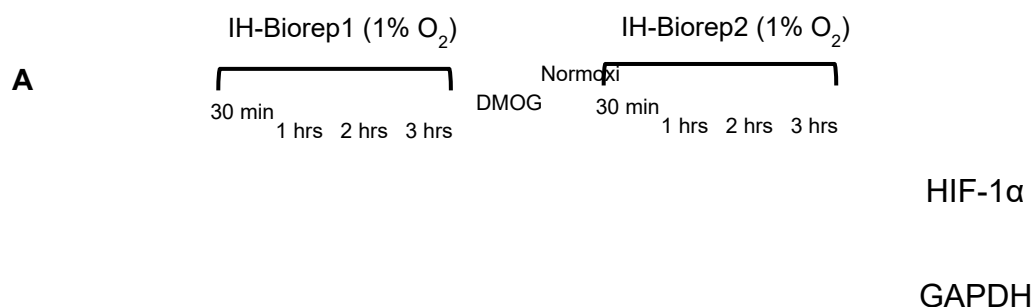


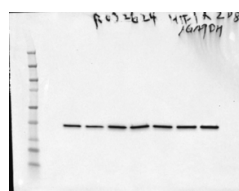
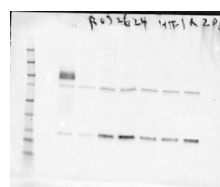
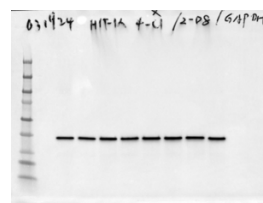
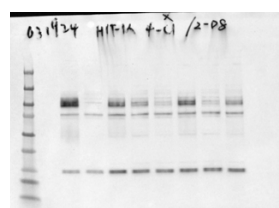
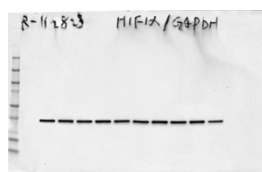
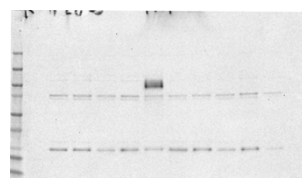
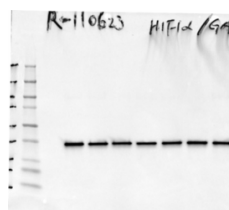
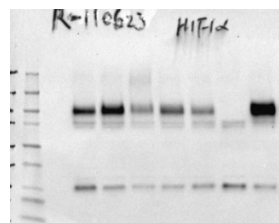
Supporting information:

Fig S1 _ HIF-1 α protein stabilization analyzed under different exposures to IH and full-size images of western blot experiments (**A**) that are achieved by two independent methods (**B** and **C**)

