriptomics	Yes	Yes
149	MANS1	MANSC domain-containing protein 1	Q9H8J5	P380	Transcriptomics	Yes	Yes
150	NET4	Netrin-4	Q9HB63	K628	Transcriptomics	No	-
151	ELTD1	Adhesion G protein-coupled receptor L4	Q9HBW9	L406	Transcriptomics	Yes	Yes
152	PCD12	Protocadherin-12	Q9NPG4	S715	Transcriptomics	Yes	Yes
153	C1QR1	Complement component C1q receptor	Q9NPY3	L583	Transcriptomics	Yes	Yes
154	ESM1	Endothelial cell-specific molecule 1	Q9NQ30	R184	Transcriptomics	Yes	Yes
155	CECR1	Adenosine deaminase CECR1	Q9NZK5	K511	Transcriptomics	Yes	Yes
156	FPRP	Prostaglandin F2 receptor negative regulator	Q9P2B2	P832	Transcriptomics	Yes	Yes
157	EGFL7	Epidermal growth factor-like protein 7	Q9UHF1	S273	Transcriptomics	No	-
158	PCOC2	Procollagen C-endopeptidase enhancer 2	Q9UKZ9	C415	Transcriptomics	Yes	Yes
159	MUCEN	Endomucin	Q9ULC0	S190	Transcriptomics	Yes	Yes
160	FZD4	Frizzled-4	Q9ULV1	D220	Transcriptomics	No	-
161	APEL	Apelin	Q9ULZ1	F77	Transcriptomics	Yes	Yes
162	EPCR	Endothelial protein C receptor	Q9UNN8	S210	Transcriptomics	Yes	Yes
163	LAMP3	Lysosome-associated membrane glycoprotein 3	Q9UQV4	S378	Transcriptomics	Yes	Yes
164	JAG2	Protein jagged-2	Q9Y219	T1080	Transcriptomics	Yes	Yes
165	PLXD1	Plexin-D1	Q9Y4D7	T1270	Transcriptomics	Yes	Yes
166	LIPE	Endothelial lipase	Q9Y5X9	P500	Transcriptomics	Yes	Yes
167	LYVE1	Lymphatic vessel endothelial hyaluronic acid receptor 1	Q9Y5Y7	G234	Transcriptomics	Yes	Yes
168	BACE2	Beta-secretase 2	Q9Y5Z0	P466	Transcriptomics	Yes	Yes
169	GPR56	Adhesion G-protein coupled receptor G1	Q9Y653	L382	Transcriptomics	Yes	Yes
170	ENPP4	Bis(5'-adenosyl)-triphosphatase ENPP4	Q9Y6X5	P405	Transcriptomics	Yes	Yes
171	APOD	Apolipoprotein D	P05090	S189	Transcriptomics	Yes	Yes
172	NRG1	Pro-neuregulin-1, membrane-bound isoform	Q02297	P421	Transcriptomics	Yes	Yes
173	CNTP5	Contactin-associated protein-like 5	Q8WYK1	G1241	Transcriptomics	Yes	Yes
174	T132C	Transmembrane protein 132C	Q8N3T6	G926	Transcriptomics	Yes	Yes
175	PDCD1	Programmed cell death protein 1	Q15116	T168	Transcriptomics	Yes	Yes
176	PD1L1	Programmed cell death 1 ligand 1	Q9NZQ7	P235	Transcriptomics	Yes	Yes
177	LAG3	Lymphocyte activation gene 3 protein	P18627	G448	Transcriptomics	Yes	Yes
178	CTLA4	Cytotoxic T-lymphocyte protein 4	P16410	P156	Transcriptomics	Yes	Yes
179	HAVR2	Hepatitis A virus cellular receptor 2	Q8TDQ0	G202	Transcriptomics	Yes	Yes
180	TNR18	Tumor necrosis factor receptor superfamily member 18	Q9Y5U5	G164	Transcriptomics	Yes	Yes
181	ICOS	Inducible T-cell costimulator	Q9Y6W8	L135	Transcriptomics	Yes	Yes
182	CD28	T-cell-specific surface glycoprotein CD28	P10747	L140	Transcriptomics	Yes	Yes
183	TNR9	Tumor necrosis factor receptor superfamily member 9	Q07011	S189	Transcriptomics	Yes	Yes
184	PD1L2	Programmed cell death 1 ligand 2	Q9BQ51	T220	Transcriptomics	Yes	Yes
185	BTN1A1	Butyrophilin subfamily 1 member A1	Q4VAN1	P245	Transcriptomics	Yes	Yes
186	BT3A3	Butyrophilin subfamily 3 member A3	O00478	P247	Transcriptomics	Yes	Yes
187	BTNL9	Butyrophilin-like protein 9	Q6UXG8	A252	Transcriptomics	Yes	Yes
188	CRTAM	Cytotoxic and regulatory T-cell molecule	O95727	G287	Transcriptomics	Yes	Yes
189	TIGIT	T-cell immunoreceptor with Ig and ITIM domains	Q495A1	P141	Transcriptomics	Yes	Yes

Supplementary table 3.

