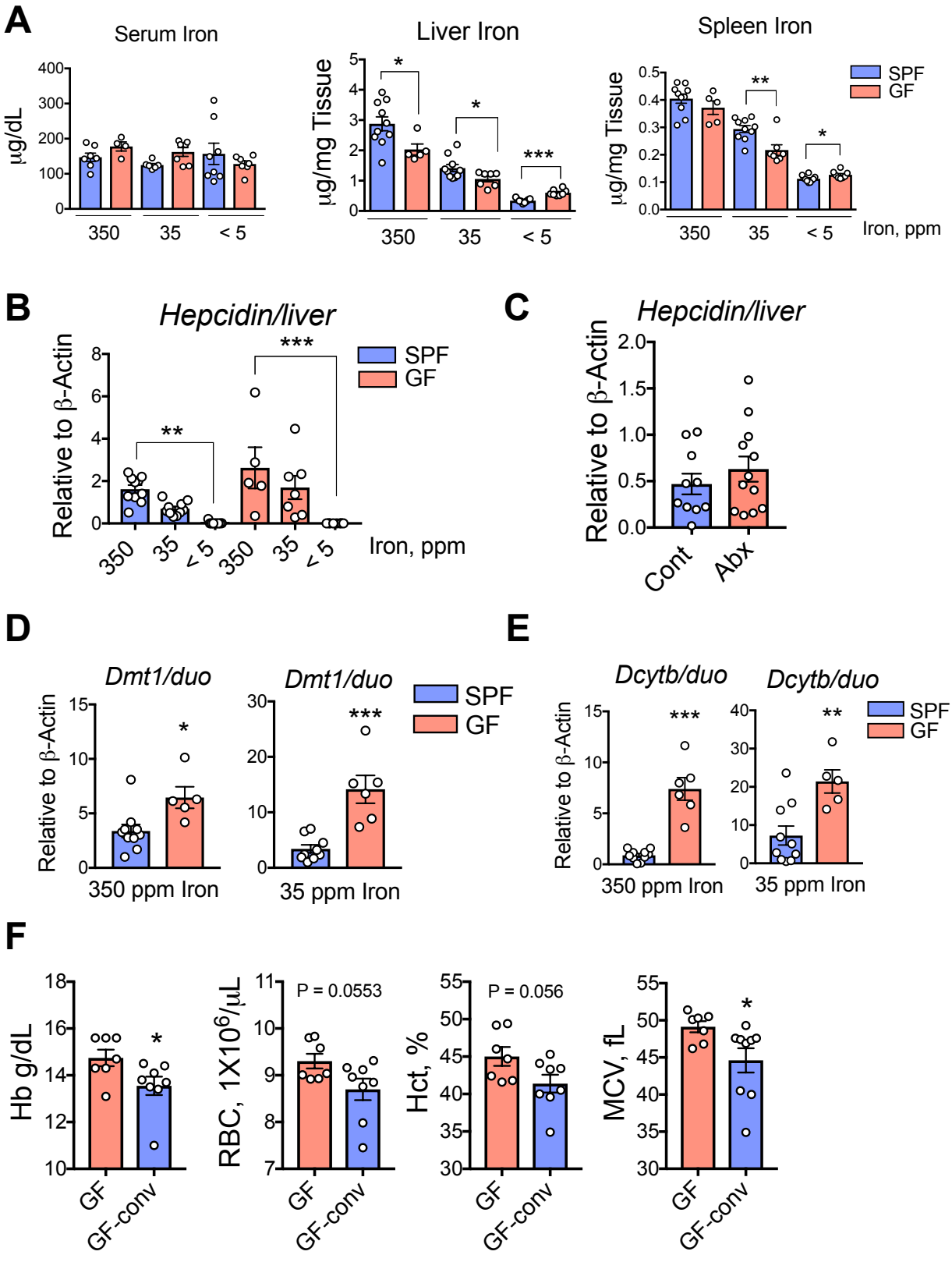
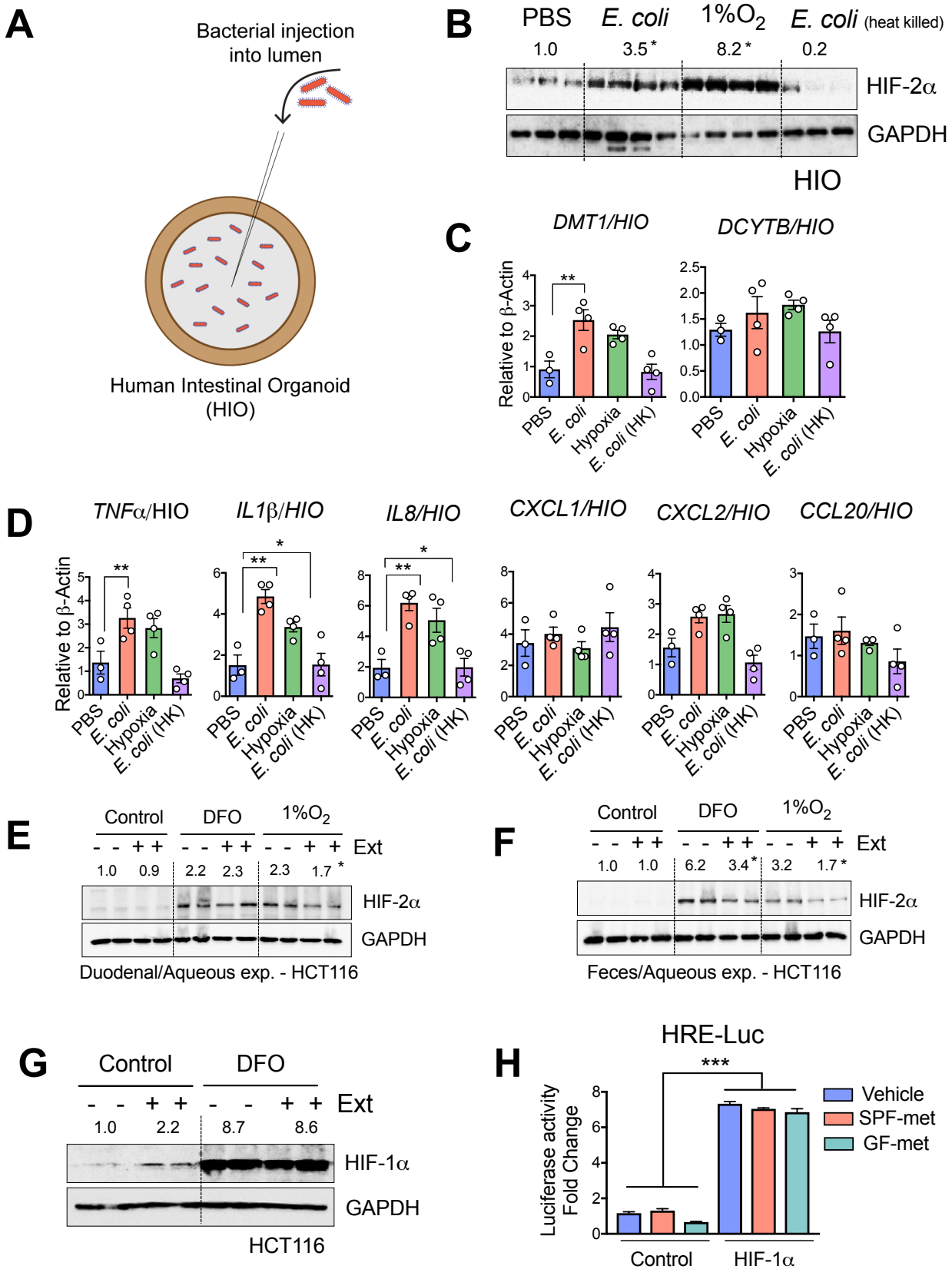
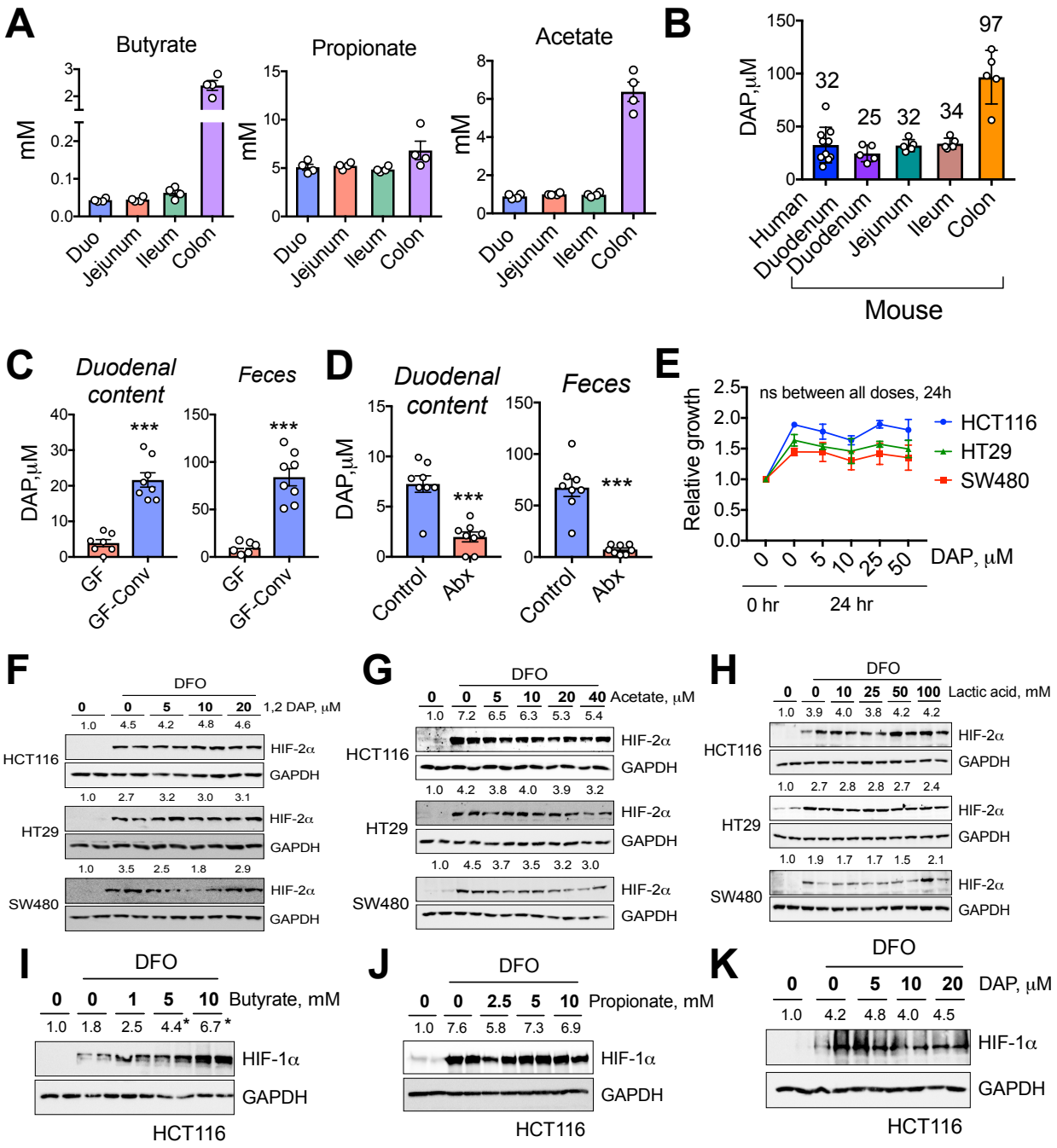

