Supplementary Table 2. All genes with significantly induced or repressed gene expression in prolonged hypoxic precultured hMVECs after VEGF-A/TNF-α stimulation.

Upregulated in Hypoxia		Downregulated in Hypoxia	
Gene	Fold Change	Gene	Fold Change
ABCC3	2.1	A1BG,ZNF497	0.55
ABTB1	1.5	A1BG-AS1	0.53
ACCN3	1.9	AATK	0.64
ACER2	1.7	ABCA6	0.52
ACTR3C	4.1	ACPL2	0.46
ADAMTS3	1.7	ACTR3B	0.66
ADAMTSL3	1.6	ADAM19	0.65
ADM	3.5	ADAMTS12	0.38
ADM2	2.4	ADAMTS18	0.46
ADPRH	1.8	ADAT2	0.64
ADRB1	2.3	ADC	0.44
ADSSL1	2.8	AGAP11,C10orf116	0.51
AEBP1,MIR4649	2.9	AGPAT9	0.57
AGMO	2.8	ALDH1A3	0.63
AIM1	1.7	ALDH4A1,MIR4695	0.53
AJUBA	1.9	AMD1	0.66
AK4	2.8	ANKRD23,ANKRD39	0.58
ALDOA	1.6	ANKRD55	0.48
ALDOC	2.2	ANLN	0.45
ALPK3,ZNF592	1.5	ANXA6	0.63
AMIGO2	2.5	ARHGAP11A,SCG5	0.52
ANGPTL4	4.0	ARHGAP5-AS1	0.66
ANK1	2.1	ARMCX2	0.67
ANKRD37	7.4	ASF1B	0.35
ANKRD53	2.6	ATAD3A,ATAD3B	0.66
ANO2	2.0	ATF7IP2	0.67
ANTXR2	1.5	ATP2B4	0.66
ANXA3	1.8	ATP6V0E2	0.43
ARHGAP21	1.6	AURKA	0.57
ARHGAP4	1.7	AURKB	0.26
ARHGEF40	1.8	B9D1	0.64
ARID5A	1.7	BCAN	0.48
ARRDC3	4.3	BHLHE41	0.51
ARRDC4	3.8	BIRC5	0.31
ATF3	2.0	BRCA1	0.44
B3GALT4	2.0	BRI3BP	0.66
BACH1	3.3	BTBD11	0.36
BAIAP2L1	1.5	BUB1	0.31

BATF	1.9	BUB1B,PAK6	0.35
BATF3,NSL1	1.6	C10orf125	0.65
BCAR1	1.7	C11orf96	0.53
BCL6	1.5	C16orf59	0.56
BEST1	1.9	C17orf28	0.61
BEST4,PTCH2,TCTEX1D4	1.8	C1orf233	0.60
BEX5	1.8	C20orf27	0.61
BGN	2.6	C2CD4A	0.44
BHLHE40	1.9	C6orf97	0.55
BHMT2	2.8	CADM4	0.56
BMF	1.7	CAMK1	0.64
BMP4	2.3	CAMK2N1	0.66
BMPER	3.0	CBLN2	0.55
BNIP3	1.6	CBX6	0.64
BNIP3L	2.0	CCDC102B	0.56
BTG1,LOC256021	1.7	CCDC147	0.61
C10orf10	1.5	CCDC165	0.63
C11orf35	1.8	CCDC169,CCDC169-SOHLH2,SOHLH2	0.46
C12orf39	2.0	CCNB2,MYO1E	0.55
C15orf48,MIR147B	2.4	CCND1	0.65
C1orf133	6.9	CCNE1	0.39
C1orf21	1.8	CCNE2	0.49
C1QTNF1	2.9	CD34	0.58
C1R	1.6	CDC20	0.36
C20orf96	1.5	CDC45	0.19
C21orf7	1.9	CDCA2	0.28
C3orf15	1.6	CDCA5,LOC100130348	0.59
C4orf3	1.7	CDCA8	0.37
C4orf47	3.8	CDK1	0.24
C6orf132	2.3	CDKN2A	0.32
C7orf29,LRRC61	3.2	CDKN3	0.64
C7orf31	1.8	CENPA	0.31
C7orf58	2.2	CENPM	0.38
C7orf61	1.9	CEP55	0.28
C7orf63	1.5	CES4A	0.64
C8orf4	1.6	CGNL1	0.63
C8orf58	1.7	CHAC2	0.65
C9orf5	2.3	CHAF1B	0.56
CA11	1.7	CHCHD10	0.66
CA12	2.0	CHN2	0.47
CA2	6.5	CHTF18	0.64
CABP4	1.6	CIT,MIR1178	0.44