Protein no.	Gene	Description	uniprot ID	Truncation residue	Analysis type	Expressed?	Immobilised?
190	PECAM1	Platelet endothelial cell adhesion molecule	P16284	G602	Proteomics	Yes	Yes
191	IL6ST	Interleukin-6 receptor subunit beta	P40189	E619	Proteomics	Yes	Yes
192	KIAA	Malectin	Q14165	S270	Proteomics	Yes	Yes
193	NRXN	Neurexin-1	Q9ULB1	T1401	Proteomics	Yes	Yes
194	PTPRC	Receptor-type tyrosine-protein phosphatase C	P08575	L577	Proteomics	Yes	Yes
195	PTPRJ	Receptor-type tyrosine-protein phosphatase eta	Q12913	P970	Proteomics	Yes	Yes
196	PVRL2	Nectin-2	Q92692	G359	Proteomics	Yes	Yes
197	TMED2	Transmembrane emp24 domain-containing protein 2	Q15363	R168	Proteomics	Yes	Yes
198	VIPR1	Vasoactive intestinal polypeptide receptor 1	P32241	G145	Proteomics	Yes	Yes
199	DLK1	Protein delta homolog 1	P80370	A304	Proteomics	Yes	Yes
200	SELP	P-selectin	P16109	A771	Proteomics	Yes	Yes
201	F2RL2	Proteinase-activated receptor 3	O00254	P98	Proteomics	Yes	Yes
202	M6PR	Cation-dependent mannose-6-phosphate receptor	P20645	S187	Proteomics	Yes	Yes
203	MET	Hepatocyte growth factor receptor	P08581	P927	Proteomics	Yes	Yes
204	SORT1	Sortilin	Q99523	P758	Proteomics	Yes	Yes
205	CD36	Platelet glycoprotein 4	P16671	G30-N439	Proteomics	Yes	Yes
206	CTGF	Connective tissue growth factor	P29279	A349	Proteomics	Yes	Yes
207	PDIA3	Protein disulfide-isomerase A3	P30101	L505	Proteomics	Yes	Yes
208	PDIA5	Protein disulfide-isomerase A5	Q14554	L519	Proteomics	Yes	Yes
209	PPBP	Platelet basic protein	P02775	D128	Proteomics	Yes	Yes
210	SERPINC1	Antithrombin-III	P01008	K464	Proteomics	Yes	Yes
211	SPARC	SPARC	P09486	I303	Proteomics	Yes	Yes
212	SRGN	Serglycin	P10124	L158	Proteomics	Yes	Yes
213	TIMP1	Metalloproteinase inhibitor 1	P01033	A207	Proteomics	Yes	Yes
214	TTR	Transthyretin	P02766	E147	Proteomics	Yes	Yes
215	AHSG	Alpha-2-HS-glycoprotein	P02765	V367	Proteomics	Yes	Yes
216	ALB	Serum albumin	P02768	L609	Proteomics	Yes	Yes
217	APOH	Beta-2-glycoprotein 1	P02749	C345	Proteomics	Yes	Yes
218	C12	Spexin	Q9BT56	W116	Proteomics	Yes	Yes
219	ITIH4	Inter-alpha-trypsin inhibitor heavy chain H4	Q14624	L930	Proteomics	Yes	Yes
220	SERPINA	Alpha-1-antitrypsin	P01009	K418	Proteomics	Yes	Yes
221	APP	Amyloid beta A4 protein	P05067	G700	Proteomics	Yes	Yes
222	SMR3B	Submaxillary gland androgen-regulated protein 3B	P02814	P79	Proteomics	Yes	Yes
223	PDPN	Podoplanin	Q86YL7	L131	Proteomics	Yes	Yes
224	GP1BAm	Platelet glycoprotein Ib alpha chain	P07359	P497	Proteomics	Yes	Yes
225	GP1BBm	Platelet glycoprotein Ib beta chain	P13224	P145	Proteomics	Yes	Yes
226	GP1Bab	Platelet glycoprotein Ib alpha chain	P07359/P13224	L502/W148	Proteomics	Yes	Yes
227	FCER2	Low affinity immunoglobulin epsilon Fc receptor	P06734	D48-S321	Proteomics	Yes	Yes
228	TFRC	Transferrin receptor protein 1	P02786	C89-F760	Proteomics	Yes	Yes
229	CD20	Adipocyte plasma membrane-associated protein	Q9HDC9	E62-V416	Proteomics	Yes	Yes
230	BSG	Basigin	P35613	L322	Proteomics	Yes	Yes
231	CD47	Leukocyte surface antigen CD47	Q08722	P139	Proteomics	Yes	Yes
232	G6B	Protein G6b	O95866	P141	Proteomics	Yes	Yes
233	CD55	Complement decay-accelerating factor	P08174	S353	Proteomics	Yes	Yes
234	CD226	CD226 antigen	Q15762	F252	Proteomics	Yes	Yes
235	CD84	SLAM family member 5	Q9UIB8	T224	Proteomics	Yes	Yes
236	DAG1	Dystroglycan	Q14118	T753	Proteomics	Yes	Yes
237	ICAM2	Intercellular adhesion molecule 2	P13598	M224	Proteomics	Yes	Yes
238	ACVR1	Activin receptor type-1	Q04771	G125	Proteomics	Yes	Yes
239	ACVR1B	Activin receptor type-1B	P36896	P124	Proteomics	Yes	Yes
240	APLP2	Amyloid-like protein 2	Q06481	S693	Proteomics	Yes	Yes
241	CALCR	Calcitonin receptor	P30988	Y150	Proteomics	Yes	Yes
242	CD34	Hematopoietic progenitor cell antigen CD34	P28906	T290	Proteomics	Yes	Yes
243	CD40	Tumor necrosis factor receptor superfamily member 5	P25942	L192	Proteomics	Yes	Yes
244	CD58	Lymphocyte function-associated antigen 3	P19256	R215	Proteomics	Yes	Yes
245	CD59	CD59 glycoprotein	P13987	G103	Proteomics	Yes	Yes
246	EFNB1	Ephrin-B1	P98172	L240	Proteomics	Yes	Yes
247	ENDOD	Endonuclease domain-containing 1 protein	O94919	P540	Proteomics	Yes	Yes
248	EPHB1	Ephrin type-B receptor 1	P54762	P245	Proteomics	Yes	Yes
249	ESAM	Endothelial cell-selective adhesion molecule	Q96AP7	P245	Proteomics	Yes	Yes
250	F11R	Junctional adhesion molecule A	Q9Y624	G237	Proteomics	Yes	Yes
251	FCGR2a	Low affinity immunoglobulin gamma Fc region receptor	P12318	P215	Proteomics	Yes	Yes
252	JAM3	Junctional adhesion molecule C	Q9BX67	G243	Proteomics	Yes	Yes
253	LAMP1	Lysosome-associated membrane glycoprotein 1	P11279	P385	Proteomics	Yes	Yes
254	PRNP	Major prion protein	P04156	S230	Proteomics	Yes	Yes
255	PTTG	Pituitary tumor-transforming gene 1 protein-interacting protein	P53801	E96	Proteomics	Yes	Yes
256	QSOX1	Sulfhydryl oxidase 1	O00391	G703	Proteomics	Yes	Yes
257	SEMA4	Semaphorin-3F	Q13275	S707	Proteomics	Yes	Yes
258	SPN	Leukosialin	O75398	P257	Proteomics	Yes	Yes
259	STIM1	Stromal interaction molecule 1	Q13586	D213	Proteomics	Yes	Yes
260	TM9	Transmembrane 9 superfamily member 4 precursor	Q92544	H279	Proteomics	Yes	Yes
261	TMED4	Transmembrane emp24 domain-containing protein 4	Q7Z7H5	R194	Proteomics	Yes	Yes
262	TMED9	Transmembrane emp24 domain-containing protein 9	Q9BVK6	R181	Proteomics	Yes	Yes
263	TMEM	Transmembrane protein 109 precursor	Q9BVC6	S82	Proteomics	Yes	Yes
264	TREML	Trem-like transcript protein	Q86YW5	P162	Proteomics	Yes	Yes
265	ULBP3	NKG2D ligand 3	Q9BZM4	P216	Proteomics	Yes	Yes
266	LAMP2	Lysosome-associated membrane glycoprotein 2	P13473	P378	Proteomics	No	-
267	F2R	Proteinase-activated receptor 1	P25116	P106	Proteomics	Yes	Yes
268	F2RL3	Proteinase-activated receptor 4	Q96RI0	T77	Proteomics	Yes	Yes
269	BAMBI	BMP and activin membrane-bound inhibitor homolog	Q13145	S145	Proteomics	Yes	Yes
270	DCBL	Discoidin, CUB and LCCL domain-containing protein 2	Q96PD2	P475	Proteomics	Yes	Yes
271	fam171a1	Protein FAM171A1	Q5VUB5	T300	Proteomics	Yes	Yes
272	CYYR1	Cysteine and tyrosine-rich protein 1	Q96J86	T61	Proteomics	Yes	Yes
273	FCER1a	immunoglobulin epsilon Fc receptor	P06734	K201	Proteomics	Yes	Yes
274	LMAN2	Vesicular integral-membrane protein VIP36	Q12907	G320	Proteomics	Yes	Yes
275	LRRC59	Leucine-rich repeat-containing protein 59	Q96AG4	C266-Q307	Proteomics	Yes	Yes
276	MTDH	Protein LYRIC	Q86UE4	S84-T582	Proteomics	Yes	Yes
277	NSG1	Neuron-specific protein family member 1	P42857	K104-A185	Proteomics	Yes	Yes
278	SLC3A2	4F2 cell-surface antigen heavy chain	P08195	R211-A630	Proteomics	Yes	Yes
279	TTMP	TPA-induced transmembrane protein homolog	Q5BVD1	A89-E217	Proteomics	Yes	Yes
280	ARMET	Mesencephalic astrocyte-derived neurotrophic factor	P55145	L179	Proteomics	Yes	Yes
281	GSN	Gelsolin	P06396	A482	Proteomics	Yes	Yes
282	NID1	Nidogen-1	P14543	K1247	Proteomics	Yes	Yes
283	P4HB	Protein disulfide-isomerase	P07237	L508	Proteomics	Yes	Yes
284	PDIA4	Protein disulfide-isomerase A4	P13667	L645	Proteomics	Yes	Yes
285	PF4V1	Platelet factor 4 variant	P10720	S104	Proteomics	Yes	Yes
286	SERPINE1	Plasminogen activator inhibitor 1	P05121	P402	Proteomics	Yes	Yes

Supplementary table 4.

recTMP ID	GENE	Analysis	Estimate	S.E.	Count	p-value	Adjusted p-value
179	HAVR2	Human	-0.477	0.085	4	1.71E-08	5.40E-06
202	M6PR	Platelet	0.298	0.063	4	2.14E-06	3.38E-04
239	ACVR1B	Platelet	0.322	0.070	4	4.70E-06	4.95E-04
232	GSB	Platelet	0.341	0.089	4	1.32E-04	0.010
66	PCD17	Human	-0.409	0.111	4	2.20E-04	0.014
63	SHSA3	Human	-0.381	0.108	4	4.34E-04	0.023
268	F2RL3	Platelet	-0.337	0.101	4	7.99E-04	0.032
44	EPHB3	Human	-0.160	0.049	5	1.01E-03	0.032
269	BAMBI	Platelet	0.673	0.209	4	1.24E-03	0.032
96	EFNA1	Human	0.339	0.105	4	1.29E-03	0.032
252	JAM3	Platelet	0.288	0.090	4	1.31E-03	0.032
187	BTNL9	Human	-0.258	0.081	3	1.48E-03	0.032
28	PCP	Mouse	0.285	0.094	4	2.37E-03	0.047
261	TMED4	Platelet	-0.704	0.237	4	2.93E-03	0.050
126	ECSCR	Human	0.247	0.083	4	3.11E-03	0.050
271	fam171a1	Platelet	-0.404	0.137	4	3.24E-03	0.050
195	PTPRJ	Platelet	-0.195	0.067	4	3.39E-03	0.050
216	ALB	Platelet	-0.232	0.080	4	3.63E-03	0.050
71	CATL2	Human	-0.323	0.111	4	3.64E-03	0.050
197	TMED2	Platelet	-0.192	0.068	4	4.50E-03	0.057
97	ZP3	Human	0.293	0.104	4	4.99E-03	0.060
225	GP1BBm	Platelet	0.216	0.078	4	5.56E-03	0.062
212	SRGN	Platelet	0.198	0.071	4	5.66E-03	0.062
247	ENDOD	Platelet	-0.248	0.092	4	7.30E-03	0.077
23	SBSN	Mouse	0.196	0.075	4	9.05E-03	0.086
273	foer	Platelet	-0.365	0.140	4	9.11E-03	0.086
121	IL18R	Human	0.206	0.079	4	9.33E-03	0.086
167	LYVE1	Human	0.199	0.077	4	0.010	0.086
110	PAR2	Human	0.227	0.089	4	0.011	0.092
81	HEP2	Human	0.229	0.090	4	0.011	0.092
51	IBP7	Human	-0.130	0.052	4	0.012	0.099
257	SEMA4	Platelet	-0.252	0.102	4	0.014	0.106
148	SEM6B	Human	-0.192	0.078	4	0.014	0.106
166	LIPE	Human	-0.182	0.075	3	0.015	0.114
156	FPRP	Human	-0.184	0.077	4	0.016	0.119
80	EDN1	Human	0.217	0.091	4	0.017	0.120
203	MET	Platelet	-0.169	0.072	4	0.019	0.137
120	SEM3F	Human	0.182	0.079	4	0.022	0.147
57	MRC2	Human	-0.096	0.042	4	0.022	0.147
67	ANGP2	Human	-0.253	0.112	4	0.024	0.151
229	CD20	Platelet	-0.179	0.079	4	0.024	0.151
233	CD55	Platelet	-0.226	0.102	2	0.026	0.161
95	TNR1B	Human	0.234	0.107	4	0.029	0.169
224	GP1BAm	Platelet	0.170	0.079	4	0.031	0.181
88	TFPI1	Human	0.230	0.108	4	0.033	0.187
154	ESM1	Human	0.155	0.073	3	0.034	0.187
61	ROBO1	Human	0.089	0.043	4	0.038	0.201
286	SERPINE1	Platelet	0.288	0.140	4	0.039	0.201
98	GALA	Human	0.221	0.107	4	0.039	0.201
184	PD1L2	Human	0.167	0.081	3	0.040	0.201
249	ESAM	Platelet	0.468	0.228	4	0.040	0.201
19	ISLR	Mouse	-0.159	0.078	4	0.042	0.203
279	TTMP	Platelet	0.284	0.140	4	0.043	0.203
123	CALRL	Human	0.162	0.080	4	0.044	0.203
177	LAG3	Human	0.161	0.080	3	0.044	0.203
68	MPZL2	Human	-0.223	0.111	4	0.044	0.203
201	F2RL2	Platelet	0.137	0.068	4	0.046	0.206
111	CCL23	Human	0.180	0.091	4	0.047	0.209
231	CD47	Platelet	0.193	0.099	7	0.050	0.221
284	PDIA4	Platelet	-0.286	0.150	4	0.056	0.239
87	TACD2	Human	0.208	0.109	4	0.056	0.239
128	SHSA2	Human	0.162	0.086	4	0.060	0.249
182	CD28	Human	0.156	0.083	3	0.061	0.250
198	VIPR1	Platelet	-0.124	0.069	4	0.070	0.276
242	CD34	Platelet	-0.431	0.238	4	0.070	0.276
147	SEM6C	Human	-0.142	0.079	4	0.070	0.276
206	CTGF	Platelet	0.129	0.071	4	0.071	0.276
34	CADH2	Mouse	0.163	0.092	4	0.077	0.295
72	PLXA2	Human	-0.193	0.110	4	0.079	0.300
274	LMAN2	Platelet	0.225	0.133	4	0.092	0.341
46	EPHB2	Human	-0.082	0.049	5	0.093	0.341
114	TIE2	Human	-0.153	0.091	4	0.094	0.341
283	P4HB	Platelet	-0.246	0.148	4	0.098	0.351
115	HYAL1	Human	-0.131	0.080	4	0.103	0.366
5	PTN	Mouse	-0.159	0.098	4	0.106	0.369
189	TIGIT	Human	-0.136	0.085	3	0.108	0.369
256	QSOX1	Platelet	-0.164	0.104	4	0.116	0.373
94	TCO2	Human	-0.133	0.084	3	0.116	0.373
223	PDPN	Platelet	-0.121	0.077	4	0.116	0.373
219	ITIH4	Platelet	-0.123	0.079	4	0.119	0.373
75	UROK	Human	-0.174	0.112	4	0.119	0.373
282	NID1	Platelet	-0.217	0.140	4	0.121	0.373
78	APOE	Human	-0.145	0.094	4	0.122	0.373
248	EPHB1	Platelet	-0.360	0.235	4	0.125	0.379
173	CNTP5	Human	-0.133	0.088	4	0.134	0.403
18	SPI2	Mouse	-0.116	0.078	4	0.137	0.409