A
Serum Iron
µg/dL
400
300
200
100
0
350
35
< 5
Liver Iron
µg/mg Tissue
5
4
3
2
1
0
*
*
***
350
35
< 5
Spleen Iron
µg/mg Tissue
0.5
0.4
0.3
0.2
0.1
0.0
**
*
SPF
GF
350
35
< 5
Iron, ppm
B
Hepcidin/liver
Relative to β-Actin
8
6
4
2
0
**
***
SPF
GF
350
35
< 5
350
35
< 5
Iron, ppm
C
Hepcidin/liver
Relative to β-Actin
2.0
1.5
1.0
0.5
0.0
Cont
Abx
D
Dmt1/duo
Relative to β-Actin
15
10
5
0
*
350 ppm Iron
Dmt1/duo
30
20
10
0
***
35 ppm Iron
SPF
GF
E
Dcytb/duo
Relative to β-Actin
15
10
5
0
***
350 ppm Iron
Dcytb/duo
40
30
20
10
0
**
35 ppm Iron
SPF
GF
F
Hb g/dL
18
16
14
12
10
*
GF
GF-conv
RBC, 1X10⁶/µL
11
10
9
8
7
P = 0.0553
GF
GF-conv
Hct, %
55
50
45
40
35
30
P = 0.056
GF
GF-conv
MCV, fL
55
50
45
40
35
30
*
GF
GF-conv

Supplementary Figure 1. Related to Figure 1. A) Serum, liver and spleen iron levels in SPF and GF mice fed with 350-ppm, 35-ppm or < 5-ppm iron diet and **B)** Hepatic hepcidin gene expression analysis in them. **C)** Hepatic hepcidin gene expression analysis in control vs. Abx treated wild type SPF mice**.** Gene expression analysis of **D)** *Dmt1* and **E)** *Dcytb* in SPF and GF mice fed with 350-ppm or 35-ppm iron diet. **F)** CBC values of GF and GF-conv mice. All data are mean ± SEM. t-test (A(between corresponding iron diet groups), C, D, E, F) or one way ANOVA with Tukey's multiple comparisons test (B). * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.

