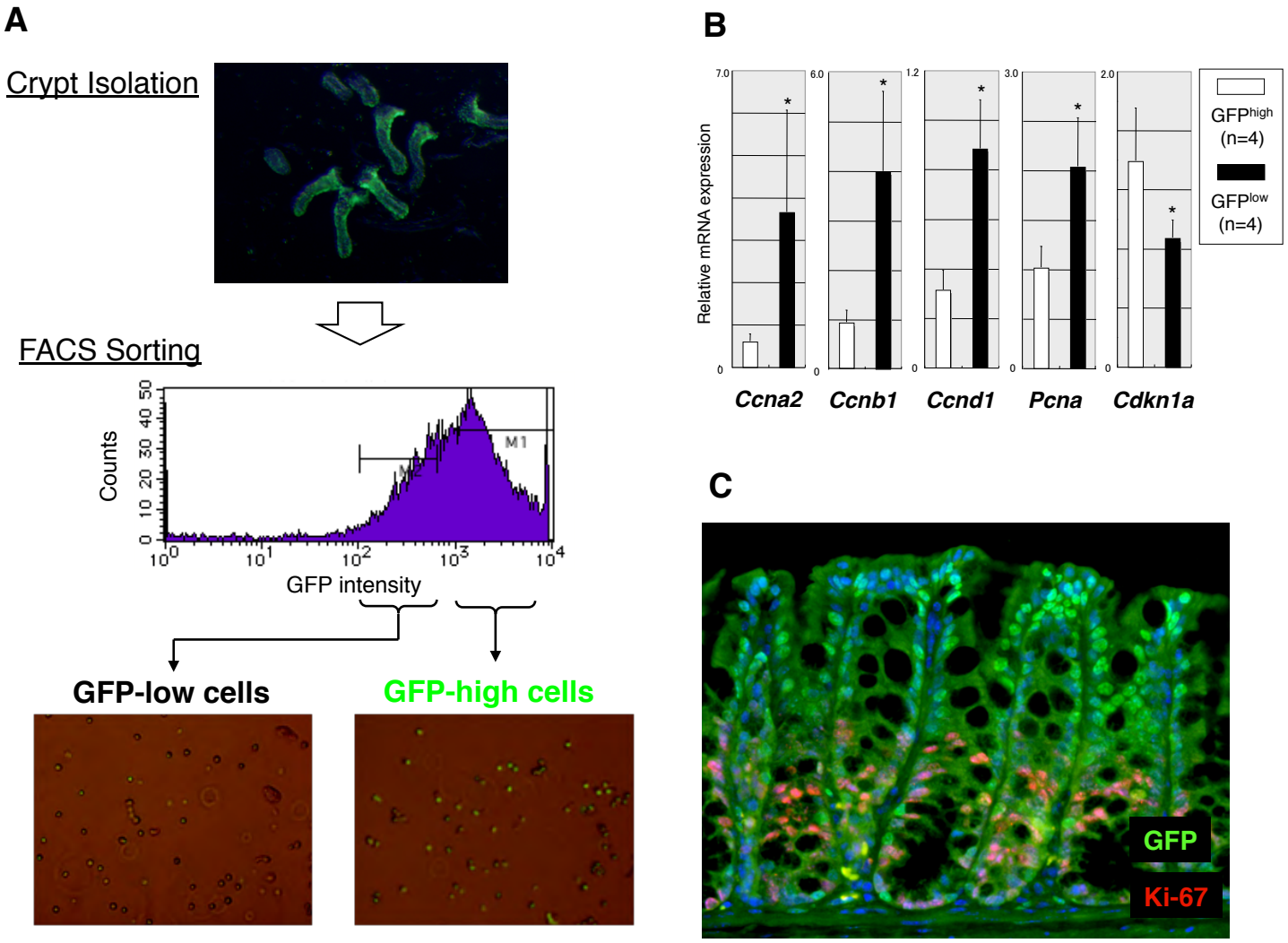

Fig. S1. Separation of proliferating cells from non-proliferative cells in the colon of histone H2B-GFP inducible mice. (**A**) Schematic of separation of proliferating cells from non-proliferating cells in the colonic crypts. GFP^{high} and GFP^{low} cells were sorted from the isolated crypts by FACS. (**B**) Expression of cell cycle-related genes assessed by quantitative real-time PCR. The expressions of *Ccna2*, *Ccnb1*, *Ccnd1* and *Pcna* were significantly higher in GFP^{low} proliferating cells than in GFP^{high} non-proliferating cells, whereas the expression of *Cdkn1a* (*p21*) was significantly upregulated in GFP^{high} cells. Data represent means ± s.d.; *P<0.05, by Mann–Whitney