recTMP ID	GENE	Analysis	Estimate	S.E.	Count	p-value	Adjusted p-value
192	KIAA	Platelet	-0.123	0.084	4	0.140	0.411
208	PDIA5	Platelet	0.107	0.073	4	0.143	0.414
21	CADH4	Mouse	0.111	0.076	4	0.144	0.414
205	CD36	Platelet	-0.102	0.071	4	0.151	0.426
35	PORIM	Human	0.069	0.049	5	0.162	0.449
217	APOH	Platelet	0.111	0.080	4	0.166	0.455
99	PTPRB	Human	0.149	0.109	4	0.171	0.459
172	NRG1	Human	-0.121	0.089	4	0.174	0.459
70	RAMP2	Human	-0.150	0.111	4	0.175	0.459
144	RSPO3	Human	-0.102	0.076	3	0.176	0.459
199	DLK1	Platelet	-0.192	0.142	4	0.177	0.459
211	SPARC	Platelet	0.099	0.073	4	0.180	0.459
196	PVRL2	Platelet	-0.093	0.069	4	0.180	0.459
188	CRTAM	Human	-0.111	0.084	3	0.186	0.464
264	TREML	Platelet	-0.139	0.105	4	0.187	0.464
31	CDSN	Mouse	-0.129	0.099	4	0.194	0.466
185	BTN1A1	Human	0.108	0.083	3	0.194	0.466
278	SLC3A2	Platelet	-0.177	0.137	4	0.195	0.466
112	SRPX	Human	0.104	0.081	3	0.199	0.468
146	FXYD6	Human	0.112	0.087	4	0.200	0.468
245	CD59	Platelet	-0.302	0.236	4	0.200	0.468
65	PODXL	Human	-0.142	0.112	4	0.203	0.473
174	T132C	Human	-0.112	0.089	4	0.209	0.480
92	EGLN	Human	0.138	0.110	4	0.212	0.483
13	SDF1	Mouse	-0.099	0.080	4	0.215	0.485
25	ROBO4	Mouse	0.095	0.079	4	0.225	0.505
7	EST5A	Mouse	-0.119	0.100	4	0.231	0.510
107	PLGF	Human	-0.110	0.093	4	0.238	0.518
26	FGRL1	Mouse	0.108	0.096	4	0.257	0.552
29	CLCF1	Mouse	0.159	0.141	3	0.257	0.552
86	MMP10	Human	-0.105	0.094	4	0.262	0.552
241	CALCR	Platelet	-0.108	0.097	4	0.264	0.552
162	EPCR	Human	0.085	0.077	4	0.268	0.552
204	SORT1	Platelet	-0.080	0.073	4	0.270	0.552
20	TM9S	Mouse	0.086	0.078	4	0.270	0.552
230	BSG	Platelet	-0.104	0.095	4	0.272	0.552
228	TFRC	Platelet	-0.085	0.079	4	0.281	0.552
45	EPHA6	Human	-0.054	0.050	5	0.282	0.552
186	BT3A3	Human	0.090	0.083	3	0.282	0.552
180	TNR18	Human	-0.096	0.089	4	0.282	0.552
285	PF4V1	Platelet	-0.162	0.151	4	0.284	0.552
54	GSLG1	Human	-0.048	0.045	4	0.286	0.552
254	PRNP	Platelet	0.105	0.099	4	0.287	0.552
270	DCBLD2	Platelet	0.246	0.233	4	0.290	0.556
9	LG3BP	Mouse	-0.147	0.140	3	0.295	0.562
155	CECR1	Human	-0.082	0.079	4	0.297	0.562
53	C99L2	Human	-0.046	0.045	4	0.304	0.569
1	IL1RA	Mouse	0.095	0.094	4	0.311	0.578
165	PLXD1	Human	-0.075	0.075	3	0.319	0.583
226	GP1Bab	Platelet	0.078	0.082	4	0.338	0.613
37	FKB11	Human	-0.047	0.050	5	0.342	0.613
158	PCOC2	Human	0.071	0.075	3	0.344	0.613
136	SFRP1	Human	-0.083	0.088	4	0.346	0.613
207	PDIA3	Platelet	-0.067	0.071	4	0.347	0.613
62	ROBO2	Human	0.041	0.045	4	0.358	0.628
130	CLC14	Human	-0.081	0.088	4	0.360	0.629
56	CD248	Human	-0.041	0.045	4	0.368	0.632
176	PD1L1	Human	0.079	0.089	4	0.371	0.633
103	TIE1	Human	-0.084	0.094	4	0.372	0.633
262	TMED9	Platelet	-0.210	0.238	4	0.378	0.637
100	PTPRE	Human	0.097	0.110	4	0.381	0.637
215	AHSG	Platelet	0.071	0.081	4	0.384	0.637
43	EPHA7	Human	-0.044	0.050	5	0.385	0.637
193	NRXN	Platelet	0.062	0.071	4	0.389	0.640
178	CTLA4	Human	0.075	0.088	4	0.394	0.645
255	PTTG	Platelet	0.089	0.105	4	0.400	0.651
113	ILRL1	Human	-0.077	0.092	4	0.405	0.656
243	CD40	Platelet	-0.078	0.095	4	0.412	0.661
240	APLP2	Platelet	-0.076	0.096	4	0.424	0.672
210	SERPINC1	Platelet	-0.059	0.075	4	0.427	0.672
52	VASN	Human	0.035	0.044	4	0.427	0.672
79	CFAI	Human	-0.073	0.092	4	0.429	0.672
12	CYTC	Mouse	0.062	0.079	4	0.435	0.678
168	BACE2	Human	0.059	0.076	3	0.438	0.678
171	APOD	Human	0.065	0.084	4	0.442	0.681
161	APEL	Human	-0.057	0.076	4	0.451	0.693
141	CLCC1	Human	-0.066	0.088	4	0.454	0.693
218	C12	Platelet	0.060	0.081	4	0.460	0.697
127	F174B	Human	0.064	0.088	4	0.464	0.697
82	TRBM	Human	0.068	0.093	4	0.466	0.697
59	LOXL2	Human	-0.031	0.044	4	0.472	0.704
253	LAMP1	Platelet	0.047	0.070	7	0.499	0.737
153	C1QR1	Human	-0.052	0.079	4	0.508	0.746
163	LAMP3	Human	0.051	0.078	4	0.514	0.749
30	ECM1	Mouse	0.064	0.099	4	0.514	0.749
267	F2R	Platelet	0.067	0.104	4	0.518	0.751