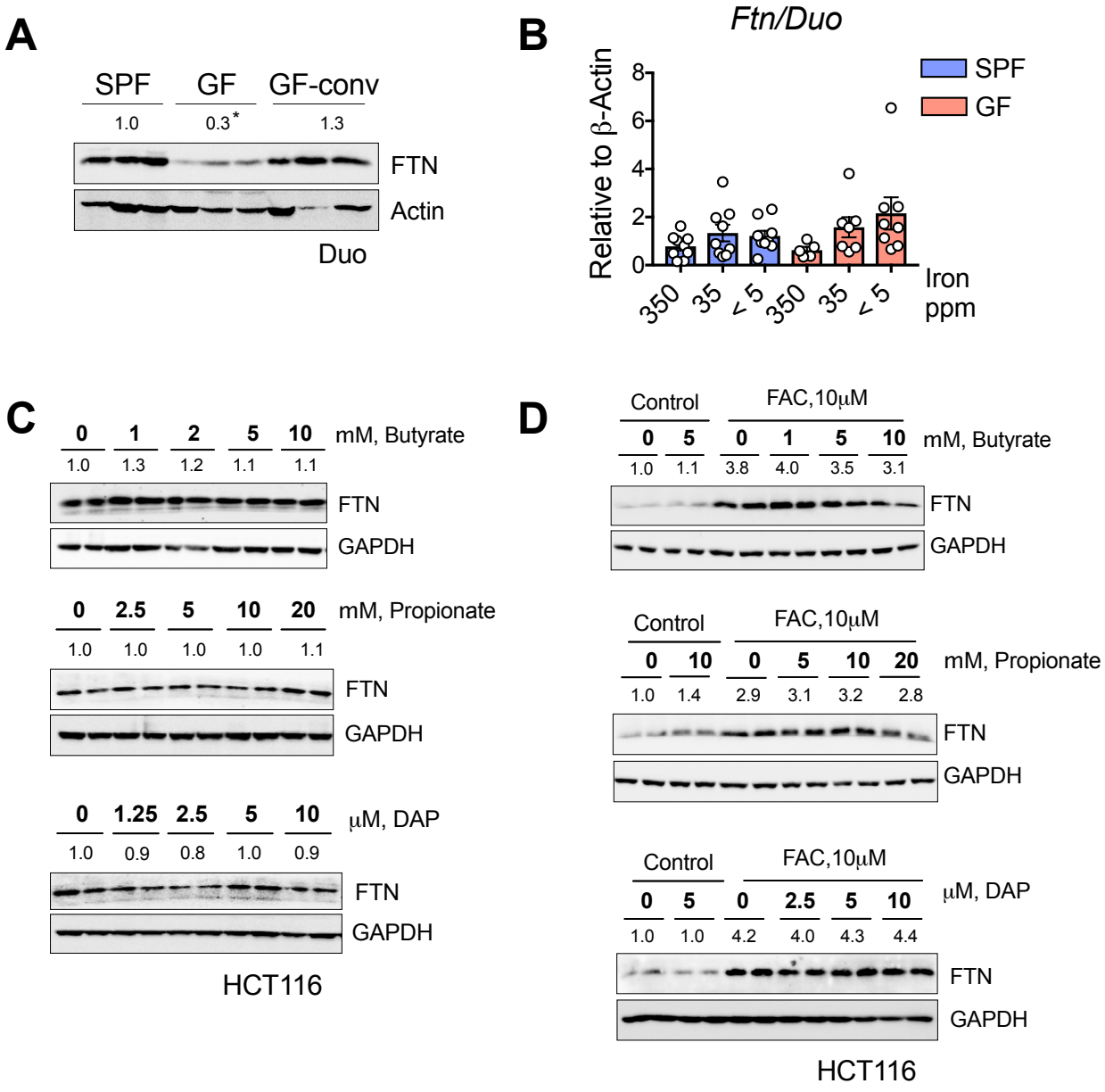

A
Bacterial injection into lumen
Human Intestinal Organoid (HIO)
B
PBS
E. coli
1%O2
E. coli (heat killed)
1.0
3.5*
8.2*
0.2
HIF-2α
GAPDH
HIO
C
DMT1/HIO
DCYTB/HIO
Relative to β-Actin
PBS
E. coli
Hypoxia
E. coli (HK)
D
TNFα/HIO
IL1β/HIO
IL8/HIO
CXCL1/HIO
CXCL2/HIO
CCL20/HIO
E
Control
DFO
1%O2
Ext
1.0 0.9 2.2 2.3 2.3 1.7*
HIF-2α
GAPDH
Duodenal/Aqueous exp. - HCT116
F
Control
DFO
1%O2
Ext
1.0 1.0 6.2 3.4* 3.2 1.7*
HIF-2α
GAPDH
Feces/Aqueous exp. - HCT116
G
Control
DFO
Ext
1.0 2.2 8.7 8.6
HIF-1α
GAPDH
HCT116
H
HRE-Luc
Luciferase activity Fold Change
Vehicle
SPF-met
GF-met
Control
HIF-1α

Supplementary Figure 2. Related to Figure 2. A) Schematic showing bacterial injection into a human intestinal organoid (HIO). HIOs were treated with PBS, 1% O_2, live or heat-killed *E. coli.* HIF-2α Western analysis (**B);** gene expression analyses of intestinal iron transporters **(C)** and HIF-dependent inflammatory markers **(D)**. **E) and F)** HIF-2α Western analyses of DFO- or 1% O_2 treated HCT116 cells followed by treatment with duodenal and fecal aqueous extracts (Ext), respectively. **G)** HIF-1α Western analysis of DFO-treated HCT116 cells followed by treatment with fecal organic extract (Ext). **H)** HIF response element (HRE) luciferase assay in HCT116 cells transfected with empty vector (control) or HIF-1α, followed by treatment with vehicle (DMSO) or fecal organic extracts from SPF- (SPF-met) and GF (GF-met) mice (n=3).
All data are mean ± SEM. One way ANOVA with Tukey's multiple comparisons test (C, D and H). Western analyses : Images were analyzed by Image J software from three independent experiments, representative image shown. Statistical significance compared with PBS group (B) and DFO-only treatment group (E, F and G). * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.