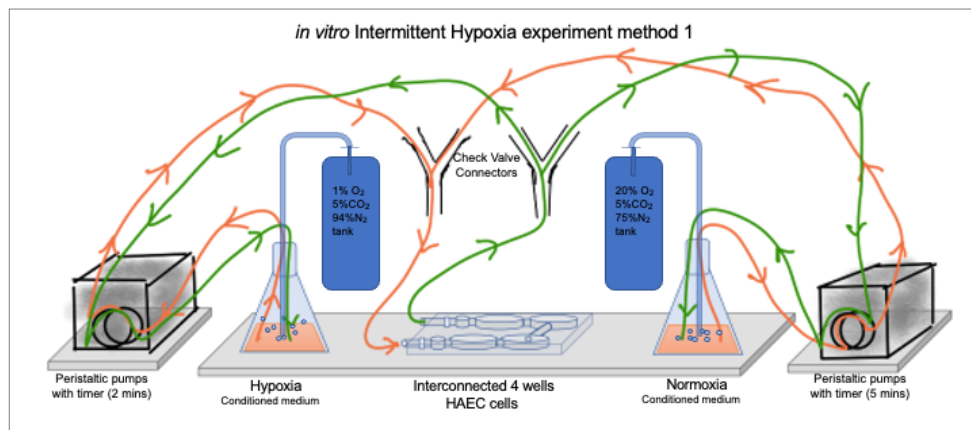


HIF-1 α

GAPDH



B



C

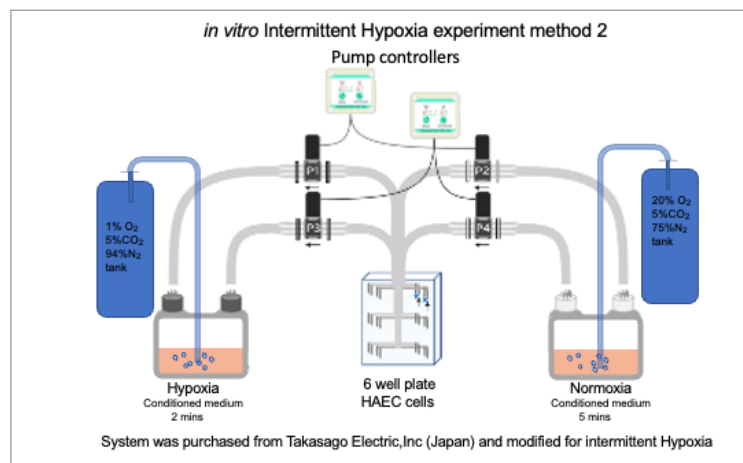


Fig S2 _Volcano plots of Comparative gene expression in Normoxia (Ctrl), Intermittent hypoxia (IH) and sustained continuous hypoxia (CH or SA) treated with Epinephrine (Epi)