U-test. (**C**) Immunostaining for GFP (green) and Ki-67 (red) on a colon section of anH2B-GFP inducible mouse. GFP^{low} cells contain a higher number of Ki-67-positive cells than do GFP^{high} cells.

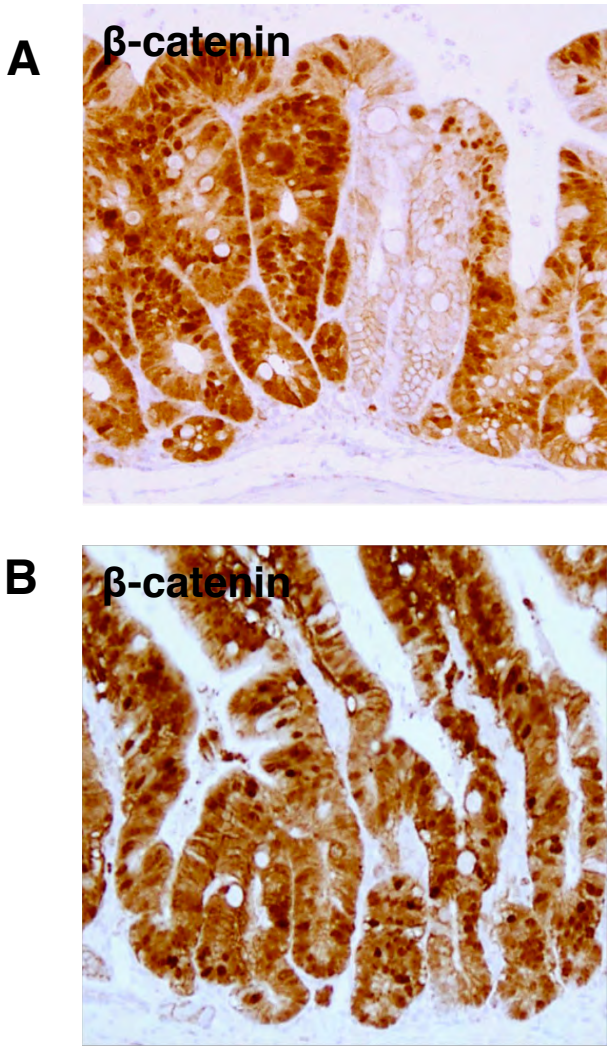

Fig. S2. Forced expression of β-catenin leads to crypt fission in both colon and small intestine. (**A**) Immunostaining for β-catenin on colonic section of a doxycycline-treated chimeric mouse. Crypt fission/branching phenotype is detectable only in β-catenin-induced crypts but not in host embryo-derived crypts. (**B**) Immunostaining for β-catenin in the small intestine of a β-catenin-induced mouse. β-Catenin induction causes frequent crypt fission/branching also in crypts of small intestine.