A
Butyrate
Propionate
Acetate
mM
Duo
Jejunum
Ileum
Colon
B
DAP,μM
32
25
32
34
97
Human Duodenum
Duodenum
Jejunum
Ileum
Colon
Mouse
C
Duodenal content
Feces
DAP,μM
***
GF
GF-Conv
D
Duodenal content
Feces
DAP,μM
***
Control
Abx
E
ns between all doses, 24h
Relative growth
HCT116
HT29
SW480
0 0 5 10 25 50
DAP, μM
0 hr
24 hr
F
DFO
0 0 5 10 20 1,2 DAP, μM
1.0 4.5 4.2 4.8 4.6
HCT116
HIF-2α
GAPDH
1.0 2.7 3.2 3.0 3.1
HT29
1.0 3.5 2.5 1.8 2.9
SW480
G
DFO
0 0 5 10 20 40 Acetate, μM
1.0 7.2 6.5 6.3 5.3 5.4
HCT116
1.0 4.2 3.8 4.0 3.9 3.2
HT29
1.0 4.5 3.7 3.5 3.2 3.0
SW480
H
DFO
0 0 10 25 50 100 Lactic acid, mM
1.0 3.9 4.0 3.8 4.2 4.2
HCT116
1.0 2.7 2.8 2.8 2.7 2.4
HT29
1.0 1.9 1.7 1.7 1.5 2.1
SW480
I
DFO
0 0 1 5 10 Butyrate, mM
1.0 1.8 2.5 4.4* 6.7*
HIF-1α
GAPDH
HCT116
J
DFO
0 0 2.5 5 10 Propionate, mM
1.0 7.6 5.8 7.3 6.9
HIF-1α
GAPDH
HCT116
K
DFO
0 0 5 10 20 DAP, μM
1.0 4.2 4.8 4.0 4.5
HIF-1α
GAPDH
HCT116

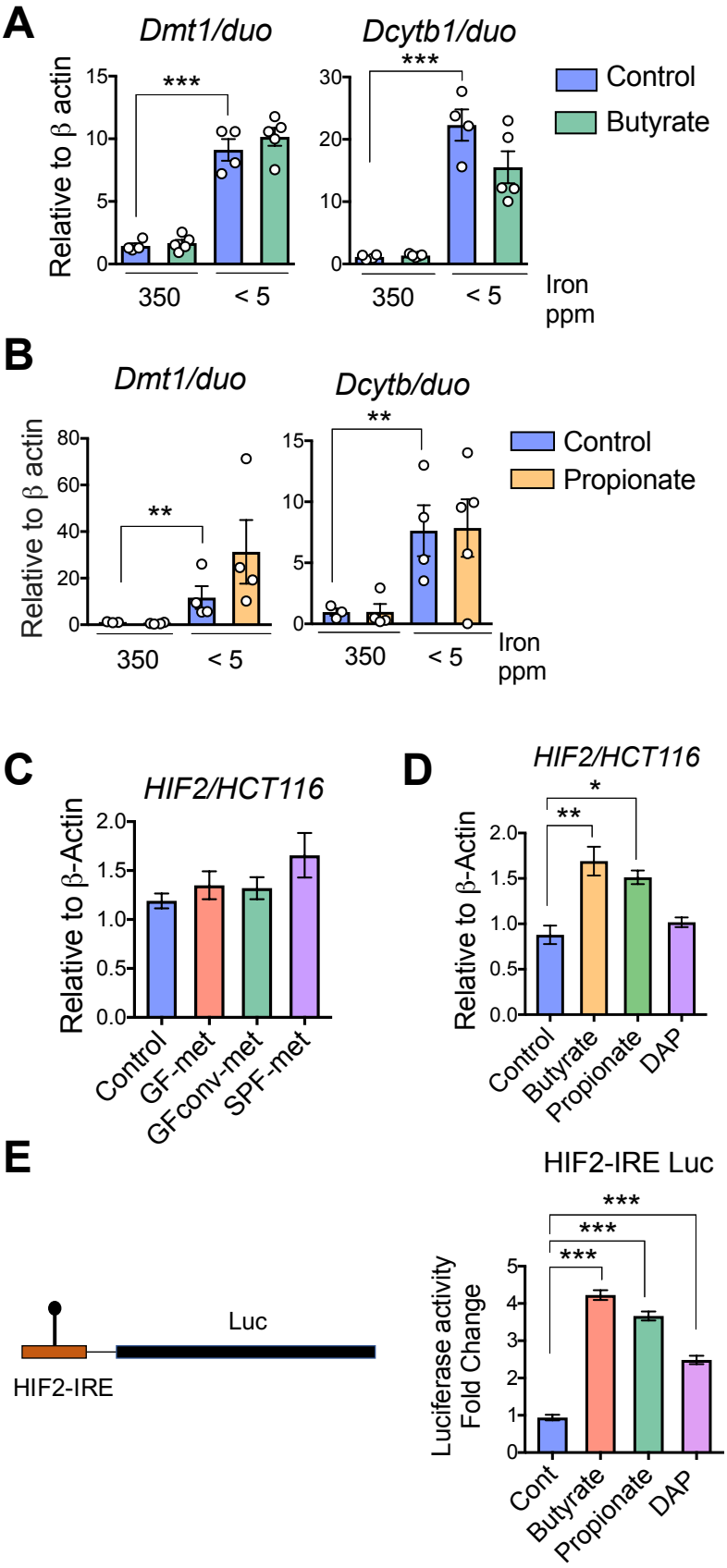
Supplementary Figure 3. Related to Figure 2. A) Physiological concentrations of butyrate, propionate and acetate in the mouse intestine. **B)** Mean physiological DAP concentrations in human duodenum and mouse intestine. **C)** DAP concentrations in GF and GF-conv duodenum and colon. **D)** DAP concentrations in wild type Abx-treated or –untreated (control) duodenum and colon. **E)** Cell growth assay of intestinal cell lines following DAP treatment (n=3). HIF-2α Western analysis of DFO-treated HCT116, HT29 and SW480 cells followed by dose-dependent treatment of 1,2 diaminopropane (1,2 DAP) **(F)**, acetate **(G)** and lactic acid **(H)**. HIF-1α Western analysis of DFO-treated HCT116 and HT29 cells followed by dose-dependent treatment of butyrate **(I)**, propionate **(J)** and DAP **(K)**.

All data are mean ± SEM. t-test (C and D); one way ANOVA with Tukey's multiple comparisons test (E). Western analyses (F-K): Images were analyzed by Image J software from three independent experiments, representative image shown. Statistical significance compared with DFO-only treatment group. * $P < 0.05$, *** $P < 0.001$.

