

A

Fold Change of Hypoxia vs. Normoxic Untransduced Macrophages

	Donor 1	Donor 2	Donor 3	Average
HIF1A	-1.85497	-2.17348	-1.63224	-1.88689
CD163	-1.35865	-1.94657	-1.33957	-1.54826
CCL2	-1.96304	-0.4883	-1.78562	-1.41232
C1QC	-0.98359	-1.81508	-0.9592	-1.25262
PLAU	-1.00854	-1.63256	-0.87147	-1.17086
S100A9	-0.87399	-1.45463	-0.83393	-1.05418
SIGLEC1	-0.83221	-1.17324	-1.13713	-1.04753
C1QB	-0.80389	-1.29875	-0.94111	-1.01458
ADORA3	0.403376	1.460529	1.137218	1.000375
MMP19	0.72213	1.267916	1.067238	1.019095
CYTIP	1.027122	1.249822	0.962416	1.079786
CRIP1	0.833826	1.246184	1.174233	1.084748
CXCL2	1.493683	0.667971	1.103244	1.088299
SLC16A6	0.906183	1.215708	1.210933	1.110942
KLF10	1.049258	1.386393	0.913702	1.116451
RGS16	0.843516	1.480639	1.027063	1.117073
DPP4	1.026392	1.322551	1.117545	1.155496
S100A10	1.121832	1.321982	1.186312	1.210042
ADAM8	1.414198	1.127403	1.08912	1.21024
CXCL8	2.068871	0.926706	0.645627	1.213734
IL4I1	1.348439	1.164397	1.153148	1.221995
FLT1	1.371308	1.436849	1.218027	1.342061
RGS1	1.555466	1.493378	1.19727	1.415371
CXCR4	1.683538	1.491952	1.518753	1.564748
TNFAIP3	1.789414	1.837802	1.718698	1.781971
SERPINE1	1.686748	2.164322	1.765436	1.872169
MIF	2.170181	2.168025	2.028469	2.122225
FCGR2B	2.03796	2.643305	2.227044	2.302769

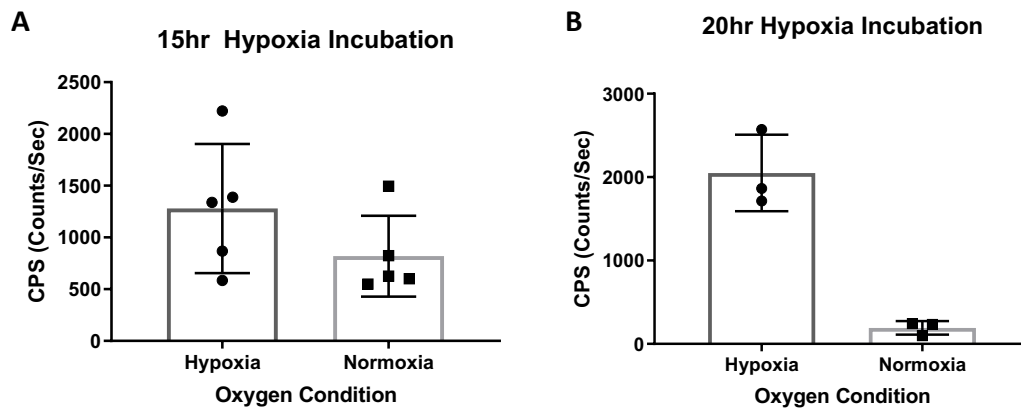
B

Fold Change of Hypoxia CD19t GEMs vs. Normoxic CD19t Macrophages

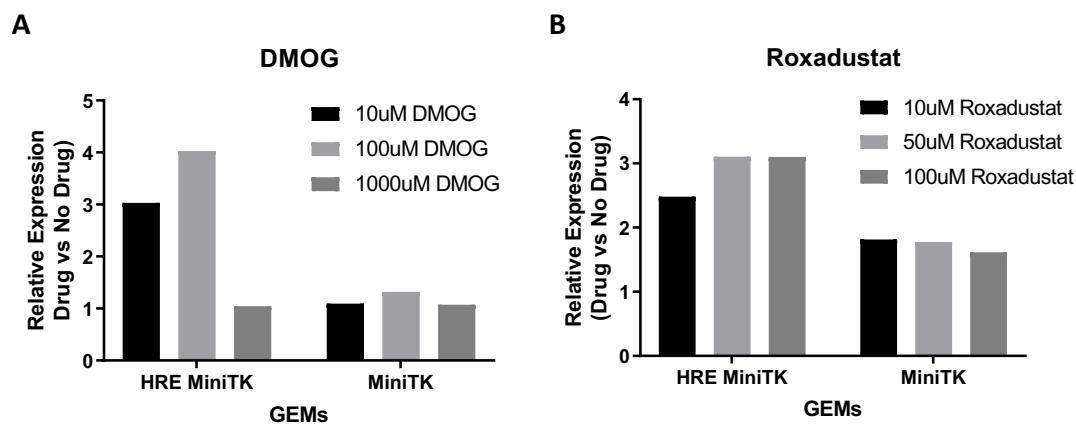
	Donor 1	Donor 2	Donor 3	Average
FLT1	1.25048	0.91445	0.97437	1.04643
CXCR4	1.27982	0.91045	0.95075	1.04701
ADAM8	1.25153	1.25153	0.81462	1.10589
GEM	1.38032	1.36136	0.87197	1.20455
TNFAIP3	1.48111	1.40339	0.87661	1.2537
MIF	1.78062	1.77981	1.77242	1.77762
FCGR2B	2.24374	2.31265	2.08733	2.21457

< -2 Between -1 and -2
 Between -1 and 0 Between 0 and 1
 Between 1 and 2 > 2

Supplemental Figure 1: Changes in gene expression due to hypoxia in untransduced and lentivirally transduced macrophages. (A) Genes differentially expressed by untransduced macrophages under hypoxic conditions. (B) Genes differentially expressed by CD19t GEMs under hypoxic conditions. Genes listed are selected based on average log₂ fold change greater than 1 or less than -1 (n=3 independent donors).



Supplemental Figure 2: 293T cells transfected with HRE-luciferase have increased luciferase activity following 20 hours in hypoxic conditions. (A) Luciferase assay of 293T cells transfected with HRE-Luciferase addgene plasmid incubated for 15 hours under hypoxia for luciferase assay (n=5 technical replicates). (B) Luciferase assay results for 293Ts cells transfected with HRE-Luciferase addgene plasmid and incubated cells for 20 hours in hypoxia (n=3 independent experiments, 6 technical replicates)



Supplemental Figure 3: The Hif1 α stabilizing drugs, DMOG and Roxadustat, induce increased luciferase activity in GEMs transduced with the HRE MiniTK eGFP:ffluc-t2a-CD19t. (A) Luciferase activity of HRE MiniTK and MiniTK eGFP:ffluc-t2a-CD19t GEMs incubated in 10 μ M, 100 μ M and 1000 μ M DMOG for 4 hours and detected by luciferase assay. Graphs show relative activity comparing DMOG treated to untreated cells. (n=1 independent donor, 6 technical replicates). (B) Luciferase activity of HRE MiniTK and MiniTK eGFP:ffluc-t2a-CD19t GEMs incubated in 10 μ M, 50 μ M and 100 μ M Roxadustat for 4 hours as measured by luciferase assay. Graphs depict relative activity with drug treatment compared to no drug (n=1 independent donor, 6 technical replicates).