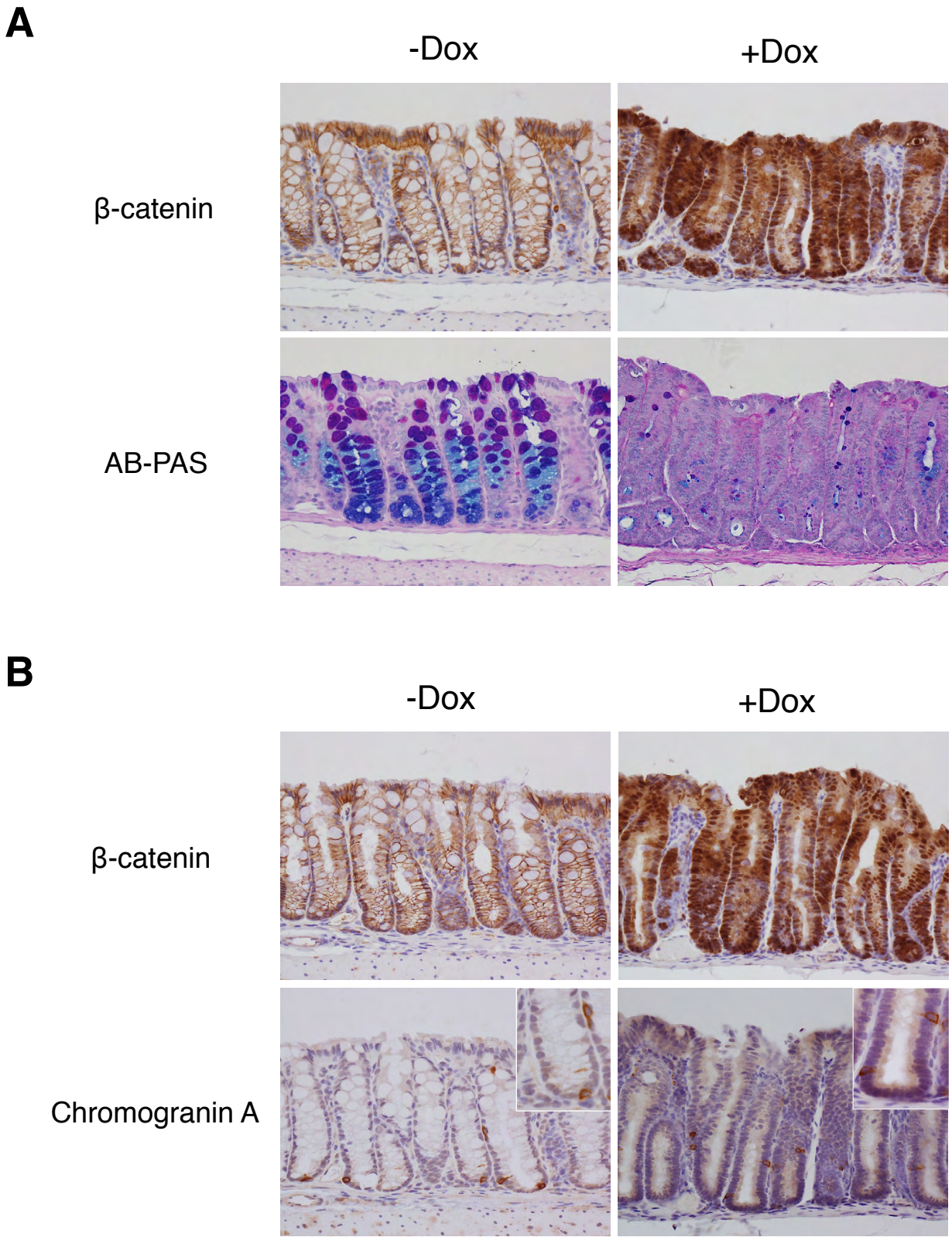

Fig. S3. Effect of β-catenin induction on differentiation of colonic epithelial cells. (**A**) Immunostaining for β-catenin and Alcian-Blue-periodic acid-Schiff (AB-PAS) staining on serial colonic sections of untreated and doxycycline-treated β-catenin inducible mice. Mucin-producing goblet cells were markedly reduced in β-catenin-induced colon. (**B**) Immunostaining for β-catenin and chromogranin A on serial colonic sections of untreated and doxycycline-treated β-catenin inducible mice. Chromogranin A-positive enteroendocrine cells were found in both β-catenin induced and non-induced crypts. Insets show higher magnification views of colonic crypts.