recTMP ID	GENE	Analysis	Estimate	S.E.	Count	p-value	Adjusted p-value
238	ACVR1	Platelet	0.061	0.096	4	0.525	0.757
209	PPBP	Platelet	0.047	0.074	4	0.530	0.762
41	EPHA2	Human	-0.031	0.050	5	0.539	0.770
251	FCGR2a	Platelet	-0.059	0.097	4	0.542	0.770
16	EST1	Mouse	-0.048	0.079	4	0.544	0.770
58	CATZ	Human	0.027	0.044	4	0.546	0.770
3	ARSB	Mouse	0.059	0.099	4	0.555	0.774
93	IBP2	Human	-0.051	0.087	4	0.558	0.774
164	JAG2	Human	-0.044	0.076	3	0.560	0.774
235	CD84	Platelet	-0.057	0.099	4	0.566	0.774
236	DAG1	Platelet	0.056	0.098	4	0.566	0.774
169	GPR56	Human	0.043	0.076	3	0.569	0.774
74	GABR2	Human	-0.063	0.111	4	0.571	0.774
137	NRCAM	Human	0.049	0.087	4	0.575	0.774
227	FCER2	Platelet	-0.046	0.081	4	0.575	0.774
135	GP116	Human	-0.049	0.088	4	0.576	0.774
143	C1QT5	Human	0.041	0.074	3	0.580	0.776
190	PECAM1	Platelet	0.053	0.096	4	0.582	0.776
22	ITIH3	Mouse	-0.043	0.080	4	0.594	0.789
181	ICOS	Human	0.043	0.082	3	0.597	0.789
281	GSN	Platelet	0.069	0.138	4	0.618	0.813
191	IL6ST	Platelet	-0.048	0.097	4	0.622	0.813
32	FBLN2	Mouse	-0.069	0.143	3	0.628	0.814
250	F11R	Platelet	-0.047	0.097	4	0.628	0.814
60	GPC6	Human	0.021	0.044	4	0.631	0.814
49	TPBG	Human	0.024	0.050	5	0.635	0.816
117	MERTK	Human	0.038	0.080	4	0.639	0.817
104	ACVL1	Human	0.043	0.092	4	0.643	0.819
220	SERPINA	Platelet	-0.033	0.075	4	0.657	0.833
138	TNR14	Human	-0.038	0.088	4	0.671	0.843
277	NSG1	Platelet	-0.059	0.141	4	0.673	0.843
55	TINAL	Human	0.018	0.044	4	0.677	0.843
246	EFNB1	Platelet	-0.042	0.101	7	0.678	0.843
47	UFO	Human	0.020	0.049	5	0.693	0.856
170	ENPP4	Human	0.030	0.076	3	0.694	0.856
222	SMR3B	Platelet	-0.028	0.074	4	0.702	0.858
122	SEM3A	Human	-0.031	0.081	4	0.705	0.858
118	HYAL2	Human	0.027	0.080	4	0.737	0.890
272	CYYR1	Platelet	0.048	0.143	4	0.738	0.890
8	X3CL1	Mouse	-0.032	0.099	4	0.745	0.895
214	TTR	Platelet	-0.026	0.080	4	0.748	0.895
259	STIM1	Platelet	-0.073	0.236	4	0.759	0.901
263	TMEM	Platelet	-0.032	0.105	4	0.762	0.901
258	SPN	Platelet	-0.032	0.104	4	0.762	0.901
84	MGP	Human	0.028	0.093	4	0.764	0.901
221	APP	Platelet	0.028	0.094	4	0.768	0.903
152	PCD12	Human	-0.022	0.075	3	0.773	0.903
280	ARMET	Platelet	0.041	0.142	4	0.774	0.903
119	I15RA	Human	0.023	0.081	4	0.782	0.908
276	MTDH	Platelet	-0.038	0.142	4	0.790	0.915
265	ULBP3	Platelet	-0.025	0.105	4	0.813	0.937
108	CATC	Human	-0.019	0.085	3	0.819	0.941
124	CCL14	Human	-0.017	0.081	4	0.833	0.953
89	KIT	Human	-0.023	0.112	4	0.840	0.955
85	MMP7	Human	0.018	0.094	4	0.845	0.955
101	ACHA5	Human	-0.018	0.092	4	0.846	0.955
27	GLIP1	Mouse	0.018	0.097	4	0.850	0.956
77	PDGFB	Human	-0.017	0.093	4	0.858	0.956
83	PROS	Human	0.017	0.093	4	0.858	0.956
260	TM9	Platelet	0.018	0.104	4	0.862	0.956
234	CD226	Platelet	0.017	0.097	4	0.865	0.956
91	CBPE	Human	-0.015	0.088	4	0.865	0.956
200	SELP	Platelet	-0.016	0.099	4	0.873	0.958
149	MANS1	Human	0.012	0.078	4	0.873	0.958
4	ANPRC	Mouse	0.014	0.100	4	0.886	0.966
275	LRRC59	Platelet	0.020	0.143	4	0.889	0.966
102	CADH5	Human	0.013	0.094	4	0.890	0.966
50	NID2	Human	0.006	0.050	5	0.906	0.966
48	GPC1	Human	0.006	0.050	5	0.911	0.966
151	ELTD1	Human	-0.008	0.075	3	0.915	0.966
105	MUC18	Human	-0.010	0.094	4	0.918	0.966
11	HEXB	Mouse	-0.008	0.079	4	0.921	0.966
76	TPA	Human	-0.008	0.093	4	0.928	0.966
175	PDCD1	Human	-0.009	0.098	4	0.929	0.966
237	ICAM2	Platelet	0.008	0.098	4	0.932	0.966
125	CCL15	Human	0.007	0.080	4	0.933	0.966
213	TIMP1	Platelet	0.007	0.083	4	0.935	0.966
129	TARSH	Human	-0.007	0.086	4	0.936	0.966
194	PTPRC	Platelet	-0.005	0.072	4	0.943	0.968
109	EPHB4	Human	-0.006	0.093	4	0.947	0.968
33	GHR	Mouse	-0.006	0.100	4	0.951	0.968
17	CSPG4	Mouse	-0.005	0.080	4	0.953	0.968
159	MUCEN	Human	0.004	0.074	3	0.957	0.970
42	EPHA4	Human	0.002	0.049	5	0.968	0.974
244	CD58	Platelet	0.003	0.096	4	0.972	0.975
183	TNR9	Human	0.001	0.084	3	0.987	0.987

Supplementary table 5.

