

Differential modulation of adhesion molecule expression by hydroxycarbamide in human endothelial cells from the micro- and macrocirculation: potential implications in sickle cell disease vasoocclusive events

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Online Supplementary Table S1. [SEE ONLINE PDF](#)

Online Supplementary Table S2. Forward and reverse primers designed for RQ-PCR experiments.

Gene	Forward 5'→3'	Reverse 5'→3'	Accession Number
TSP-1	CCACTGCTACTGGGACACCAA	TGTGGTGGAGTTTACAACTTTCCACA	NM003246
vWF	CCCTGGGTTACAAGGAAGAAAAT	AGTGTCATGATCTGTCCTCCTCTTAG	NM000552
PECAM-1	CCACTGAAGACGTGCAATACCA	CTATCACCTTCACCCTCAGAACC	NM000442
CD36	GCAAAATCCACAGGAAGTGATG	GCTAGAAAACGAACTCTGTACGTATAAGG	BC008406
TBP	CACGAACCACGGCACTGATT	TTTTCTTGCTGCCAGTCTGGAC	Y02584

Online Supplementary Table S3. HC modulated genes of the "Adhesion" data sets after 24 h of treatment under basal conditions (Common genes for both 24 and 48 h of treatment are underlined in gray)

PROBE	LOG fold change	Gene_Symbol	Gene_Name
195222	5.87490	ADAM12	ADAM metalloproteinase domain 12 (meltrin alpha)
212524	2.40830	ADAMTS4	ADAM metalloproteinase with thrombospondin type 1 motif, 4
209820	3.42530	CD86	CD86 antigen (CD28 antigen ligand 2, B7-2 antigen)
185528	2.68320	CLDN8	claudin 8
202592	-2.47860	CLEC14A	C-type lectin domain family 14, member A
219504	-2.41560	COL1A1	collagen, type I, alpha 1
113262	-1.52710	COL3A1	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)
111306	-2.55670	COL4A2	collagen, type IV, alpha 2
110570	-1.16300	COL5A1	collagen, type V, alpha 1
190250	-1.40000	CTA-246H3.1	null
200724	-3.19530	DAG1	dystroglycan 1 (dystrophin-associated glycoprotein 1)
162548	-2.49370	EFEMP2	EGF-containing fibulin-like extracellular matrix protein 2
105515	-1.51180	EGFL3	EGF-like-domain, multiple 3
188754	2.13570	FAT4	FAT tumor suppressor homolog 4 (Drosophila)
166297	1.10430	FBLN2	fibulin 2
155212	-2.73110	ICAM2	intercellular adhesion molecule 2
207755	-3.49010	IGFBP4	insulin-like growth factor binding protein 4
164847	3.87130	IGSF11	immunoglobulin superfamily, member 11
160329	-4.10150	ILK	integrin-linked kinase
145228	-3.46970	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
117740	-1.57220	LAMB1	laminin, beta 1
176679	-1.57990	LAMB2	laminin, beta 2 (laminin S)
180055	-2.46000	LAMC1	laminin, gamma 1 (formerly LAMB2)
197253	-3.04600	LEPRE1	leucine proline-enriched proteoglycan (leprecan) 1
170997	-1.95810	LEPREL2	leprecan-like 2
151835	-0.86940	LGALS1	lectin, galactoside-binding, soluble, 1 (galectin 1)
128091	2.47190	LSAMP	limbic system-associated membrane protein
165409	-3.16730	MCAM	melanoma cell adhesion molecule
190435	-1.67850	MGP	matrix Gla protein
146058	-4.16380	MMP2	matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)
128509	-2.79240	MMRN1	multimerin 1
155462	-3.27680	MMRN2	multimerin 2
200980	-3.67230	NID1	nidogen 1
128130	-2.54450	NOTCH2 NOTCH2NL	Notch homolog 2 (Drosophila) Notch homolog 2 (Drosophila) N-terminal like
133305	2.03320	null	null
145456	2.70930	null	null
187056	3.02170	null	null
124958	2.48350	PCDHA5	protocadherin alpha 5
122279	-2.63660	PEAR1	null
103150	-1.31770	PECAM1	platelet/endothelial cell adhesion molecule (CD31 antigen)
185750	-1.02470	PMF1 BGLAP	polyamine-modulated factor 1 bone gamma-carboxyglutamate (gla) protein (osteocalcin)
200143	-2.28290	PTPRF	protein tyrosine phosphatase, receptor type, F
205966	-2.58030	PVRL3	poliovirus receptor-related 3
176505	-2.56930	RAVER1	null
172499	-1.74710	SART1	squamous cell carcinoma antigen recognised by T cells
223460	-3.21350	SLC43A3	solute carrier family 43, member 3
133906	-1.44350	TGFBI	transforming growth factor, beta-induced, 68kDa
162911	-4.49700	THBS1	thrombospondin 1
122565	2.72360	TRBC1	T-cell receptor beta constant 1
197801	-0.95660	TSPAN14	tetraspanin 14
204877	-2.17500	TSPAN3	tetraspanin 3
116150	-0.79040	TSPAN8	tetraspanin 8
126761	-3.24220	VWF	von Willebrand factor