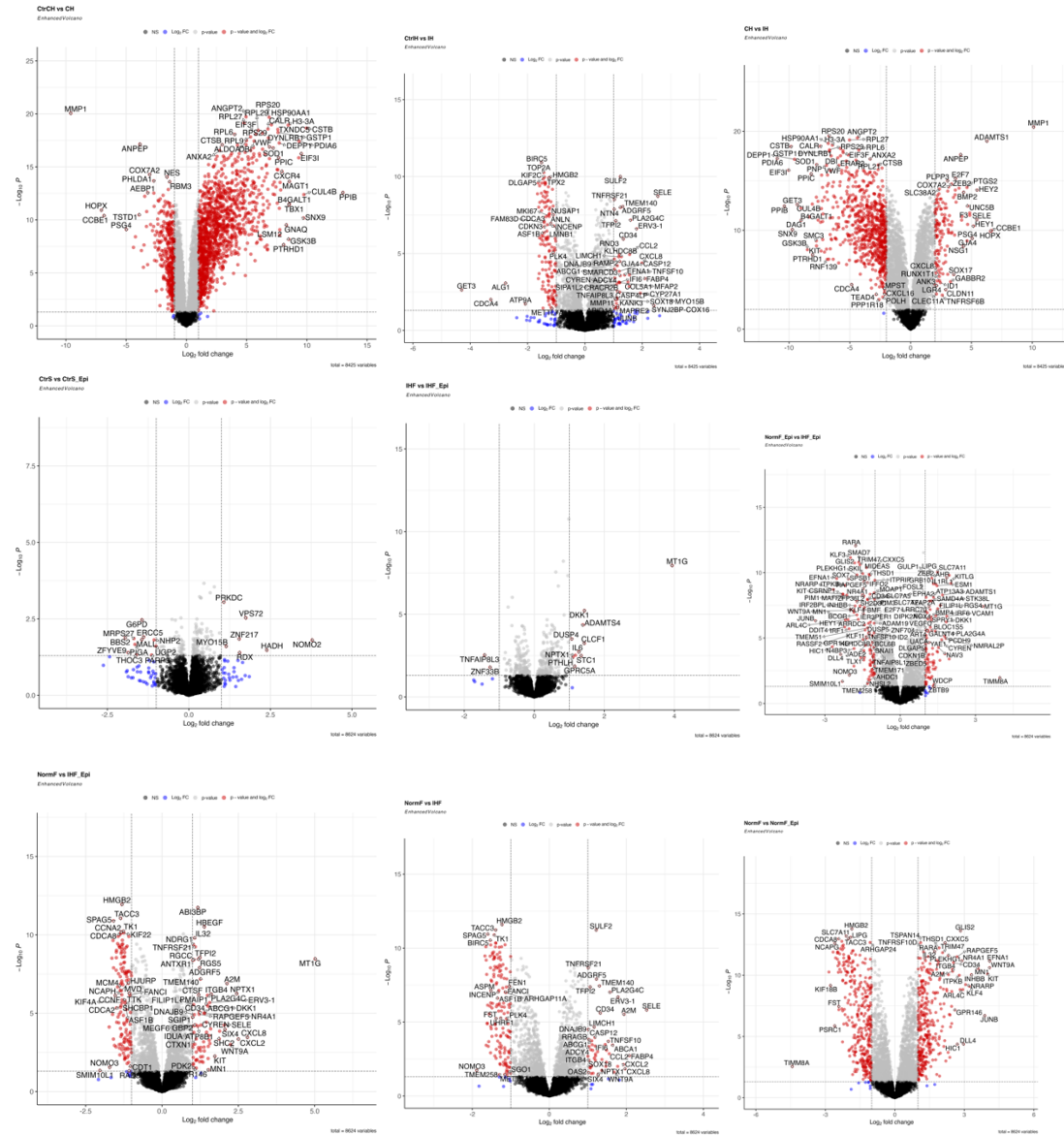