recTMP ID	GENE	Analysis	Estimate	S.E.	Count	p-value	Adjusted p-value
184	PD1L2	Human	0.243	0.030	4	5.33E-16	1.72E-13
185	BTN1A1	Human	0.239	0.030	4	1.25E-15	2.02E-13
186	BT3A3	Human	0.217	0.030	4	7.97E-13	8.58E-11
189	TIGIT	Human	-0.352	0.062	4	1.37E-08	6.48E-07
276	MTDH	Platelet	-0.200	0.035	4	1.40E-08	6.48E-07
183	TNR9	Human	-0.139	0.034	4	5.28E-05	1.70E-03
265	ULBP3	Platelet	0.109	0.030	7	2.47E-04	6.64E-03
115	HYAL1	Human	0.202	0.057	4	3.66E-04	9.10E-03
94	TCO2	Human	-0.256	0.073	4	4.23E-04	0.010
148	SEM6B	Human	0.156	0.046	4	6.85E-04	0.015
182	CD28	Human	0.104	0.032	4	1.04E-03	0.021
130	CLC14	Human	-0.150	0.046	4	1.10E-03	0.021
224	GP1BAm	Platelet	0.177	0.061	4	3.66E-03	0.059
99	PTPRB	Human	0.133	0.046	4	3.81E-03	0.059
219	ITIH4	Platelet	0.177	0.065	4	6.36E-03	0.089
210	SERPINC1	Platelet	0.165	0.066	4	0.013	0.175
35	PORIM	Human	0.144	0.059	4	0.015	0.182
196	PVRL2	Platelet	-0.122	0.051	4	0.016	0.182
175	PDCD1	Human	0.124	0.052	4	0.016	0.182
57	MRC2	Human	0.123	0.051	4	0.016	0.182
195	PTPRJ	Platelet	0.113	0.047	4	0.017	0.182
164	JAG2	Human	-0.173	0.073	3	0.017	0.182
214	TTR	Platelet	0.142	0.060	4	0.017	0.182
146	FXYD6	Human	-0.109	0.047	4	0.020	0.203
169	MUCEN	Human	0.150	0.066	4	0.022	0.212
206	CTGF	Platelet	-0.113	0.050	4	0.024	0.212
110	PAR2	Human	0.113	0.050	4	0.025	0.212
31	CDSN	Mouse	-0.170	0.076	4	0.025	0.212
230	BSG	Platelet	0.223	0.100	3	0.026	0.212
79	CFAI	Human	-0.107	0.048	4	0.026	0.212
4	ANPRC	Mouse	-0.075	0.035	4	0.032	0.244
50	NID2	Human	0.125	0.058	4	0.032	0.244
5	PTN	Mouse	-0.164	0.077	4	0.033	0.244
135	GP116	Human	0.093	0.044	4	0.035	0.248
168	BACE2	Human	-0.146	0.070	4	0.038	0.267
108	CATC	Human	0.159	0.078	4	0.041	0.270
162	EPCR	Human	-0.099	0.048	4	0.042	0.270
262	TMED9	Platelet	-0.191	0.094	4	0.042	0.270
235	CD84	Platelet	0.124	0.063	4	0.047	0.293
247	ENDOD	Platelet	0.168	0.085	5	0.049	0.296
152	PCD12	Human	0.134	0.069	4	0.053	0.315
218	C12	Platelet	0.128	0.067	4	0.056	0.332
119	I15RA	Human	0.110	0.059	4	0.060	0.339
284	PDIA4	Platelet	-0.176	0.094	4	0.061	0.339
112	SRPX	Human	0.144	0.078	4	0.066	0.360
176	PD1L1	Human	-0.101	0.055	4	0.067	0.361
171	APOD	Human	-0.090	0.049	4	0.068	0.361
173	CNTP5	Human	-0.098	0.054	4	0.070	0.363
86	MMP10	Human	-0.089	0.049	4	0.072	0.368
137	NRCAM	Human	0.080	0.045	4	0.075	0.376
12	CYTC	Mouse	-0.150	0.084	4	0.076	0.376
255	PTTG	Platelet	-0.153	0.087	5	0.079	0.387
125	CCL15	Human	-0.103	0.059	4	0.082	0.395
58	CATZ	Human	-0.089	0.052	4	0.085	0.404
209	PPBP	Platelet	-0.118	0.069	4	0.087	0.404
121	IL18R	Human	-0.101	0.059	4	0.087	0.404
60	GPC6	Human	0.086	0.051	4	0.091	0.408
18	SPI2	Mouse	0.140	0.083	4	0.092	0.408
172	NRG1	Human	0.088	0.052	4	0.092	0.408
166	LIPE	Human	-0.113	0.071	4	0.111	0.480
55	TINAL	Human	-0.082	0.052	4	0.116	0.480
88	TFPI1	Human	-0.075	0.048	4	0.117	0.480
98	GALA	Human	-0.076	0.049	4	0.117	0.480
223	PDPN	Platelet	-0.111	0.071	4	0.119	0.481
201	F2RL2	Platelet	-0.078	0.050	4	0.121	0.482
237	ICAM2	Platelet	0.131	0.085	5	0.123	0.482
211	SPARC	Platelet	0.104	0.068	4	0.124	0.482
20	TM9S	Mouse	0.127	0.084	4	0.131	0.482
226	GP1Bab	Platelet	0.105	0.070	4	0.131	0.482
275	LRRC59	Platelet	-0.139	0.094	4	0.137	0.493
165	PLXD1	Human	-0.108	0.074	3	0.145	0.508
252	JAM3	Platelet	0.151	0.104	3	0.147	0.508
222	SMR3B	Platelet	-0.103	0.071	4	0.148	0.508
283	P4HB	Platelet	-0.135	0.094	4	0.149	0.508
233	CD55	Platelet	-0.091	0.063	4	0.152	0.510
63	SHSA3	Human	-0.068	0.048	4	0.154	0.510
174	T132C	Human	0.078	0.055	4	0.155	0.510
269	BAMBI	Platelet	-0.132	0.093	4	0.157	0.511
23	SBSN	Mouse	0.124	0.088	4	0.158	0.511
45	EPHA6	Human	0.082	0.058	4	0.161	0.516
198	VIPR1	Platelet	0.069	0.050	4	0.165	0.519
155	CECR1	Human	0.066	0.048	4	0.172	0.535
27	GLIP1	Mouse	0.096	0.071	4	0.175	0.537
92	EGLN	Human	0.065	0.048	4	0.178	0.537
205	CD36	Platelet	0.066	0.049	4	0.178	0.537
51	IBP7	Human	-0.069	0.053	4	0.190	0.553
77	PDGFB	Human	-0.065	0.050	4	0.192	0.553
281	GSN	Platelet	0.108	0.084	5	0.198	0.553
26	FGRL1	Mouse	-0.090	0.070	4	0.199	0.553
249	ESAM	Platelet	-0.112	0.087	5	0.199	0.553
96	EFNA1	Human	-0.063	0.049	4	0.203	0.560
59	LOXL2	Human	0.066	0.053	4	0.211	0.572
53	C99L2	Human	0.066	0.053	4	0.212	0.572
16	EST1	Mouse	0.106	0.085	4	0.213	0.572
272	CYYR1	Platelet	-0.115	0.094	4	0.219	0.575
254	PRNP	Platelet	-0.107	0.087	5	0.220	0.575
154	ESM1	Human	0.086	0.070	4	0.221	0.575
54	GSLG1	Human	-0.064	0.052	4	0.224	0.575
221	APP	Platelet	0.076	0.063	4	0.225	0.575
236	DAG1	Platelet	0.075	0.063	4	0.229	0.575
259	STIM1	Platelet	0.103	0.086	5	0.230	0.575
203	MET	Platelet	0.060	0.050	4	0.230	0.575
261	TMED4	Platelet	-0.111	0.094	4	0.234	0.582
190	PECAM1	Platelet	0.074	0.063	4	0.242	0.588
251	FCGR2a	Platelet	-0.100	0.085	5	0.244	0.589
71	CATL2	Human	-0.055	0.048	4	0.258	0.595
8	X3CL1	Mouse	0.080	0.070	4	0.259	0.595
238	ACVR1	Platelet	-0.070	0.062	7	0.259	0.595
114	TIE2	Human	0.058	0.052	4	0.260	0.595
127	F174B	Human	0.051	0.045	4	0.260	0.595
123	CALRL	Human	-0.067	0.060	4	0.260	0.595
244	CD58	Platelet	-0.097	0.086	5	0.262	0.595
138	TNR14	Human	0.050	0.046	4	0.279	0.621
1	IL1RA	Mouse	0.157	0.146	3	0.280	0.621
286	SERPINE1	Platelet	-0.100	0.093	4	0.284	0.624
243	CD40	Platelet	0.091	0.086	5	0.289	0.627
44	EPHB3	Human	-0.064	0.061	4	0.290	0.627
229	CD20	Platelet	0.075	0.071	4	0.291	0.627
80	EDN1	Human	-0.051	0.049	4	0.295	0.631
95	TNR1B	Human	-0.051	0.049	4	0.299	0.635
84	MGP	Human	0.050	0.048	4	0.304	0.640
3	ARSB	Mouse	-0.083	0.081	3	0.307	0.640
267	F2R	Platelet	-0.096	0.094	4	0.307	0.640
215	AHSG	Platelet	0.069	0.068	4	0.312	0.645
41	EPHA2	Human	-0.062	0.061	4	0.315	0.645
282	NID1	Platelet	-0.094	0.094	4	0.316	0.645
47	UFO	Human	-0.061	0.061	4	0.322	0.654
239	ACVR1B	Platelet	0.084	0.086	5	0.325	0.657
78	APOE	Human	0.047	0.048	4	0.329	0.660
87	TACD2	Human	0.046	0.047	4	0.332	0.662
61	ROBO1	Human	-0.051	0.053	4	0.335	0.664
52	VASN	Human	0.049	0.052	4	0.347	0.684
188	CRTAM	Human	0.053	0.059	5	0.361	0.707
204	SORT1	Platelet	-0.046	0.051	4	0.364	0.707
43	EPHA7	Human	-0.055	0.061	4	0.365	0.707
70	RAMP2	Human	-0.043	0.048	4	0.368	0.708
180	TNR18	Human	-0.049	0.055	4	0.374	0.713
220	SERPINA	Platelet	0.063	0.071	4	0.378	0.713
129	TARSH	Human	0.042	0.047	4	0.378	0.713
34	CADH2	Mouse	-0.077	0.087	4	0.381	0.713
11	HEXB	Mouse	-0.075	0.086	4	0.383	0.713
279	TTMP	Platelet	-0.081	0.093	4	0.384	0.713
170	ENPP4	Human	-0.060	0.071	4	0.399	0.735
234	CD226	Platelet	0.054	0.064	4	0.400	0.735
100	PTPRE	Human	0.039	0.047	4	0.409	0.747
264	TREML	Platelet	-0.077	0.094	4	0.415	0.749
151	ELTD1	Human	-0.056	0.069	4	0.420	0.749
97	ZP3	Human	-0.039	0.048	4	0.423	0.751
167	LYVE1	Human	0.039	0.050	4	0.431	0.759
74	GABR2	Human	0.038	0.048	4	0.432	0.759
103	TIE1	Human	0.038	0.050	4	0.440	0.768
245	CD59	Platelet	-0.083	0.108	3	0.444	0.771
7	EST5A	Mouse	-0.052	0.071	4	0.463	0.799
19	ISLR	Mouse	0.063	0.088	4	0.473	0.804
72	PLXA2	Human	-0.033	0.047	4	0.483	0.811
122	SEM3A	Human	-0.042	0.060	4	0.488	0.811
32	FBLN2	Mouse	-0.058	0.084	4	0.490	0.811
113	ILRL1	Human	-0.036	0.053	4	0.491	0.811
178	CTLA4	Human	-0.038	0.055	4	0.492	0.811
107	PLGF	Human	0.036	0.053	4	0.496	0.812
225	GP1BBm	Platelet	-0.043	0.063	4	0.498	0.812
258	SPN	Platelet	0.058	0.086	5	0.503	0.816
76	TPA	Human	0.032	0.048	4	0.506	0.817
141	CLCC1	Human	0.030	0.048	4	0.525	0.843
177	LAG3	Human	-0.050	0.079	4	0.527	0.843
28	PCP	Mouse	-0.044	0.071	4	0.533	0.847
253	LAMP1	Platelet	-0.054	0.087	5	0.537	0.851
83	PROS	Human	-0.030	0.049	4	0.544	0.851
194	PTPRC	Platelet	-0.039	0.064	4	0.546	0.851
260	TM9	Platelet	-0.052	0.086	5	0.550	0.851
42	EPHA4	Human	0.036	0.061	4	0.550	0.851
124	CCL14	Human	0.036	0.060	4	0.550	0.851
158	PCOC2	Human	0.042	0.070	4	0.555	0.854
120	SEM3F	Human	-0.034	0.059	4	0.560	0.857
109	EPHB4	Human	-0.030	0.052	4	0.563	0.858
68	MPZL2	Human	-0.028	0.048	4	0.566	0.858
231	CD47	Platelet	0.034	0.063	4	0.596	0.889
144	RSPO3	Human	-0.037	0.069	4	0.598	0.889
193	NRXN	Platelet	-0.032	0.062	4	0.602	0.889
268	F2RL3	Platelet	0.045	0.086	5	0.602	0.889
30	ECM1	Mouse	-0.040	0.078	4	0.604	0.889
89	KIT	Human	0.025	0.048	4	0.606	0.889
75	UROK	Human	0.025	0.049	4	0.612	0.890
197	TMED2	Platelet	-0.025	0.050	4	0.618	0.894
280	ARMET	Platelet	-0.046	0.093	4	0.620	0.894
29	CLCF1	Mouse	-0.064	0.131	3	0.623	0.894
13	SDF1	Mouse	-0.043	0.089	4	0.626	0.895
216	ALB	Platelet	-0.033	0.068	4	0.633	0.900
149	MANS1	Human	0.023	0.049	4	0.642	0.901
46	EPHB2	Human	-0.028	0.061	4	0.644	0.901
169	GPR56	Human	0.032	0.070	4	0.645	0.901
102	CADH5	Human	0.025	0.055	4	0.647	0.901
161	APEL	Human	-0.022	0.050	4	0.663	0.910
257	SEMA4	Platelet	0.037	0.085	5	0.668	0.910
126	ECSCR	Human	0.026	0.060	4	0.670	0.910
82	TRBM	Human	-0.021	0.050	4	0.676	0.913
156	FPRP	Human	-0.021	0.050	4	0.680	0.913
273	foer	Platelet	-0.039	0.094	4	0.681	0.913
56	CD248	Human	0.021	0.053	4	0.693	0.925
117	MERTK	Human	0.022	0.059	4	0.706	0.935
285	PF4V1	Platelet	-0.032	0.087	5	0.715	0.940
277	NSG1	Platelet	0.033	0.092	4	0.722	0.943
128	SHSA2	Human	0.017	0.048	4	0.724	0.943
271	fam171a1	Platelet	0.032	0.091	4	0.729	0.945
111	CCL23	Human	-0.018	0.052	4	0.735	0.945
181	ICOS	Human	-0.026	0.081	4	0.752	0.953
66	PCD17	Human	-0.015	0.048	4	0.759	0.958
241	CALCR	Platelet	-0.025	0.086	5	0.776	0.964
227	FCER2	Platelet	0.019	0.070	4	0.782	0.966
9	LG3BP	Mouse	0.019	0.070	4	0.787	0.966
179	HAVR2	Human	-0.015	0.056	4	0.794	0.972
192	KIAA	Platelet	-0.017	0.065	4	0.798	0.972
200	SELP	Platelet	0.015	0.064	4	0.814	0.975
91	CBPE	Human	0.013	0.055	4	0.817	0.975
217	APOH	Platelet	-0.016	0.068	4	0.819	0.975
65	PODXL	Human	-0.011	0.049	4	0.819	0.975
191	IL6ST	Platelet	0.014	0.064	4	0.822	0.975
81	HEP2	Human	0.011	0.050	4	0.824	0.975
22	ITIH3	Mouse	0.018	0.084	4	0.830	0.978
48	GPC1	Human	-0.013	0.061	4	0.838	0.983
228	TFRC	Platelet	0.014	0.071	4	0.842	0.983
263	TMEM	Platelet	-0.018	0.093	4	0.843	0.983
153	C1QR1	Human	-0.008	0.048	4	0.859	0.988
49	TPBG	Human	0.011	0.061	4	0.860	0.988
212	SRGN	Platelet	0.011	0.069	4	0.873	0.988
207	PDIA3	Platelet	0.010	0.068	4	0.879	0.988
232	G6B	Platelet	0.011	0.071	4	0.879	0.988
270	DCBLD2	Platelet	0.013	0.093	4	0.891	0.988
101	ACHA5	Human	-0.007	0.049	4	0.891	0.988
213	TIMP1	Platelet	0.009	0.068	4	0.893	0.988
143	C1QT5	Human	0.009	0.070	4	0.902	0.988
37	FKB11	Human	-0.007	0.060	4	0.903	0.988
25	ROBO4	Mouse	0.010	0.088	4	0.907	0.988
93	IBP2	Human	-0.006	0.055	4	0.909	0.988
208	PDIA5	Platelet	0.007	0.068	4	0.917	0.988
242	CD34	Platelet	0.009	0.086	5	0.918	0.988
187	BTNL9	Human	0.007	0.069	4	0.919	0.988
17	CSPG4	Mouse	0.009	0.089	4	0.921	0.988
256	QSOX1	Platelet	-0.008	0.087	5	0.923	0.988
104	ACVL1	Human	0.005	0.053	4	0.927	0.988
67	ANGP2	Human	-0.004	0.047	4	0.930	0.988
118	HYAL2	Human	-0.005	0.061	4	0.930	0.988
21	CADH4	Mouse	-0.007	0.086	4	0.938	0.989
147	SEM6C	Human	0.003	0.050	4	0.949	0.989
62	ROBO2	Human	0.003	0.053	4	0.950	0.989
199	DLK1	Platelet	-0.005	0.093	4	0.957	0.989
246	EFNB1	Platelet	0.004	0.086	5	0.961	0.989
250	F11R	Platelet	0.004	0.086	5	0.961	0.989
240	APLP2	Platelet	0.004	0.086	5	0.963	0.989
163	LAMP3	Human	0.002	0.049	4	0.968	0.989
105	MUC18	Human	0.002	0.052	4	0.970	0.989
33	GHR	Mouse	0.005	0.131	3	0.971	0.989
85	MMP7	Human	0.002	0.048	4	0.974	0.990
274	LMAN2	Platelet	-0.002	0.093	4	0.984	0.995
278	SLC3A2	Platelet	0.002	0.093	4	0.985	0.995
136	SFRP1	Human	-0.001	0.048	4	0.992	0.995
248	EPHB1	Platelet	-0.001	0.086	5	0.992	0.995
202	M6PR	Platelet	0.000	0.051	4	0.995	0.995