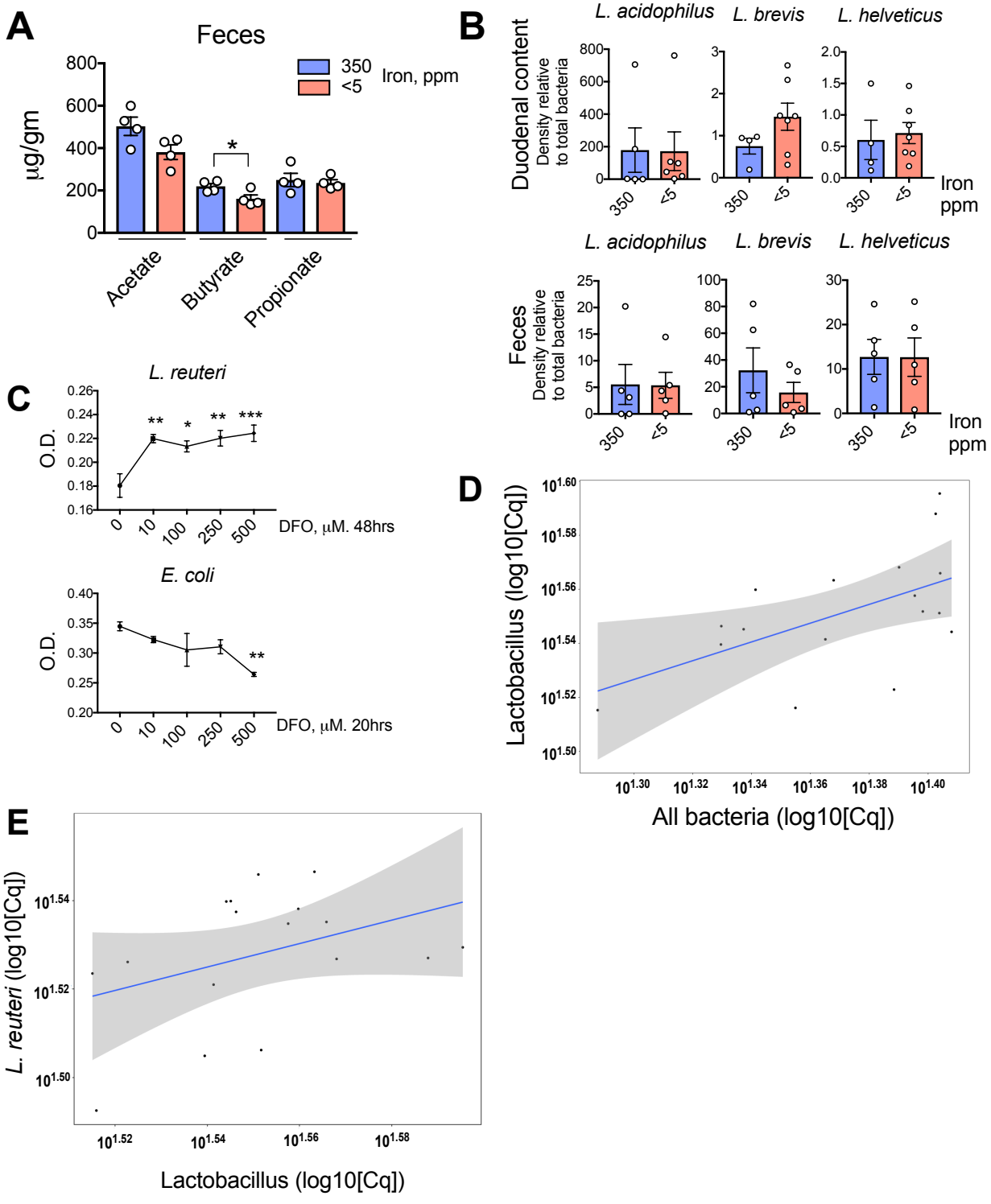

A
SPF
GF
GF-conv
1.0
0.3*
1.3
FTN
Actin
Duo
B
Ftn/Duo
Relative to β-Actin
SPF
GF
Iron
ppm
350
35
<5
C
0
1
2
5
10
mM, Butyrate
1.0
1.3
1.2
1.1
1.1
FTN
GAPDH
0
2.5
5
10
20
mM, Propionate
1.0
1.0
1.0
1.0
1.1
0
1.25
2.5
5
10
μM, DAP
1.0
0.9
0.8
1.0
0.9
HCT116
D
Control
FAC,10μM
0
5
1
10
mM, Butyrate
1.0
1.1
3.8
4.0
3.5
3.1
20
mM, Propionate
1.4
2.9
3.1
3.2
2.8
2.5
μM, DAP
4.2
4.0
4.3
4.4
HCT116

Supplementary Figure 4. Related to Figure 3. A) Comparative duodenal FTN Western analysis in SPF, GF and GF-conv mice. **B)** *Ftn* gene expression analysis in SPF and GF mice fed with 350-ppm, 35-ppm or <5-ppm iron diet. **C)** and **D)** FTN Western analysis in HCT116 cell with dose-dependent butyrate, propionate or DAP without or with FAC (10μM) pretreatment respectively.

All data are mean ± SEM. Western analyses : Images were analyzed by Image J software from three independent experiments, representative image shown. Statistical significance compared with SPF group (A), no treatment group (C and D). * $P < 0.05$


A
Dmt1/duo
Dcytb1/duo
Relative to β actin
***
***
Control
Butyrate
350
< 5
Iron ppm
B
Dmt1/duo
Dcytb/duo
Relative to β actin
**
**
Control
Propionate
350
< 5
Iron ppm
C
HIF2/HCT116
Relative to β-Actin
Control
GF-met
GFconv-met
SPF-met
D
HIF2/HCT116
Relative to β-Actin
Control
Butyrate
Propionate
DAP
E
Luc
HIF2-IRE
HIF2-IRE Luc
Luciferase activity Fold Change
Cont
Butyrate
Propionate
DAP

