

Table S1 | Gene list of PCA plot. Related to Figure 1A.

**Lgr5-GFP high  
(ISC)**

ETS2  
SERINC3  
UTRN  
PTMS  
VDR  
ZFP703  
NOTCH1  
ZFP36L2  
PRELP  
IRF2BP2  
NLRP6  
ZBTB38  
CDK6  
SOX9  
SOAT1  
AXIN2 \*  
RNF43  
HMGCS2 \*  
TNS3  
NAV1  
PIK3R1  
MYB  
RGM8  
LRIG1  
APP  
LGR5 \*  
GRB7  
IGFBP4  
LIMK2  
CD81  
KCNQ1  
TUBB5  
EIF4B  
NEDD4  
IFITM3  
AQP4  
CLDN2  
HSP90AB1  
PRRC2B  
MLXIP  
PABPC1  
MKL2  
CERS6  
MYO7B  
NFIX  
MYC  
SEMA5A  
CD44  
ATP1B1  
DDX17  
OGT  
CFTR  
KCNE3  
RPL4  
CDCA7  
SMOC2  
SDC4  
SLC12A2  
OLFM4 \*  
STRA6L  
PICALM  
EHF  
CPS1  
NCL  
PPP1R1B  
AQP1  
EIF3F  
CDK4  
RCC2  
TRIM28  
EEF2  
CLCA3B  
PROM1  
TXNIP  
H2-EB1  
2210407C18RIK

**Lgr5-GFP low  
(Progenitor)**

SERPINB1A  
MAOA  
DSTN  
GM1123  
SPINT2  
RAB1  
CALM1  
TPD52  
UGT2B34  
TM9SF2  
ARF4  
SERP1  
PDIA6  
ENPEP  
P4HB  
MTTP  
PAPSS2  
CYP4F14  
VIL1  
FTH1  
MVP  
XBP1  
ANXA13  
DDOST  
TFF3  
CES2E  
DGAT1  
ANXA2  
BPNT1  
KRT8  
LGALS4  
TMBIM6  
ALDOB  
RBP2  
GALNT6  
GUCA2A  
CYB5B  
CDH17  
HMGCS1  
RPN1  
CLTC  
NFE2L2  
GCNT3  
KLF4  
ERN2  
GFPT1  
SPINK4  
SLC26A2  
MUC2  
FCGBP  
IQGAP2  
ANO7  
CHGB  
HEPACAM2  
TXNDC5  
QSOX1  
WARS  
ATP2A3  
AGR2  
CHGA  
SLC12A8  
LYPD8  
LASP1  
GOLM1  
CCL9  
STT3A  
SSR3  
PDIA3  
GALNT7  
DNAJC10

ITLN1  
SSR1  
KRT20  
CCL6  
ZG16  
STARD10  
LGALS2  
SEC61A1  
PMM2  
HSPA5  
SURF4  
ATP6V0A2  
MGAT4A  
CYB5R3  
CAPNS1  
DMBT1  
ZZEF1  
HYOU1  
SLC35C1  
COPA  
MLPH  
WDR1  
CREB3L1  
NUCB1  
CALR  
RAP1GAP  
RRBP1  
ANPEP  
MYO15B  
KDEL2  
HSP90B1  
FER1L6  
CDHR5  
MYO1A  
MISP  
SEMA4G  
MAPK3  
HDLBP  
LIMA1  
CANX  
42618  
UCP2  
FZD5  
SMPD3  
UBA1  
C77080  
MYO1D  
CNNM4  
OGDH  
NOMO1  
SCIN  
CAR4

CLCA1  
ACO2  
SLC7A8  
AHCYL2  
LDLR  
SPDEF  
GSR  
CS  
MGST3  
CKMT1  
ST3GAL4  
GNA11  
PGD  
KRT19  
MDH2  
SMIM24  
ALPI  
SIS  
PFKP  
CORO2A  
NPC1L1  
ALDOA  
ATP2A2  
CLDN15  
CDHR2  
AOC1  
GPA33  
RPN2  
LRRCS9  
CLINT1  
GPX1  
LDHA  
CPT1A  
VASP  
LYZ1  
TM9SF3  
UQCRC1  
ATP5D  
CLUH  
ATP5A1  
PFN1  
UQCRC2  
SDHD  
PRDX1  
MDH1  
TSPAN8  
PYCARD  
CYC1  
ATP5B  
CLDN7  
PLAC8  
FABP2  
TXN1  
REG1  
FABP1  
ETS2

Table S2 | Cell counts in each cell type by sample. Related to Figure 3D.

	<b>KO_1</b>	<b>KO_2</b>	<b>WT_1</b>	<b>WT_2</b>
<b>Enterocyte</b>	500	964	795	1903
<b>Enteroendocrine</b>	30	26	76	49
<b>Goblet</b>	677	602	892	731
<b>Paneth</b>	302	312	38	89
<b>Stem</b>	1377	1377	1273	878
<b>TA</b>	559	875	1017	1394
<b>Tuft</b>	107	85	173	61

Table S4 Ingredient composition of Ketogenic diet (KTD). Related to METHOD DETAILS.

<b>Ketogenic</b>		
Product #	D06040601	
%	gm	kcal
<b>Protein</b>	23	15
<b>Carbohydrate</b>	8	5
<b>Fat</b>	55	80
Total		100
kcal/gm	6.1	
Ingredient	gm	kcal
Casein	151	604
L-Cystine	1.5	6
Corn Starch	40	160
Maltodextrin 10	0	0
Sucrose	0	0
Cellulose	50	0
Soybean Oil	25	225
Lard	336	3024
Milk Fat, Anhydrous	0	0
Mineral Mix S10026	10	0
DiCalcium Phosphate	13	0
Calcium Carbonate	5.5	0
Potassium Citrate, 1 H2O	16.5	0
Vitamin Mix V10001	10	40
Choline Bitartrate	2	0
Cholesterol	0	0
FD&C Yellow Dye #5	0.025	0
FD&C Red Dye #40	0	0
FD&C Blue Dye #1	0.025	0
<b>Total</b>	<b>660.55</b>	<b>4059</b>