Online Supplementary Table S4. HC modulated genes of the "Adhesion" data sets after 48 h of treatment under basal conditions (Common genes for both 24 and 48 h of treatment are underlined in gray)

PROBE	LOG fold change	Gene Symbol	Gene Name
216353	-1.09140	ADAMTS1	ADAM metallopeptidase with thrombospondin type 1 motif, 1
212524	1.09680	ADAMTS4	ADAM metallopeptidase with thrombospondin type 1 motif, 4
224751	-1.17480	ALS2CR19	amyotrophic lateral sclerosis 2 (juvenile) chromosome region, candidate 19
217924	0.90900	BOMB	null
173181	2.89150	CEACAM1	carcinoembryonic antigen-related cell adhesion molecule 1 (biliary glycoprotein)
219223	3.02930	CEACAM1	carcinoembryonic antigen-related cell adhesion molecule 1 (biliary glycoprotein)
155501	1.58380	CLSTN3	calsyntenin 3
181713	-1.09990	COL13A1	collagen, type XIII, alpha 1
141012	-0.72780	COL18A1	collagen, type XVIII, alpha 1
158495	1.17570	DDR2	discoidin domain receptor family, member 2
101210	-1.09980	EFEMP1	EGF-containing fibulin-like extracellular matrix protein 1
182608	1.49300	F11R	F11 receptor
131558	0.65200	FAT	FAT tumor suppressor homolog 1 (Drosophila)
166297	-0.84350	FBLN2	fibulin 2
147111	-0.70260	FBN1	fibrillin 1 (Marfan syndrome)
484021	0.76050	FCGR3B FCGR3A	Fc fragment of IgG, low affinity IIIb, receptor (CD16b) Fc fragment of IgG, low affinity IIIa, receptor (CD16a)
168389	1.79890	FCHO2	FCH domain only 2
205205	-0.65960	FURIN	furin (paired basic amino acid cleaving enzyme)
109070	2.35060	ICAM1	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
150353	2.32060	IGFBP6	insulin-like growth factor binding protein 6
223442	1.43090	ITGA2	integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)
137521	-0.71070	ITGAE	integrin, alpha E (antigen CD103, human mucosal lymphocyte antigen 1; alpha polypeptide)
117958	1.42940	ITGAV	integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)
187625	1.00540	ITGB1	integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)
109549	2.72430	KITLG	KIT ligand
201627	1.55800	LAMC2	laminin, gamma 2
185853	2.55260	LGALS3BP	lectin, galactoside-binding, soluble, 3 binding protein
151391	0.89980	LGALS8	lectin, galactoside-binding, soluble, 8 (galectin 8)
119769	-1.09760	LTBP1	latent transforming growth factor beta binding protein 1
116441	-1.08900	LTBP2	latent transforming growth factor beta binding protein 2
165409	1.58310	MCAM	melanoma cell adhesion molecule
213008	0.89020	MFAP1	microfibrillar-associated protein 1
121617	-1.70750	MGP	matrix Gla protein
206371	0.94860	MPZL1	myelin protein zero-like 1
128130	1.24430	NOTCH2 NOTCH2NL	Notch homolog 2 (Drosophila) Notch homolog 2 (Drosophila) N-terminal like
185137	1.31310	NTN4	netrin 4
105086	0.95890	null	null
116092	-0.98350	PCDH10	protocadherin 10
209182	-1.32320	PCDHGB5 PCDI	protocadherin gamma subfamily B, 5 protocadherin gamma subfamily C, 3 protocadherin gamma subfamily A, 8 protocadherin gamma subfamily C, 5 protocadherin gamma subfamily B, 3 protocadherin gamma subfamily B, 1 protocadherin gamma subfamily A, 2 protocadherin gamma subfamily A, 5 protocadherin gamma subfamily B, 6 protocadherin gamma subfamily B, 4 protocadherin gamma subfamily B, 7 protocadherin gamma subfamily A, 6 protocadherin gamma subfamily B, 2 protocadherin gamma subfamily A, 10 protocadherin gamma subfamily A, 3 protocadherin gamma subfamily A, 4 protocadherin gamma subfamily A, 11 protocadherin gamma subfamily A, 9 protocadherin gamma subfamily A, 7 protocadherin gamma subfamily C, 4 protocadherin gamma subfamily A, 12 protocadherin gamma subfamily A, 1
141903	-0.66600	PCOLCE2	procollagen C-endopeptidase enhancer 2
103150	-1.20420	PECAM1	platelet/endothelial cell adhesion molecule (CD31 antigen)
130276	-0.92160	PSG9	pregnancy specific beta-1-glycoprotein 9
141843	1.53220	PSTPIP2	proline-serine-threonine phosphatase interacting protein 2
149750	1.59160	PVR	poliovirus receptor
217147	1.30470	SDC4	syndecan 4 (amphiglycan, ryudocan)
223460	1.02030	SLC43A3	solute carrier family 43, member 3
143717	0.90010	TAPBP	TAP binding protein (tapasin)
204877	1.49330	TSPAN3	tetraspanin 3
116150	-1.13390	TSPAN8	tetraspanin 8

Online Supplementary Table S5. HC modulated genes of the "Adhesion" data sets after 24 h of treatment under pro-inflammatory conditions (Common genes for both 24 and 48 h of treatment are underlined in gray).