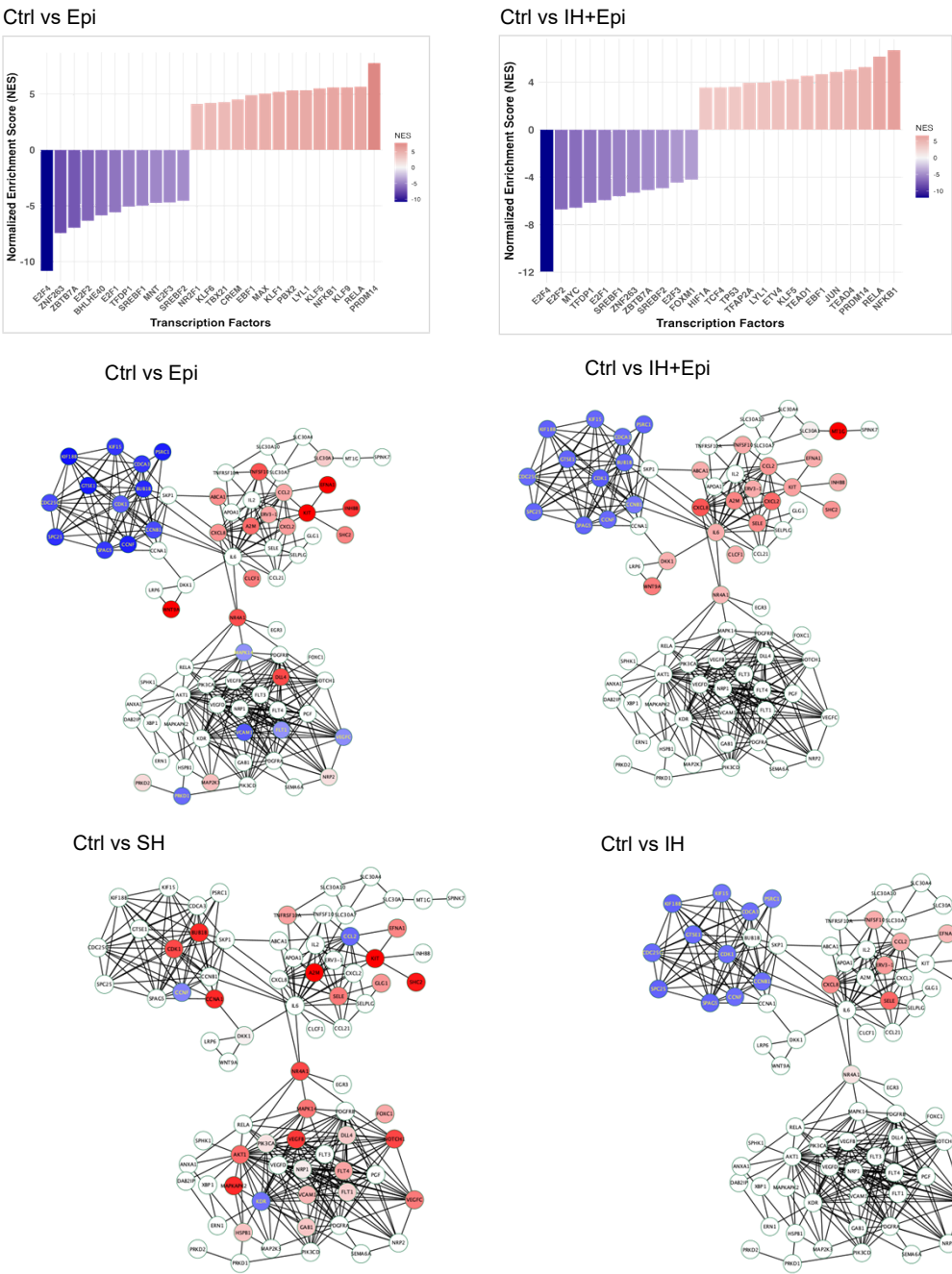