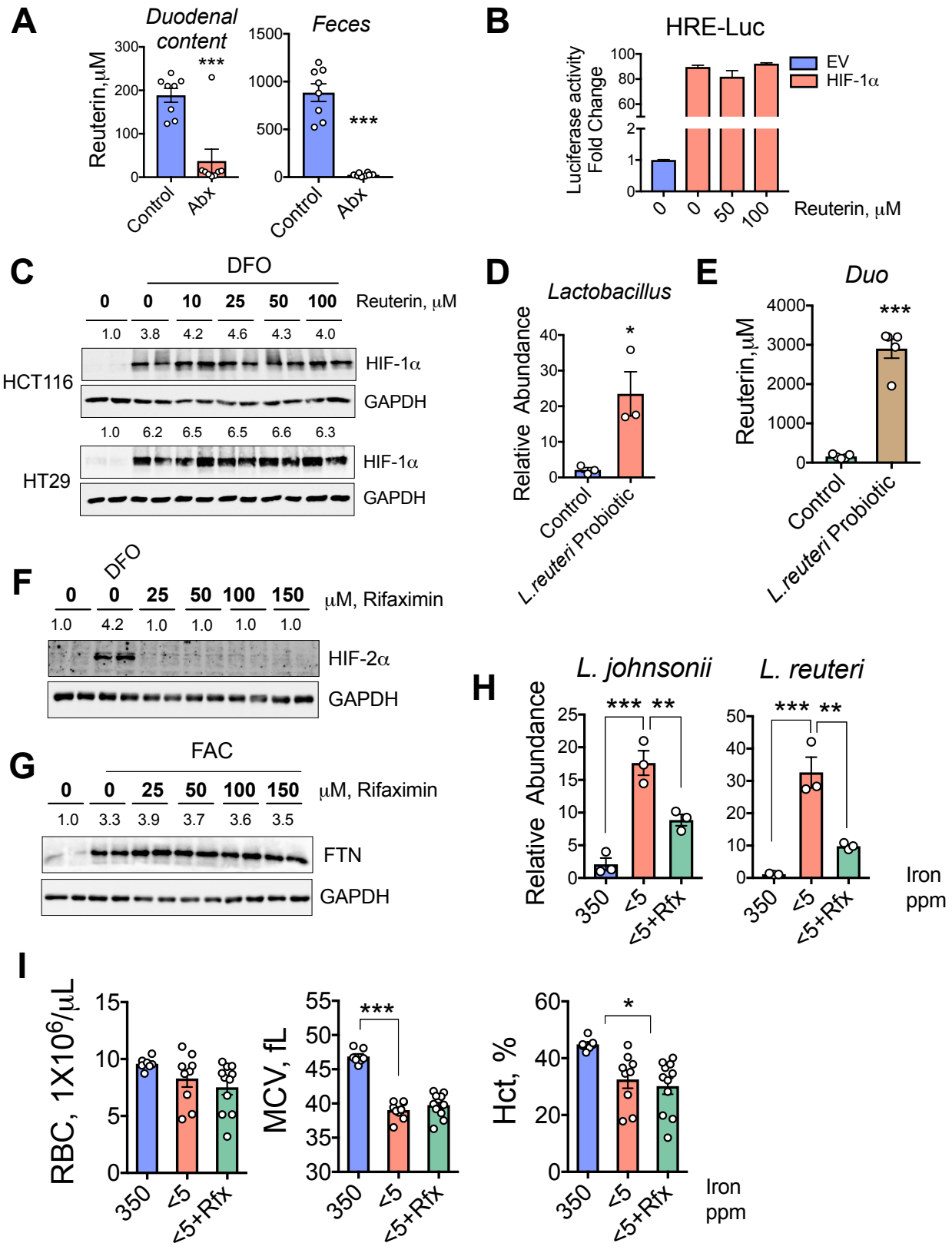
Supplementary Figure 5. Related to Figure 4. A) SPF mice were fed with 350-ppm and <5-ppm iron diet with or without butyrate supplementation in drinking water. Duodenal *Dmt1* and *Dcytb* gene expression analysis performed. **B)** SPF mice were fed with 350-ppm and <5-ppm iron diet with or without propionate supplementation in drinking water. Duodenal *Dmt1* and *Dcytb* gene expression analysis performed. **C)** *HIF-2α* gene expression analysis in HCT116 cells treated with GF-met, GF-conv-met or SPF-met (n=3). **D)** *HIF-2α* gene expression analysis in HCT116 cells treated with Butyrate (10mM), propionate (5mM) or DAP (10μM) (n=3). **E)** Schematic showing HIF2-IRE luciferase construct (upper panel) and HIF2-IRE luciferase assay in HCT116 cells treated with Butyrate (10mM), propionate (5mM) or DAP (10μM) (n=3).
All data are mean ± SEM. One way ANOVA with Tukey's multiple comparisons test (A-E).
** $P < 0.01$, *** $P < 0.001$.


A
Feces
μg/gm
800
600
400
200
0
350
<5
Iron, ppm
*
Acetate
Butyrate
Propionate
B
L. acidophilus
L. brevis
L. helveticus
Duodenal content
Density relative
to total bacteria
Iron
ppm
Feces
C
L. reuteri
O.D.
DFO, μM. 48hrs
E. coli
DFO, μM. 20hrs
D
Lactobacillus (log10[Cq])
All bacteria (log10[Cq])
E
L. reuteri (log10[Cq])
Lactobacillus (log10[Cq])

Supplementary Figure 6. Related to Figure 6. A) SPF mice were fed with 350-ppm and <5-ppm iron diet for 2 weeks, SCFA (acetate, butyrate and propionate) analysis in the feces. **B)** Comparative analysis of *L.acidophilus*, *L. brevis* and *L.brevis* density by species specific PCR from duodenal content and feces. **C)** *L. reuteri* and *E. coli* growth *in vitro* with dose-dependent DFO treatment (n=3). DNA were extracted from duodenal aspirates of 17 healthy human subjects; **D)** lactobacillus abundance (relative to all bacteria) and **E)** *L. reuteri* abundance (relative to total lactobacilli) shown by Cq values of bacteria-specific PCR.

All data are mean ± SEM. t-test (A,corresponding diet-groups with respcets to SCFA; B); one way ANOVA with Tukey's multiple comparisons test (C).

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.


A
Duodenal content
Feces
Reuterin, μM
***
Control
Abx
B
HRE-Luc
Luciferase activity Fold Change
EV
HIF-1α
Reuterin, μM
C
DFO
Reuterin, μM
HCT116
HT29
HIF-1α
GAPDH
D
Lactobacillus
Relative Abundance
Control
L.reuteri Probiotic
E
Duo
Reuterin, μM
F
DFO
μM, Rifaximin
HIF-2α
GAPDH
G
FAC
μM, Rifaximin
FTN
GAPDH
H
L. johnsonii
L. reuteri
Relative Abundance
350
<5
<5+Rfx
Iron ppm
I
RBC, 1X10^6/μL
MCV, fL
Hct, %
Iron ppm

Supplementary Figure 7. Related to Figure 7. A) Reuterin concentrations in wild type Abx-treated or –untreated (control) duodenum and colon. **B)** HRE luciferase assay in HCT116 cells transfected with empty vector (control) or HIF-2α followed by dose-dependent reuterin treatment (n=3). **C)** HIF-1α Western analysis of DFO-treated HCT116 and HT29 cells followed by dose-dependent treatment of reuterin. **D)** Analysis of Lactobacillus growth in fecal DNA and **E)** Duodenal reuterin production in *L. reuteri* probiotic treated mice. **F)** HIF-2α Western analysis of HCT116 cells with dose-dependent treatment of Rifaximin. DFO (200μM) used as positive control for HIF-2α induction. **G)** FTN Western analysis of FAC (10μM) treated HCT116 cells followed by dose dependent treatment of Rifaximin. **H)** & **I)** Wild type SPF mice were fed with 350-ppm or <5-ppm iron diet for 1 week followed by 350-ppm, <5-ppm or rifaximin (Rfx) (20 mg/kg/day)-blended <5-ppm diet for another 2 weeks; *L. johnsonii* and *L. reuteri* growth analysis from fecal DNA **(H)** and hematological (RBC, MCV and Hct) analysis **(I)** performed.