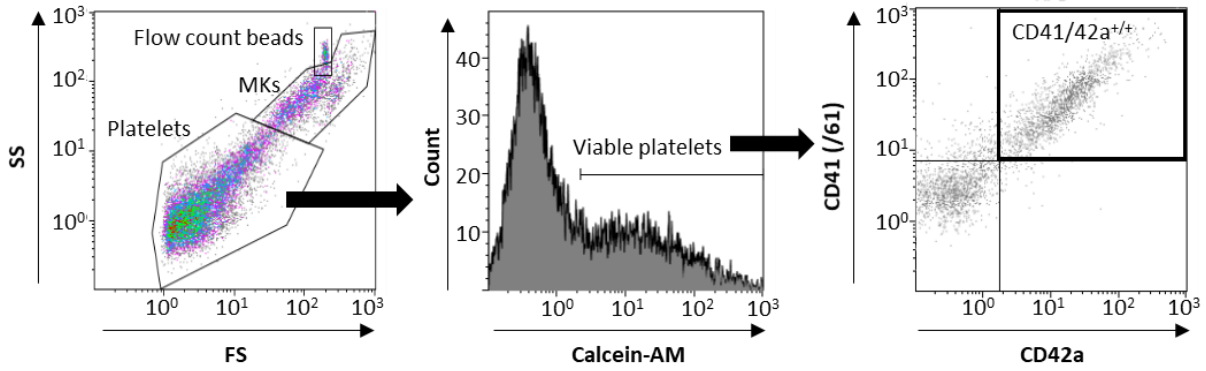
Supplementary Table 6.

Shortlisted proteins

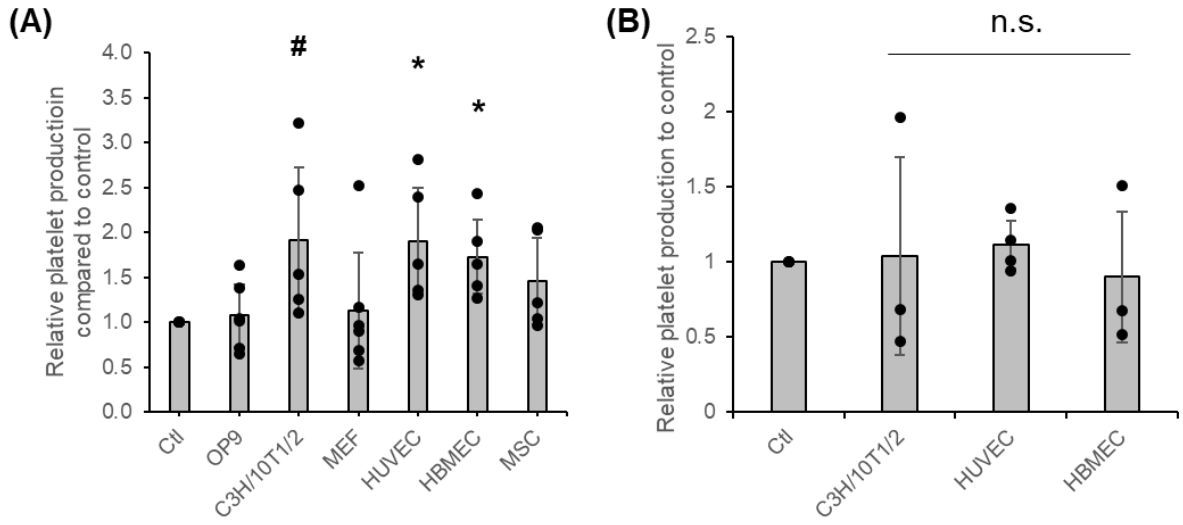
supportive mouse cell line C3H/10T1/2	SBSN									
supportive human cell lines; HUVEC and BMEC	EDN1	CATC	MUCEN	CD28	PD1L2	BTN1A1	BT3A3	CRTAM	PORIM	ACVL1
human platelet ectodomain protein library	M6PR	ACVR1B	G6B	CD47	LAMP1					