Fig S3 _ Ctrl vs Epi and Ctrl vs IH-Epi DoRothEA and Cytoscape PPI. (A) DoRothEA Transcription factor enrichment normoxia Ctrl vs Epi and Ctrl vs IH+Epi. The Cytoscape PPI with visualization of downstream gene expression profiles included the following Ctrl vs Epi, Ctrl vs IH+Epi, Ctrl vs SH and Ctrl vs IH. Upregulated genes are in red, and downregulated genes are in blue.



CHEA_HIF_TARGETS GENE LIST:

GPR135, HEY1, C2ORF42, CGA, WSB1, MRPL14, DYNLL1, MAFK, SEC61G, SOS1, FAM65C, P4HA2, MDGA2, BRK1, KDM4B, LONP1, DNAJB6, TMEM18, DHCR7, ELMSAN1, PPM1D, TM2D3, PNRC1, SEMA4B, INHBA, SLC6A19, PFKL, SLC9A9, BCAS4, SLC37A3, VDAC1, ALDOA, NOL3, UBA6, FOS, KLRF1, NT5DC1, SLC31A1, GOLGA1, CITED2, SERTAD2, RUNX1, TFF1, HTR5A, POU2F1, PTPRN, CCNL1, MYL4, ALDOC, ZFAT, SLC8A3, RAN, ANO6, TFRC, WISP3, MAB21L3, PARD6B, DPT, GTF2IRD2B, NAV1, PTPRM, FAM162A, ZNF331, TMEM45B, TMEM45A, BHLHE40, SCARB1, WDR60, NTHL1, GLTSCR2, RASSF7, DYRK1B, STC2, C11ORF30, TMEM183A, FBL, SLC38A2, MRPS18A, BMP4, PPP2R1A, ACOT6, PNPO, PPP1R14B, CAV1, WDR89, WDR54, CLDN14, DAAM1, PDK1, FAM13A, AKAP10, KRT80, AGPAT5, MGAT5, NUPL1, PFKP, ARRDC3, C1ORF116, SLC35E1, ZSWIM4, SLC2A1, WBSCR22, FNTB, NCOA3, PPP1R21, DHRS13, PKP2, MSANTD3, C1D, KLHDC4, TRIOBP, SLC28A1, IRX1, TRIM37, MTFP1, SPRY1, C8ORF58, ZFP36L1, 10-Mar, PRDM1, TSC22D2, UPK1B, AKAP12, MTCH2, HK2, TPD52, C11ORF49, MBTPS1, ANKZF1, CUX1, MAPK6, S100A10, KDM3A, ADM, OXSM, DSP, KDM4C, SAP30, TLE1, CRKL, PVRL4, KIAA0195, CLN5, SCD, OTUD7B, DAPK2, ALKBH5, RAI14, UBC, TMEM189, DDX50, BCL2L2, GUK1, HILPDA, ELL2, ERFFI1, EVX1, PSMD6, CECR5, DARS, INSIG2, WISP1, RIT1, SUMF1, CYP1B1, LPIN3, UBE2V2, SCYL1, SLC2A3, LDHA, GBE1, MAF, NDRG1, GRB10, SIAH2, PLOD2, NAMPT, RAPGEF6, AHNAK, FUT11, KRT19, NCOR2, GADD45B, SLC22A18AS, AKR1E2, GJA1, ITGA5, ZC3HAV1L, CDC73, N4BP3, ILVBL, RASEF, UTRN, NFKB2, QSOX1, ITFG2, RNF19A, ARID1B, ANGPTL4, ST8SIA6, C3ORF14, JMJD6, RDH11, BHLHE41, PARN, SRSF3, GPR37L1, VGLL4, EVL, TMEM88, FBXW7, GSE1, LOXL2, IGFBP3, RBPJ, PDGFB, EGFR, FEM1C, KMT2E, NUP210, CHD2, TRAM2, BZW1, UNKL, LINC00242, GPI, ELF3, DENND1A, PC, NR4A2, PPP1R13L, TRIM33, SLA, DNASE1, FOXO1, PFDN4, SPAG4, SNAPC3, MAX, DDIT4, PGAM1, ZNF19, DNM2, CLK3, FBXO42, SSUH2, ZNF572, ATP9A, PTPRB, PKM, DAB2IP, BACE2, KCTD15, ANKRD37, FAM129B, KLF10, CLIC6, RAP1GAP2, ALOXE3, MPI, RNF126, S100P, MIF, CTDSP1, NARF, PPP1R3C, PNMA2, ENO1, C1ORF27, GAPDH, FAM110C, TPCN2, COX20, LINC01011, LINC00574, BCCIP, CCNG2, ZNF407, P2RY2, IBA57, KDM5B, KXD1, BLCAP, MAML1, PFKFB3, P4HA1, LRP1, UBE2E1, TNS1, DAZL, EGLN3, ZNF395, OXSR1, VRK1, GDF15, RAD51B, EMP3, PXDN, TMEM75, NCOA5, SMC2, VKORC1, SNAPC1, MAP1LC3B, WDR5B, PFKFB4, KCNMA1, RAB6A, PPP1CB, RSNB1, MICALL2, CIART, CA9, INHA