CACNA1A	1.6	CKAP2L	0.40
CACNA1C	2.2	CLEC7A	0.54
CAMK1D,LOC283070	2.2	CLSPN	0.35
CAPN12	2.1	CORO1A,LOC606724	0.51
CARHSP1	1.5	CORO2B	0.57
CBS	1.6	CPE	0.47
CCL20	1.8	CRHR1,MGC57346	0.67
CCL28	2.2	CXCL6	0.64
CCNG2	1.5	CXorf36	0.18
CCR10	1.5	CYP2S1	0.24
CCRN4L	1.6	CYTL1	0.57
CD101	1.5	DCBLD2	0.65
CD302,LY75,LY75-CD302	1.8	DGAT2	0.61
CD69	2.3	DGKG	0.54
CDCP1	2.0	DHRS11	0.49
CDH2	2.9	DLGAP5	0.28
CEBPD	1.6	DLL1	0.53
CELSR1	1.6	DNAJB4	0.54
CEP112	1.6	DNAJC6	0.61
CEP135	1.7	DPY19L3	0.62
CHAC1	2.4	DPYSL4	0.66
CHRNB1	1.5	EDNRB	0.62
CHRNE	1.9	EFNB2	0.64
CHST2	1.6	ELOVL6	0.51
CHST6	1.9	EME1	0.36
CHSY3	1.8	EPHX1	0.55
CLCN4	1.7	ERCC2	0.66
CLDN14	2.3	FAM101B	0.67
CLDN23	2.0	FAM102A	0.63
CLDN7	1.7	FAM109A	0.61
CLEC2B	1.8	FAM117A	0.65
CMPK2	1.6	FAM171A2	0.56
COL12A1	2.7	FAM212B	0.53
COL1A2	6.0	FAM216A	0.61
COL8A2	2.9	FAM54A	0.58
CPLX1	3.1	FAM59B	0.52
CRNDE	1.5	FAM83D	0.25
CSPG4	2.9	FANCA	0.54
CSPG5	2.9	FANCD2	0.48
CSRP2	2.0	FANK1	0.60
CTF1	1.8	FEN1	0.64
CXCR7	1.9	FKBP14	0.65
CYP1A1	2.0	FLJ42627	0.56

CYP27A1,TTLL4	1.9	FN3K	0.67
CYP2J2	1.6	FRMD5	0.60
DACT1	4.5	GADL1	0.36
DAPK2	1.6	GAMT	0.55
DARS	1.6	GCAT	0.47
DCHS1	1.6	GFOD1	0.57
DDIT3	1.7	GINS1	0.55
DDIT4	3.6	GINS2	0.21
DDX43	2.5	GMFB	0.61
DNAH5	1.7	GREB1L	0.63
DNAJC18	1.6	GTF2IP1,LOC100093631	0.59
DNMT3A	1.5	GTSE1	0.32
DOCK2	1.6	HBEGF	0.56
DTX4	1.8	HCN2	0.57
DUSP5P,RHOU	1.6	HES7	0.53
DYRK2	1.8	HEY2	0.64
EBF4	3.5	HIF1A	0.53
EBI3	1.8	HJURP	0.38
EDIL3	1.5	HMMR	0.41
EFNA1	1.7	HMOX1	0.19
EGLN1	1.7	HS3ST1	0.55
EGLN3	106.8	IFI27L1	0.66
ENKUR	1.7	IFI27L2	0.66
ENO2	3.1	IGF1	0.16
ENO3	1.6	IL6R	0.61
EPB41L3	1.7	IPW,SNORD116-17,SNORD116-21,SNORD116-24,SNORD116-26,SNORD116-4	0.67
EPSTI1	1.5	JAG1	0.66
ERO1LB	1.6	KIAA0513	0.63
ERRFI1	3.8	KIAA1274	0.36
F2RL3	5.8	KIF11	0.60
FAIM	1.5	KIF19	0.36
FAM102B	1.5	KIF20B	0.58
FAM115C	2.5	KIF22	0.66
FAM117B	1.8	KIF23	0.57
FAM13A	3.7	KIF2C	0.33
FAM150B	3.9	KIF4A	0.39
FAM160A1	1.9	KIFC1	0.35
FAM167B	1.6	KLHL4	0.67
FAM189A2	1.6	KYNU	0.07
FAM26F	3.0	L2HGDH	0.50