Supplementary Figures

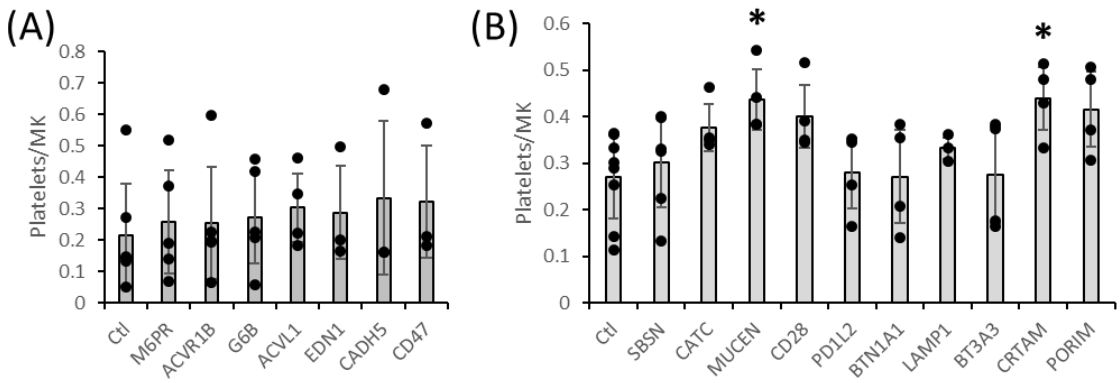
Supplementary Figure 1.



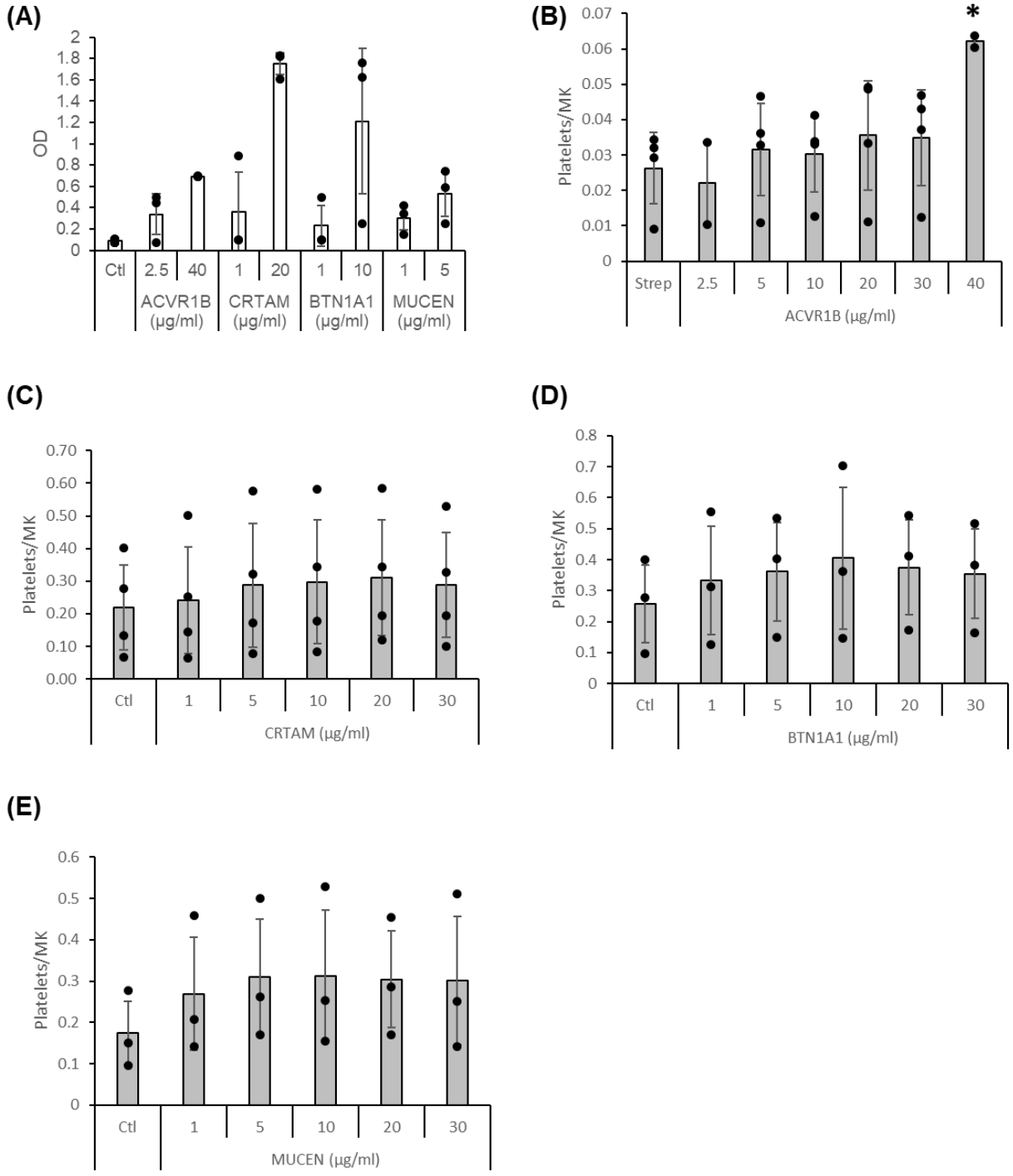
Supplementary Figure 2.



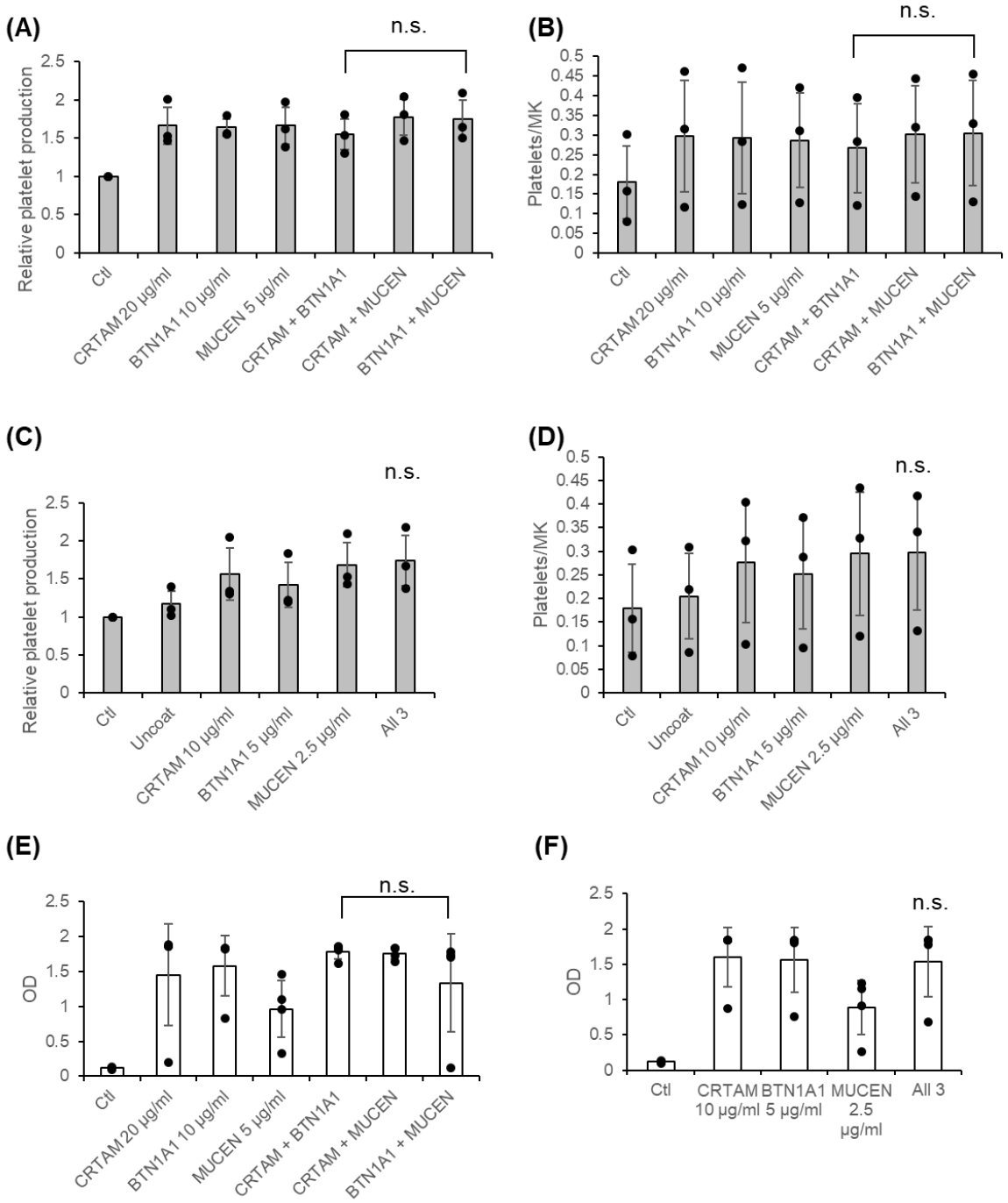
Supplementary Figure 3.