GOBP RESPONSE TO OXYGEN LEVELS GENE LIST

msigdb/human/geneset/GOBP_RESPONSE_TO_OXYGEN_LEVELS

ABAT, ACAA2, ACE, ACVRL1, ADA, ADAM15, ADAM17, ADAM8, ADIPOQ, ADM,
ADO, ADORA1, ADSL, AGER, AGTRAP, AIFM1, AJUBA, AK4, AKT1, ALAD, ALAS2,
ALKBH5, ANG, ANGPT2, ANGPT4, ANGPTL4, APAF1, AQP1, AQP3, ARNT, ARNT2,
ASCL2, ATF2, ATF4, ATG7, ATM, ATP6AP1, ATP6V0A2, ATP6V0D1, ATP6V1A,
ATP6V1G1, ATP7A, BAD, BCL2, BECN1, BIRC2, BMP2, BMP7, BNIP2, BNIP3,
BNIP3L, BRIP1, CA9, CAPN2, CASP3, CASP9, CASR, CAT, CAV1, CAV3, CBFA2T3,
CBL, CBS, CCDC115, CCNA2, CD24, CD38, CDKN1A, CDKN1B, CFLAR, CHCHD2,
CHRNA4, CHRNA7, CHRNA7, CHRNA7, CIAO3, CITED2, CLCA1, CLDN3, COL1A1, CPEB1,
CPEB2, CPEB4, CREBBP, CRYAB, CXCL12, CXCR4, CYB5R4, CYBB, CYGB,
CYP1A1, CYSLTR1, DDAH1, DDIT4, DDR2, DIO3, DNMT3A, DPP4, DRD2, EDN1,
EDNRA, EEF2K, EGLN1, EGLN2, EGLN3, EGR1, ENO1, ENSG00000274276, EP300,
EPAS1, EPHA4, EPO, ERCC2, ERCC3, ERO1A, F7, FABP1, FAM162A, FAS, FGFR2,
FMN2, FOS, FOSL2, FOXO1, FUNDC1, FZD4, GATA6, NGGT1, GUCY1A1,
GUCY1A2, GUCY1B1, HDAC2, HIF1A, HIF3A, HILPDA, HIPK2, HK2, HMOX1,
HMOX2, HP1BP3, HSD11B2, HSF1, HSP90B1, HSPG2, HYOU1, IL1A, IRAK1, ITGA2,
ITPR1, ITPR2, KCNA5, KCND2, KCNJ11, KCNJ8, KCNK2, KCNK3, KCNMA1,
KCNMB1, LEP, LIF, LIMD1, LMNA, LONP1, LOXL2, LPAR1, LTA, MALAT1, MAP3K7,
MB, MDM2, MDM4, MECP2, MGARP, MIEF1, MIR106B, MIR126, MIR140, MIR145,
MIR146A, MIR17, MIR20A, MIR21, MIR210, MIR214, MIR34A, MIR448, MIR762,
MLST8, MMP14, MMP2, MPL, MT-ATP6, MT-ND4, MT-ND5, MT3, MTHFR, MTOR,
MYB, MYC, MYOCD, MYOD1, NDNF, NDP, NDRG1, NDUFS2, NF1, NFE2L2, NGB,
NKX3-1, NOL3, NONO, NOP53, NOS1, NOS2, NOTCH1, NOX1, NPEPPS, NPPC,
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PLEKHN1, PLK3, PLOD1, PLOD2, PMAIP1, PML, POLB, POSTN, POU4F2, PPARA,
PPARD, PPARG, PRKAA1, PRKCE, PSEN2, PTGIS, PTGS2, PTK2B, RAD21, RBPJ,
REST, RGCC, ROCK2, RORA, RPTOR, RWDD3, RYR1, RYR2, SCAP, SCFD1,
SCN2A, SDHD, SFRP1, SIRT1, SIRT2, SIRT4, SLC11A2, SLC1A1, SLC29A1,
SLC2A1, SLC2A4, SLC2A8, SLC39A12, SLC6A4, SLC7A5, SLC8A3, SLC9A1,
SMAD3, SMAD4, SOD2, SOD3, SOX2, SOX4, SRC, SRF, STC1, STC2, STOX1,
STUB1, SUV39H1, SUV39H2, TBL2, TEK, TERC, TERT, TFRC, TGFB1, TGFB2,
TGFB3, TGFB3, TH, THBS1, TIGAR, TLR2, TM9SF4, TMBIM6, TMEM199, TNF,
TP53, TREM2, TRPV4, TSC1, TWIST1, TXN2, TXNRD2, UBQLN1, UCN3, UCP2,
UCP3, USF1, USP19, VASN, VCAM1, VEGFA, VEGFB, VEGFC, VEGFD, VHL,
WDR83, WTIP, XRCC1, ZEB2, ZFP36L1

ENDOTHELIAL CELL RESPONSE GENE LIST

AKT1, XBP1, MAPK14, FLT3, HSPB1, DLL4, PDGFRA, DAB2IP, PDGFRB, GAB1, KDR, PIK3CA, NRP1, FLT1, VCAM1, VEGFD, VEGFB, SPHK1, MAP2K3, MAPKAPK2, ANXA1, PIK3CD, RELA, PGF, VEGFC, NOTCH1, ERN1, FOXC1, FLT4, EGR3, NRP2, PRKD1, SEMA6A, PRKD2, A2M, CCL2, IL2, APOA1, CXCL8, IL6, ABCA1, SKP1, SELE, BUB1B, CCNA1, CCNB1, SPC25, PSRC1, GTSE1, CCNF, CDC25C, KIF18B, CDCA3, KIF15, SPAG5, CDK1, ERV3-1, SELPLG, EFNA1, TNFSF10, KIT, CXCL2, CCL21, DKK1, CLCF1, NR4A1, LRP6, WNT9A, GLG1, TNFRSF10A, SLC30A7, INHBB, SHC2, MT1G, SPINK7, SLC30A1, SLC30A10, SLC30A4,