All data are mean ± SEM. t-test (A and D) or one way ANOVA with Tukey's multiple comparisons test (B, H and I). Western analyses: Images were analyzed by Image J software from three independent experiments, representative image shown. Statistical significance compared with DFO-only group (C), no treatment group (F) or FAC-only group (G). * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

Supplementary Table 1. Related to Figure 1

	SPF			GF		
	A	**B**	**C**	**D**	**E**	**F**
Duodenum	**350-ppm** n=10	**35-ppm** n=9	**<5-ppm** n=8	**350-ppm** n=5	**35-ppm** n=7	**<5-ppm** n=8
Ankrd37	25.58	32.40	519.63	75.55	128.75	1338.11 **vs C: ******
Steap4	2.7	2.26	6.26	4.2	5.2	8.45
Arnt	1.13	0.84	1.23	1.71	2.07 **vs B: ******	2.15 **vs C: ****
TNF-α	0.35	0.18	0.55	0.77	0.47	0.48
CxCl1	0.53	0.61	0.62	0.63	0.74	1.22
CxCl2	0.64	0.37	1.62	0.17	.18	0.89
CCl20	0.74	0.65	0.97	0.18	0.72	0.81
Il-1β	1.1	0.47	0.95	0.05	0.05	0.97
Tfr1	1.09	2.28	5.24	0.25	3.18	4.71
Heph	0.72	0.76	0.87	0.27	0.27	1.34
Lcn2	0.42	0.68	0.42	0.22	0.42	0.67
Liver	**350-ppm** n=10	**35-ppm** n=9	**<5-ppm** n=8	**350-ppm** n=5	**35-ppm** n=7	**<5-ppm** n=8
Dmt1	0.54	0.56	0.89	0.22	0.55	0.78
Dcytb	0.86	0.75	1.07	0.24	0.9	1.43
Fpn	0.72	0.45	0.45	0.26	0.58	0.38
FtnH	1.00	0.82	0.95	0.56	1.29	1.01
Tfr1	0.37	0.39	2.89	0.29	0.82	1.91
Tfr2	1.1	1.18	1.19	0.59	1.12	1.08
Hfe	0.61	0.84	0.76	0.45	0.59	0.79
Ankrd37	0.74	0.67	1.06	0.78	2.29	1.35
Vegf	1.23	1.45	0.69	0.81	0.88	0.87
Pdk1	2.01	1.28	0.91	1.2	2.71	1.7
Pgk1	0.58	0.33	0.32	0.18	0.4	0.34
Glut1	0.62	0.59	0.37	0.19	0.48	0.42
Spleen	**350-ppm** n=10	**35-ppm** n=9	**<5-ppm** n=8	**350-ppm** n=5	**35-ppm** n=7	**<5-ppm** n=8
Dmt1	0.73	0.94	0.91	0.84	0.83	1.09
Tfr1	0.51	0.87	0.71	0.45	0.31	1.24
Hmox	0.35	0.36	0.43	0.30	0.19	0.23
Ankrd37	0.53	0.48	0.79	0.71	0.5	0.54
Dcytb	0.68	0.52	0.48	0.79	1.03	0.74
Fpn	0.4	0.39	0.2	0.54	0.3	0.35
Pdk1	0.73	0.85	0.71	0.61	0.76	0.6
Pgk1	0.49	0.49	0.52	0.43	0.32	0.52
Il-1β	0.41	0.19	0.54	0.38	0.17	0.4
Fam132b	0.96	1.26	2.52	0.70	1.04	3.17

Duodenal, Hepatic and Splenic gene expression analyses of HIF-dependent inflammatory and HIF-independent iron genes in SPF and GF mice fed with 350-ppm-, 35-ppm or < 5-ppm iron diet. Mean values presented. One way ANOVA with Tukey's multiple comparisons test. Significance (if any) shown only for SPF vs GF between corresponding diet groups. ** $P < 0.01$, *** $P < 0.001$.

Supplementary Table 2. Related to Figure 2

Name	Cat # and Company	Number	Fold change HRE-Luc
LPS/ATP	ATP: A2383 SIGMA-ALDRICH	1	-0.607
Acetate	W302406 SIGMA-ALDRICH	2	-0.177
Propionate	P1880 SIGMA	3	-0.500
Succinic acid	398055 SIGMA-ALDRICH	4	-0.185
Formate	247596 SIGMA-ALDRICH	5	0.116
Fumaric acid	240745 SIGMA-ALDRICH	6	-0.155
3-Phenylpropionic acid	W288918 ALDRICH	7	0.025
Valeric acid	240370 ALDRICH	8	0.121
2'-Deoxycytidine 5'-monophosphate	D7625 SIGMA	9	-0.170
m-Toluic acid	T36609 ALDRICH	10	-0.241
p-Toluic acid	T36803 ALDRICH	11	-0.108
4-Hydroxyphenylacetic acid	H50004 ALDRICH	12	0.100
N-Methyl-DL-alanine	02676 SIGMA-ALDRICH	13	-0.138
Pyridoxamine dihydrochloride	287091 ALDRICH	14	0.224
2'-Deoxyadenosine 5'-monophosphate	D6375 SIGMA	15	-0.718
Indole-3-acetamide	286281 SIGMA-ALDRICH	16	-0.233
N-Acetyl-L-aspartic acid	00920 SIGMA-ALDRICH	17	0.056
N-Acetyl-L-glutamic acid	855642 ALDRICH	18	0.160
N-Acetylneuraminic acid	A0812 SIGMA	19	0.187
4-Pyridoxic acid	P9630 ALDRICH	20	0.194
D-Pantothenic acid hemicalcium salt	21210 SIGMA	21	-0.325
α-Ketoglutaric acid	75890 SIGMA-ALDRICH	22	0.141
Cytidine 5'-monophosphate	C1131 SIGMA	23	-0.636
3-(4-Hydroxyphenyl)propionic acid	H52406 ALDRICH	24	0.205
γ-Aminobutyric acid	A2129 SIGMA	25	-0.155
5-Aminovaleric acid	123188 ALDRICH	26	0.072
L-Homoserine	H6515 SIGMA	27	-0.145
L-Pipecolic acid	P2519 SIGMA	28	-0.286
L-Glyceric acid sodium salt	51738 SIGMA	29	-0.059
L-Tyrosine methyl ester	T90808 ALDRICH	30	0.345
Piperidine	104094 SIGMA-ALDRICH	31	0.036
Taurine	T0625 SIGMA	32	-0.018
Tyramine	T90344 ALDRICH	33	0.075
Urocanic acid	859796 ALDRICH	34	-0.295
(3-Carboxypropyl)trimethylammonium chloride	403245 ALDRICH	35	-0.148
N-Acetyl-D-glucosamine	A8625 SIGMA	36	0.098
Nicotinic acid	N4126 SIGMA-ALDRICH	37	-0.186