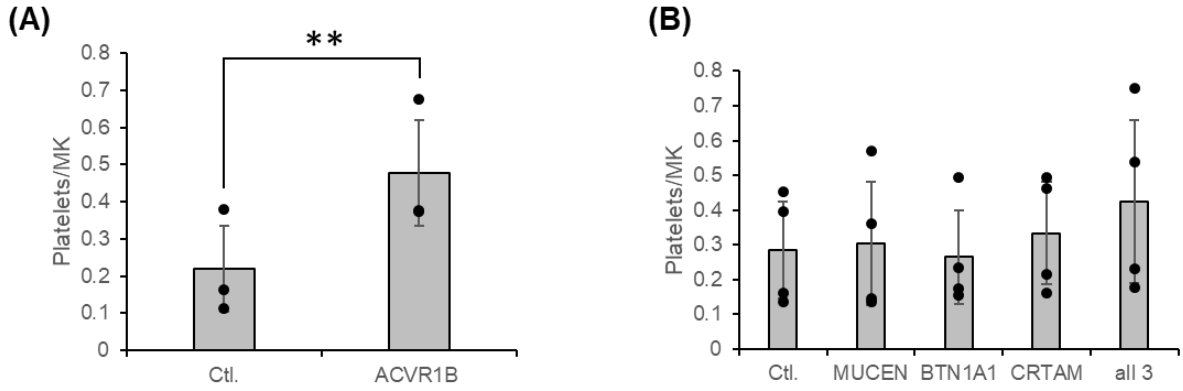
Supplementary Figure 4.



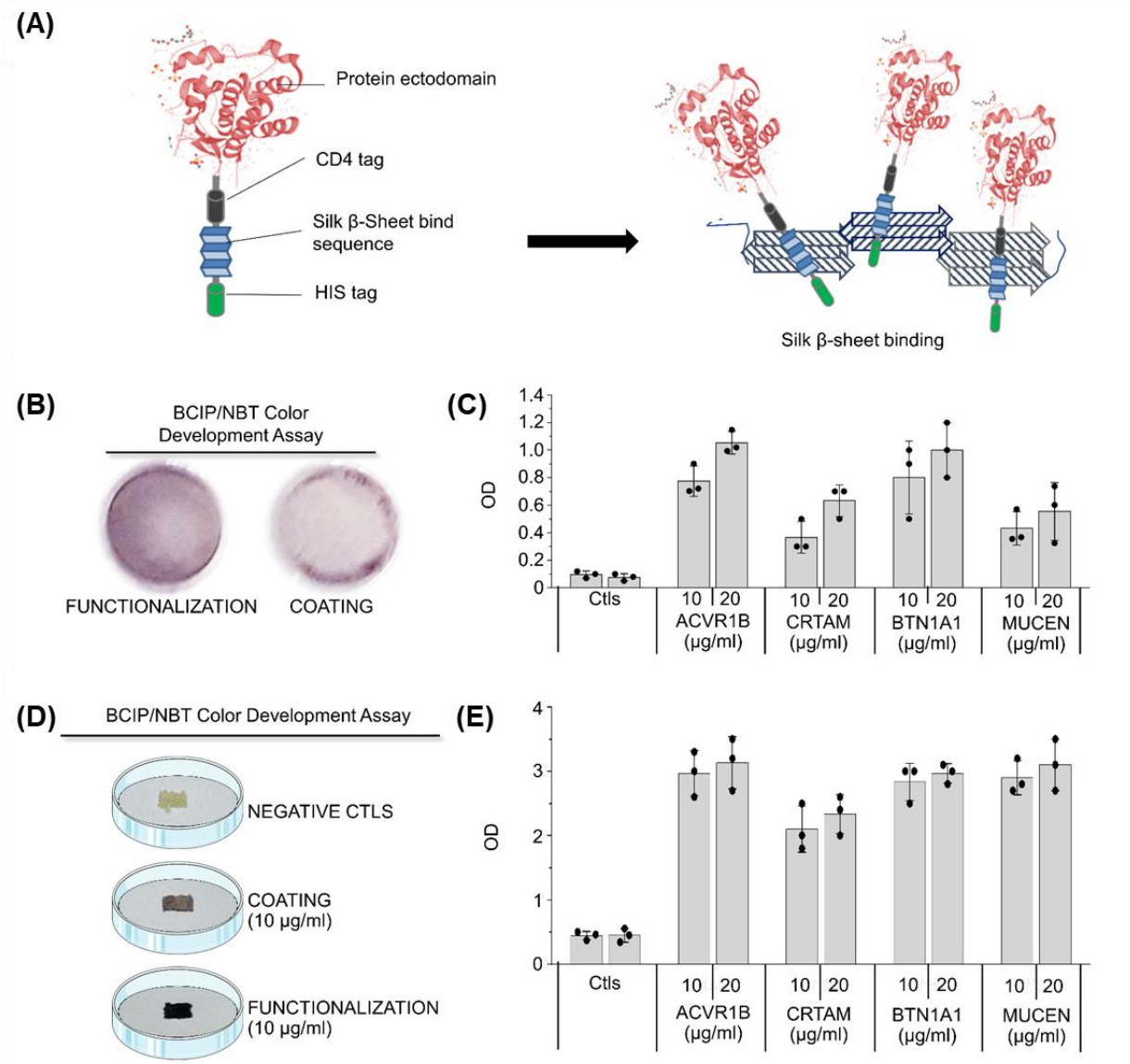
Supplementary Figure 5.



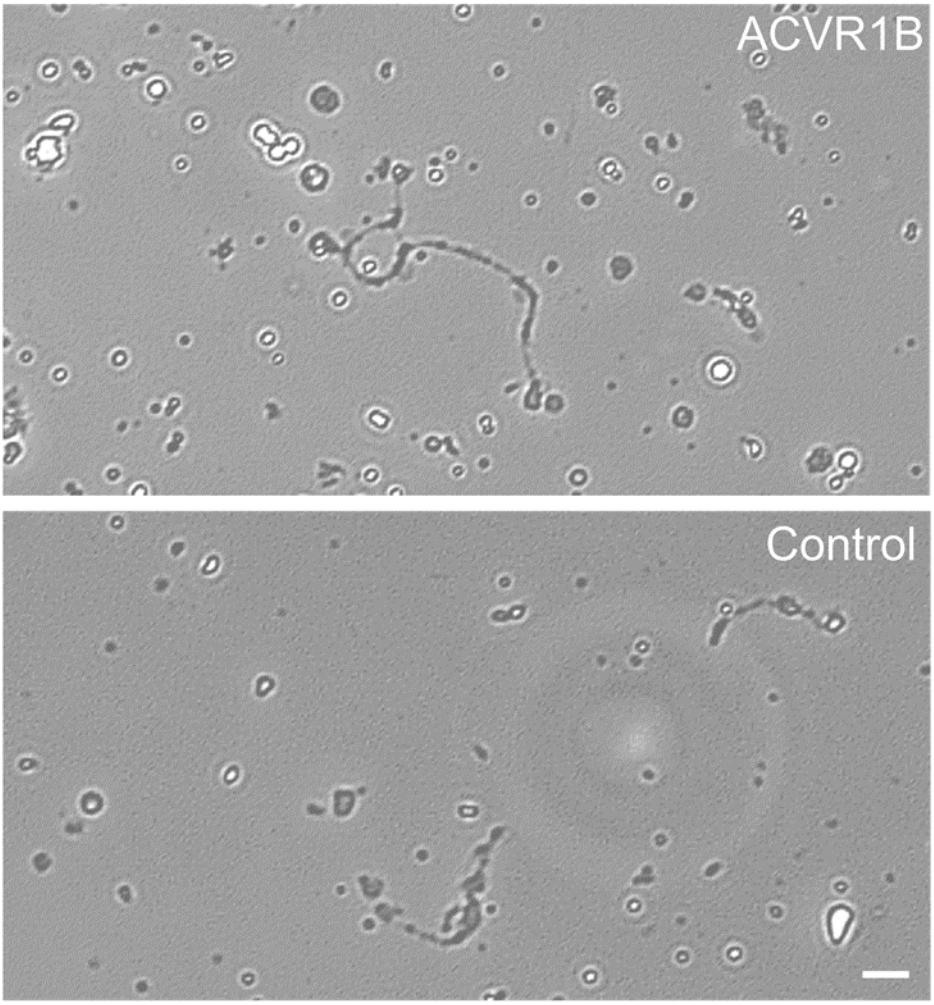
Supplementary Figure 6.



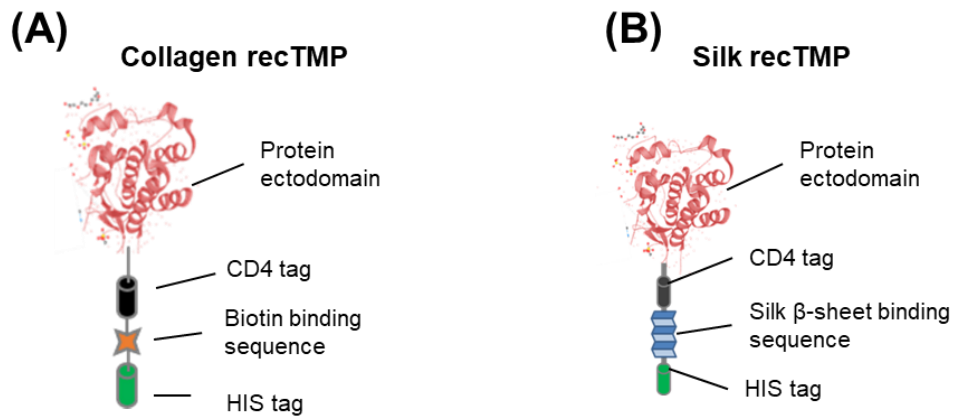
Supplementary Figure 7.



Supplementary Figure 8.



Supplementary Figure 9.



Supplementary Figure 10.