FAM46A	1.9	L3MBTL3	0.62
FAM46C	1.9	LAMA3	0.60
FBLN7	2.1	LAPTM4B	0.61
FER1L4	2.3	LDB2	0.57
FLJ13197	1.9	LDLRAD2	0.59
FLJ32224	2.7	LINC00520	0.47
FLJ34503	2.0	LOC100507053	0.61
FLJ44511	1.5	LOC100507254	0.35
FOXS1	2.0	LOC284751	0.62
FST	3.1	LOC285758	0.65
FXYD2,FXYD6,FXYD6-FXYD2	1.9	LOC388849	0.66
FZD8	1.7	LOC401052	0.43
GABRE,MIR452	1.7	LOC728084	0.40
GADD45B	2.1	LRP3	0.63
GAL3ST4	3.5	LRRC20	0.36
GALM	2.0	LRRC33	0.50
GALNTL4	2.3	LRRC8B	0.51
GATA6	1.6	LST1	0.44
GCNT4	1.9	MAPKAPK3	0.62
GEM	2.2	MAPRE3	0.63
GHDC	2.1	MARCKSL1	0.64
GHRL	1.8	MCM4	0.48
GIMAP1,GIMAP1-GIMAP5,GIMAP5	2.1	MEG3	0.66
GJC2	1.9	MEX3A	0.52
GLIS3	1.7	MFSD2A	0.23
GNA14	3.2	MGC23284	0.66
GNAL	2.4	MGP	0.35
GPR146	2.5	MIR31HG	0.66
GPR68	1.7	MKI67	0.18
GPX7	2.0	MLF1IP	0.45
GREM1	2.7	MMP15	0.51
GULP1	1.8	MMP16	0.58
GZMA	1.7	MRAS	0.52
H1F0	1.9	MREG,PECR	0.58
H1FX	1.5	MXRA8	0.59
HAVCR2	2.6	MYBL2	0.13
HELB	1.6	MYRIP	0.59
HERC5	2.1	NCAPG	0.30
HHIPL1	2.0	NDC80	0.22
HIF3A	11.1	NEU3	0.65
HILPDA	1.8	NID2	0.27

HIST1H2BD	1.5	NLGN1	0.34
HIST2H2BE	1.7	NOVA1	0.56
HK2	2.0	NPM3	0.58
HLA-A	1.8	NRGN	0.66
HOXD1	1.8	NUF2	0.27
HOXD-AS1	1.5	NUSAP1	0.45
HRH1	1.6	OR5B17	0.63
HSD17B2	1.6	ORC6	0.46
HSPA12B	2.8	OSBP2	0.59
HTR1B	1.8	OTUB2	0.62
HVCN1	2.0	PANK1	0.63
HYAL4	3.8	PARD6G	0.39
ICAM4	2.9	PARPBP	0.59
ICAM5	2.2	PASK	0.62
IFITM1	1.8	PDXP	0.64
IFITM10	1.9	PFN2	0.61
IGFBP5	7.0	PHEX	0.60
IL18R1	1.6	PIGZ	0.53
IL1R1	1.8	PIK3R3	0.45
IL1RAP	2.1	PKMYT1	0.23
IL2RG	1.5	PLA2G4A	0.54
IL4I1,NUP62	1.5	PLXNA4	0.37
IL6	2.0	PMCH	0.37
INHBA	2.1	PODXL2	0.44
IPMK	1.5	POLR3G	0.57
IRF7	1.6	POP1	0.47
IRS2	1.7	PPARGC1B	0.63
ISL2	1.7	PPP1R16B	0.66
ITGB4	1.8	PRDX2	0.67
ITGBL1	2.3	PRR7	0.30
JDP2	2.0	PRRT3	0.54
JPH2	2.5	PRRX1	0.29
KANK3	1.6	PRSS3	0.62
KCNJ2	1.8	PSRC1	0.51
KCNS3	4.2	PTGDS	0.49
KCTD16	4.9	PTP4A3	0.40
KCTD8	4.1	PTPRS	0.37
KDM3A	1.9	PTTG3P	0.58
KLF11	1.6	PVRL1	0.67
KLF4	3.5	PXMP2	0.54
KLHL3,MYOT	1.7	QPCTL	0.62
L3MBTL4	1.9	RAB3A	0.61
LAG3	1.9	RAB6B	0.29