Name	Cat # and Company	Number	Fold change HRE-Luc
Pyridoxal hydrochloride	P9130 SIGMA	38	-0.659
Pyridoxine	P5669 SIGMA	39	-0.086
Sarcosine	131776 ALDRICH	40	-0.013
N,N-Dimethylglycine	D1156 SIGMA	41	0.132
Cytosine	C3506 SIGMA	42	0.234
Uracil	U0750 SIGMA	43	-0.164
Adenine	A2786 SIGMA	44	-0.126
Guanine	G11950 ALDRICH	45	-0.193
Cytidine	C122106 ALDRICH	46	0.199
1,3-Diaminopropane	D23602 ALDRICH	47	-0.797
Amino-2-propanol	110248 ALDRICH	48	-0.151
Putrescine	P7505 SIGMA	49	0.003
Cadaverine	33220 ALDRICH	50	-0.104
Glutaric acid	G3407 ALDRICH	51	0.026
5-Hydroxyindole-3-acetic acid	H8876 SIGMA	52	-0.171
Ornithine	O2375 SIGMA	53	0.290
Beta-alanine	146064 ALDRICH	54	-0.265
DL-3-Aminoisobutyric acid	217794 ALDRICH	55	0.071
Isobutyric acid	I1754 SIGMA	56	-0.129
Lactic acid	W261114 SIGMA-ALDRICH	57	0.098
Urea	U5378 SIGMA-ALDRICH	58	0.020
DL-Malic acid	240176 SIGMA-ALDRICH	59	-0.102
Xanthine	X0626 SIGMA-ALDRICH	60	-0.477
L-Citrulline	C7629 SIGMA-ALDRICH	61	-0.457
Hypoxanthine	H9377 SIGMA-ALDRICH	62	-0.166
L-Methionine	M9625 SIGMA-ALDRICH	63	-0.391
Spermidine	S2626 SIGMA-ALDRICH	64	-0.302
LPS	L2630 SIGMA-ALDRICH	65	-0.463
Butyrate	303410 SIGMA-ALDRICH	66	-0.839
E. coli (live)		67	-0.461
E. coli (heat-killed)		68	0.022

Supplementary Table 3: Primers. Related to STAR Methods

A. qPCR Primers

Mouse genes	Forward (5'--3')	Reverse (5'--3')
β-actin	TATTGGCAACGAGCGGTTCC	GGCATAGAGGTCTTTACGGATGT
Dmt1	TGTTTGATTGCATTGGGTCTG	CGCTCAGCAGGACTTTCGAG
DcytB	CATCCTCGCCATCATCTC	GGCATTGCCTCCATTTAGCTG
Hepcidin	CTATCTCCATCAACAGATGAGACAGA	AACAGATACCACACTGGGAA
Ankrd37	CGGCCTTGCGTGCTTT	TGGTTGAGGTCAGCACCTGTT
STEAP4	GGAAACTCATCTGCATGTGCT	CTAGAAGGCAGAGCCCACC
ARNT	CAAGCCATCTTTCCTCACTGATC	ACACCACCCGTCCAGTCTCA
TNF-α	AGGGTCTGGGCCATAGAACT	CCACCACGCTCTTCTGTCTAC
CXCL1	TCTCCGTTACTTGGGGACAC	CCACACTCAAGAATGGTCGC
CXCL2	TCCAGGTCAGTTAGCCTTGC	CGGTCAAAAAGTTTGCCTTG
CCL20	TGTACGAGAGGCAACAGTCG	TCTGCTCTTCCTTGCTTTGG
IL-1β	AAGAGCTTCAGGCAGGCAGTATCA	TGCAGCTGTCTAGGAACGTCA
TfR1	GGAAGACTCTGCTTTGCAGCTAT	GCCCAGGTAGCCCATCATGA
Heph	FTGGGCTTCCTAGGACCACTGT	RGCAAAATTCTTCAGGTGAATCAAG
Lipocalin2	CACCACGGACTACAACCAGTTCGC	TCAGTTGTCAATGCATTGGTCGGTG
TfR2	TAGCCCTCCAACCACTCTGT	CTCTTCCATGGTCAGCAATG
HFE	CACCGCGTTCACATTCTCTAA	CTGGCTTGAGGTTTGCTCC
VEGF	CCACGTCAGAGAGCAACATCA	TCATTCTCTCTATGTGCTGGCTTT
PDK1	TTACTCAGTGGAACACCGCC	GTTTATCCCCCGATTCAGGT
PGK1	CAAATTTGATGAGAATGCCAAGACT	TTCTTGCTGCTCTCAGTACCACA
Glut1	CAAGTCTGCATTGCCCATGAT	CCAGCTGGGAATCGTCGTT

Hmox1	AGGTACACATCCAAGCCGAGA	CATCACCAGCTTAAAGCCTTCT
Fam132b	ATGGGGCTGGAGAACAGC	TGGCATTGTCCAAGAAGACA
Ftnh1	GGCAAAGTTCTTCAGAGCCA	CATCAACCGCCAGATCAAC
Human genes	**Forward (5'--3')**	**Reverse (5'--3')**
β-actin	GTTGTCGACGACGAGCG	GCACAGAGCCTCGCCTT
DMT1	GCTCTCATACCCATCCTCACATT	TCCATTGGCAAAGTCACTCATT
DCYTB	CATGGTCACCGGCTTCGT	CAG GTCCACGGCAGTCTGTA
TNF-α	AGATGATCTGACTGCCTGGG	CTGCTGCACTTTGGAGTGAT
IL-1β	AAGCCCTTGCTGTAGTGGTG	GAAGCTGATGGCCCTAAACA
IL8	AGCACTCCTTGGCAAAACTG	CGGAAGGAACCATCTCACTG
CXCL1	AACAGCCACCAGTGAGCTTC	GAAAGCTTGCCTCAATCCTG
CXCL2	CTTCAGGAACAGCCACCAAT	CACACTCAAGAATGGGCAGA
CCL20	CGTGTGAAGCCCACAATAAA	GTGCTGCTACTCCACCTCTG
HIF-2α	CATCCCGGGACTTCTCCT	GTCTGAACGTCTCAAAGGGC

B. Cloning Primers

	Forward (5'--3')	**Reverse (5'--3')**
Mouse Hif-2α G324E	TGTAGATGACCGTCTCCTGGGTCTCCAGC	GCTGGAGACCCAGGAGACGGTCATCTACA
Mouse Hif-2α S305M	CCGGTACTGGCCCATTACCACCTGCCCCTTGGTG	CACCAAGGGGCAGGTGGTAATGGGCCAGTACCGG

C. Bacterial Primers

	Forward (5'--3')	Reverse (5'--3')
All Bacteria	ACTCCTACGGGAGGCAGCAG	ATTACCGCGGCTGCTGG
L. johnsonii	TCTTCCAATTTTTCGGCAGT	CAGTGGGAGCTACAGAAGCA
L. reuteri	ACCGAGAACACCGCGTTATTT	CATAACTTAACCTAAACAATCAAAGATTGTCT
L. acidophilus	GAAAGAGCCCAAACCAAGTGATT	CTTCCCAGATAATTCAACTATCGCTTA
L. brevis	GCACAAGATGGCTCATGACGTTAAGACTAAGG	GTCTAAGCTCGTATCAACCCCACGGG
L. helveticus	GTCTAAGCTCGTATCAACCCCACGGG	GATCAACAATGACTTGCCTTGTTGAACAATTTC

D. CRISPR guide RNA for mouse NCOA4, exon 3

5'-AGAGGTGTGGCTCAATGAAC-3'