PROBE	LOG fold change	Gene_Symbol	Gene_Name
216353	-0.79370	ADAMTS1	ADAM metallopeptidase with thrombospondin type 1 motif, 1
212524	1.17620	ADAMTS4	ADAM metallopeptidase with thrombospondin type 1 motif, 4
220229	-2.21240	ASGR1	asialoglycoprotein receptor 1
173181	0.72190	CEACAM1	carcinoembryonic antigen-related cell adhesion molecule 1 (biliary glycoprotein)
219504	-0.70300	COL1A1	collagen, type I, alpha 1
114784	-0.64990	COL5A2	collagen, type V, alpha 2
135619	-0.70740	CREBL1/TNXB	cAMP responsive element binding protein-like 1/tenascin XB
707818	-0.66900	DCN	decorin
142663	0.62890	DLG5	discs, large homolog 5 (Drosophila)
220221	0.79680	EGFL3	EGF-like-domain, multiple 3
133498	1.02450	FCRL5	Fc receptor-like 5
261063	-0.64140	GJB7	gap junction protein, beta 7
109070	0.81390	ICAM1	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
155212	1.12550	ICAM2	intercellular adhesion molecule 2
184949	-0.66920	IGHD	immunoglobulin heavy constant delta
145228	0.72050	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
162965	-0.67920	LTBP4	latent transforming growth factor beta binding protein 4
190435	-0.68120	MGP	matrix Gla protein
152076	-0.68610	MMP14	matrix metallopeptidase 14 (membrane-inserted)
111229	-2.14390	MMP27	matrix metallopeptidase 27
145989	-0.81220	MUC4	mucin 4, tracheobronchial
219954	1.11270	NPNT	nephronectin
533601	-0.76110	null	null
643635	-0.83140	null	null
708536	-1.02950	null	null
147844	0.88320	PCDHA7	protocadherin alpha 7
544276	-0.88920	PCDHB18	protocadherin beta 18 pseudogene
117418	-0.68250	SEMA4C	sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4C
511171	0.69870	SSPO	SCO-spondin homolog (Bos taurus)
162911	-0.83140	THBS1	thrombospondin 1
144660	-0.97650	TSPAN4	tetraspanin 4
116150	-0.73050	TSPAN8	tetraspanin 8
123908	-0.83210	VCAM1	vascular cell adhesion molecule 1

Online Supplementary Table S6. HC modulated genes of the "Adhesion" data sets after 48 h of treatment under pro-inflammatory conditions (Common genes for both 24 and 48 h of treatment are underlined in gray).

PROBE	LOG_Q[HC48_CY48.ma2]	Gene_Symbol	Gene_Name
216353	-0.93070	ADAMTS1	ADAM metalloproteinase with thrombospondin type 1 motif, 1
212524	1.03150	ADAMTS4	ADAM metalloproteinase with thrombospondin type 1 motif, 4
162273	-1.00200	CCBE1	collagen and calcium binding EGF domains 1
155853	-1.32970	CLDN11	claudin 11 (oligodendrocyte transmembrane protein)
202592	-1.00360	CLEC14A	C-type lectin domain family 14, member A
113262	-1.39580	COL3A1	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)
114784	-0.61710	COL5A2	collagen, type V, alpha 2
222934	-0.88560	COL8A1	collagen, type VIII, alpha 1
101210	-0.65240	EFEMP1	EGF-containing fibulin-like extracellular matrix protein 1
133221	-0.60840	ESAM	endothelial cell adhesion molecule
112884	-1.08330	FCER1G	Fc fragment of IgE, high affinity I, receptor for; gamma polypeptide
109549	0.94940	KITLG	KIT ligand
217099	0.64550	LIN7C	lin-7 homolog C (C. elegans)
155462	-0.65610	MMRN2	multimerin 2
116092	-0.68040	PCDH10	protocadherin 10
103150	-0.77850	PECAM1	platelet/endothelial cell adhesion molecule (CD31 antigen)
141843	0.66290	PSTPIP2	proline-serine-threonine phosphatase interacting protein 2
205966	-0.73410	PVRL3	poliovirus receptor-related 3
162911	-1.33260	THBS1	thrombospondin 1
165227	1.15860	TNFAIP6	tumor necrosis factor, alpha-induced protein 6
116150	-1.03980	TSPAN8	tetraspanin 8