LDHA	2.2	RAC3	0.57
LIMCH1	4.7	RACGAP1	0.58
LIMS3,LIMS3-LOC440895,LOC100288570,LOC440895	1.8	RAD51	0.63
LINC00263	1.8	RAD51AP1	0.37
LINC00324	3.0	RCAN2	0.32
LITAF	2.4	RECQL4	0.52
LOC100127983	1.9	REEP6	0.66
LOC100128071	1.8	RFC3	0.57
LOC100129726	2.0	RGS10	0.61
LOC100132077	2.9	RGS11	0.43
LOC100132891	2.0	RGS4	0.42
LOC100133445,LOC115110	1.8	RGS5	0.15
LOC100134259	2.5	RHOBTB3	0.63
LOC100190938	2.6	RHPN1	0.63
LOC100506178	1.7	RPS6KL1	0.58
LOC100506746	1.9	RRM2	0.11
LOC100507050	1.9	SCAMP5	0.43
LOC149837	2.6	SCARB1	0.56
LOC154761	2.6	SCN5A	0.52
LOC283104	1.6	SDC1	0.37
LOC284454,MIR23A,MIR24-2,MIR27A	1.7	SDSL	0.60
LOC439949	1.8	SFMBT1	0.55
LOC440028	3.0	SFXN2	0.50
LOX	2.0	SH3PXD2A	0.57
LOXL2	1.5	SH3TC2	0.49
LRG1	1.6	SHANK1	0.46
LRP2BP	1.7	SHMT1,TOP3A	0.49
LRRC34	1.8	SKA1	0.24
LRRC49	1.6	SLAIN1	0.64
LRRC56	1.5	SLC12A2	0.61
LURAP1L	1.6	SLC25A10	0.51
LYPD1	2.0	SLC25A19	0.65
LYPD5	2.1	SLC25A23	0.55
MAF	2.2	SLC25A29	0.61
MAFK	1.6	SLC29A4	0.63
MAMDC4	1.8	SLC2A11	0.65
MAP3K8	1.9	SLC35G1	0.66
MAPK13	2.2	SLC40A1	0.48
MB21D1	1.7	SLC43A2	0.64
MCHR1	3.2	SLC44A5	0.39

MEGF10	1.8	SLC45A4	0.59
MEGF6	1.9	SLC47A1	0.38
MEIS1	2.0	SNRNP25	0.63
MEX3B	1.5	SPAG5	0.48
MGC16121,MIR424,MIR503, MIR542	3.1	SPSB2	0.65
MIR101-1,MIR3671	2.3	SSBP3	0.60
MIR146A	1.7	STEAP1B	0.59
MIR181A1,MIR181B1	2.4	SULT1B1	0.41
MIR210HG	7.9	TDRKH	0.63
MIR30B	2.2	TFRC	0.64
MLLT4-AS1	1.8	TIMP1	0.61
MME	2.2	TK1	0.32
MMRN2	1.5	TMEM106C	0.55
MOB3B	1.6	TMEM121	0.50
MOXD1	1.6	TMEM177	0.66
MRGPRX3	2.5	TMEM38A	0.56
MSC	2.1	TMEM38B	0.67
MT1F	2.3	TMEM97	0.53
MT1L	1.6	TNFSF4	0.47
MT1M	5.9	TNFSF9	0.52
MUC1	1.9	TNIK	0.43
MXI1	1.9	TOP2A	0.19
MYCN	2.6	TPX2	0.54
MYO15B	2.8	TRAP1	0.65
NALCN	1.6	TRIML2	0.51
NARF	1.5	TRIP13	0.52
NDRG1	1.8	TROAP	0.43
NDUFA4L2	1.6	TUBA4A	0.54
NEURL3	2.0	TYRO3	0.60
NFIL3	1.7	UBD	0.50
NKAPL	1.9	UBE2C	0.44
NKAPP1	1.6	UBE2T	0.49
NLRC3	1.7	UCHL1	0.63
NOD2	1.7	UCP2	0.53
NOV	3.0	UHRF1	0.39
NOX4	1.7	VPS37D	0.53
NPR2	1.5	VSIG1	0.67
NR4A2	1.9	WDHD1	0.61
NTN1	1.9	WDR62	0.44
NTN4	1.6	ZCWPW2	0.62
NUPR1	1.7	ZNF30	0.65
NYNRIN	1.7	ZNF323	0.46

OASL	1.7	ZNF485	0.60
ODF3B	2.6	ZNF491	0.66
OSMR	2.4	ZNF503	0.46
OTUD1	1.6	ZWINT	0.54
P2RX2	2.0		
P4HA1	2.0		
PAG1	3.2		
PALMD	1.6		
PAN3-AS1	1.6		
PAPL	2.0		
PAPPA2	2.3		
PCDH10	3.0		
PDE4C	15.0		
PDGFRA	1.8		
PDGFRL	1.7		
PDK1	2.0		
PDZD2	1.9		
PGM1	2.5		
PGM5P2	1.6		
PHGDH	2.5		
PIK3IP1	1.5		
PIM1	6.0		
PKP3	2.0		
PLA2G16	1.5		
PLCH2	2.7		
PLIN2	1.7		
PLOD2	2.0		
PMAIP1	1.9		
PMEPA1	1.7		
PNMA2	1.7		
PODXL	1.9		
POF1B	2.4		
POMC	2.5		
PP7080,SLC9A3	1.8		
PPARG	6.5		
PPFIA4	22.9		
PPP1R13L	1.7		
PPP1R3G	6.7		
PRDM1	1.7		
PRDM8	2.4		
PRKCQ	2.7		
PRKY	2.1		
PROCA1	1.9		

PROS1	1.6
PRPS2	1.5
PTER	2.0
PTGFR	1.6
PTGIR	2.2
PTPRB	2.0
QPCT	2.0
RAB33A	2.6
RAB34	1.7
RAB38	1.8
RALGPS2	1.9
RAMP2	2.5
RARRES1	2.9
RASA4	1.5
RASSF4	1.8
RBMS3	1.5
REPS2	2.1
RGAG4	1.6
RGNEF	1.6
RGS7	2.0
RHBDF2	1.6
RHEBL1	1.7
RIPK4	3.8
RLF	1.6
RNASEL	1.6
RORA	1.8
RPS6KA5	1.6
RSPH9	1.9
RTKN	2.5
S100A1	1.5
SARM1	2.1
SAV1	1.6
SCARNA9	1.8
SCO2,TYMP	1.7
SDC4	2.1
SDR42E1	1.6
SEMA3C	1.8
SEMA4B	2.4
SEPT4	3.2
SERTAD4	7.0
SFMBT2	1.8
SGCE	2.2
SGIP1	1.9

SH3D21	2.7
SHH	4.5
SIPA1L1	1.9
SIX1	2.7
SIX4	1.9
SLC16A3	1.9
SLC2A1	7.3
SLC2A3	2.7
SLC30A1	1.5
SLC38A4	1.9
SLC39A14	1.6
SLC45A1	1.7
SLC6A6	1.6
SLC6A9	2.8
SLC7A2	2.0
SLC7A5	2.0
SLC8A1	2.2
SLC8A3	11.3
SLCO4A1	2.0
SMAD7	3.3
SMS	1.5
SNX33	1.6
SP4	1.5
SPAG4	2.1
SPRY1	2.0
SSTR2	1.7
ST8SIA6	5.7
STC2	3.2
STMN3	1.7
STX1B	1.6
SUN2	1.6
SYNPO	1.8
TCHH	2.3
TCTEX1D1	4.0
TESK2	1.7
TGFB2	2.4
TGFBI	2.3
TIMP3	3.0
TIMP4	25.9
TLE4	1.6
TLR2	1.9
TM4SF18	1.5
TMEM173	1.7

TMEM45A	2.4
TMEM53	1.5
TMEM71	2.4
TMIE	2.0
TNFAIP3	1.8
TNFAIP6	1.7
TNFRSF10B	1.6
TNFRSF10D	1.7
TNFRSF11A	1.7
TNFRSF4	1.5
TOX	2.3
TP63	1.9
TPI1	2.0
TPM1	2.1
TSPAN2	3.5
TSPY26P	1.7
TTC30A	1.7
TTC30B	1.8
TUSC1	2.0
TUSC3	1.5
TXNIP	3.9
UBXN11	1.6
ULBP1	3.4
UNC13A	1.9
VAT1L	7.1
VCAN	3.2
VEGFA	3.5
VEGFC	1.8
VIP	1.6
VLDLR	3.4
WDR66	2.4
WNK4	1.9
WNT5A	1.6
XRCC6BP1	1.5
ZNF292	1.6
ZNF395	2.2
ZNF469	1.7
ZNF501	1.7
ZNF532	1.5
ZNF572	1.6
ZNF655	2.4
ZNF704	2.2
ZNF747	2.2

The relative gene expression was compared with the gene expression of hMVECs precultured in normoxia and stimulated with VEGF-A/TNF-α (n=4).