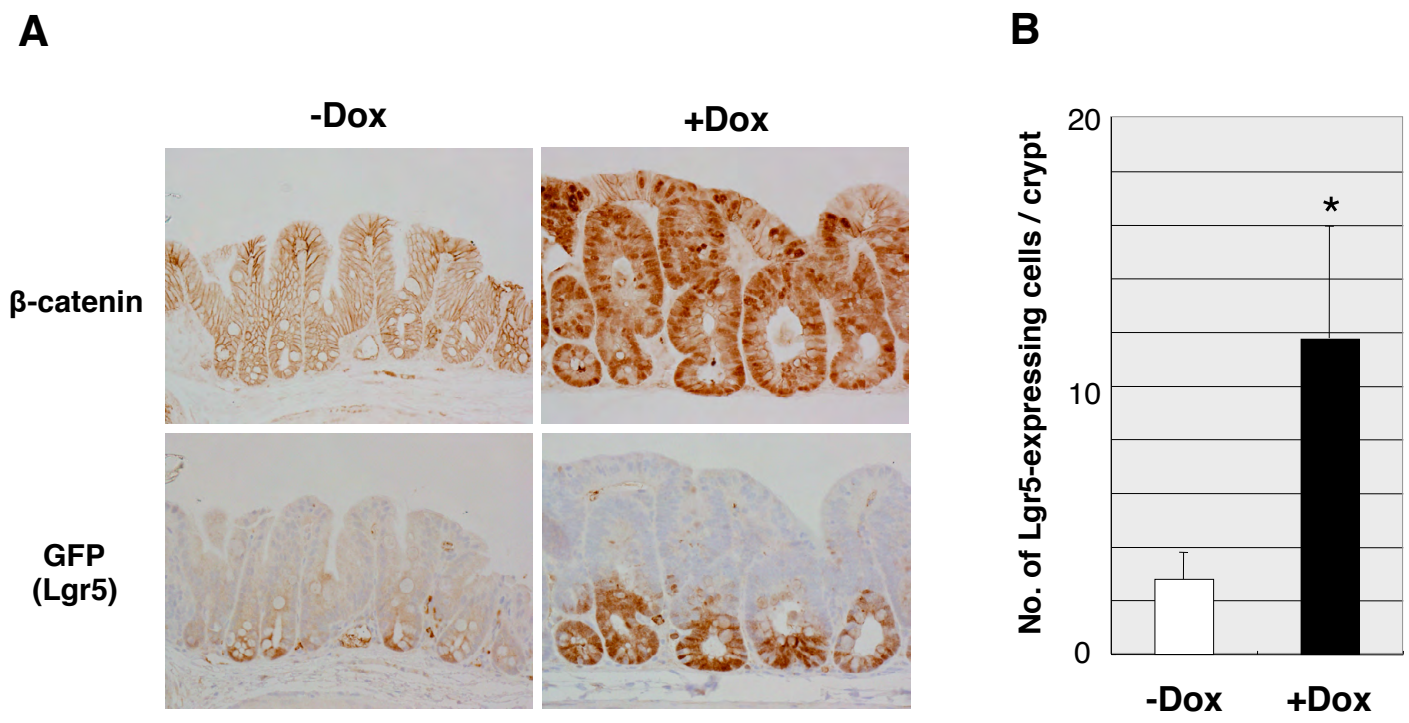

Fig. S4. Forced expression of β-catenin increases the number of *Lgr5*-expressing cells in colonic crypts. (**A**) Immunostaining for β-catenin and GFP on colonic sections of β-catenin-induced mice with *Lgr5-GFP* knock-in allele. GFP expression reveals an increased number of *Lgr5*-expressing cells at the lower part of colonic crypts in β-catenin-induced mice. Note that *Lgr5*-expressing cells were only observed at the lower part of the colonic crypts (lower right) whereas nuclear accumulation of β-catenin was observed in the entire crypt epithelium (upper right). (**B**) The number of *Lgr5*-expressing cells per crypt in β-catenin-induced colon. The number of *Lgr5*-expressing cells significantly increases following β-catenin induction. Data represent mean ± s.d.; **P*<0.0001, by Student's *t*-test.

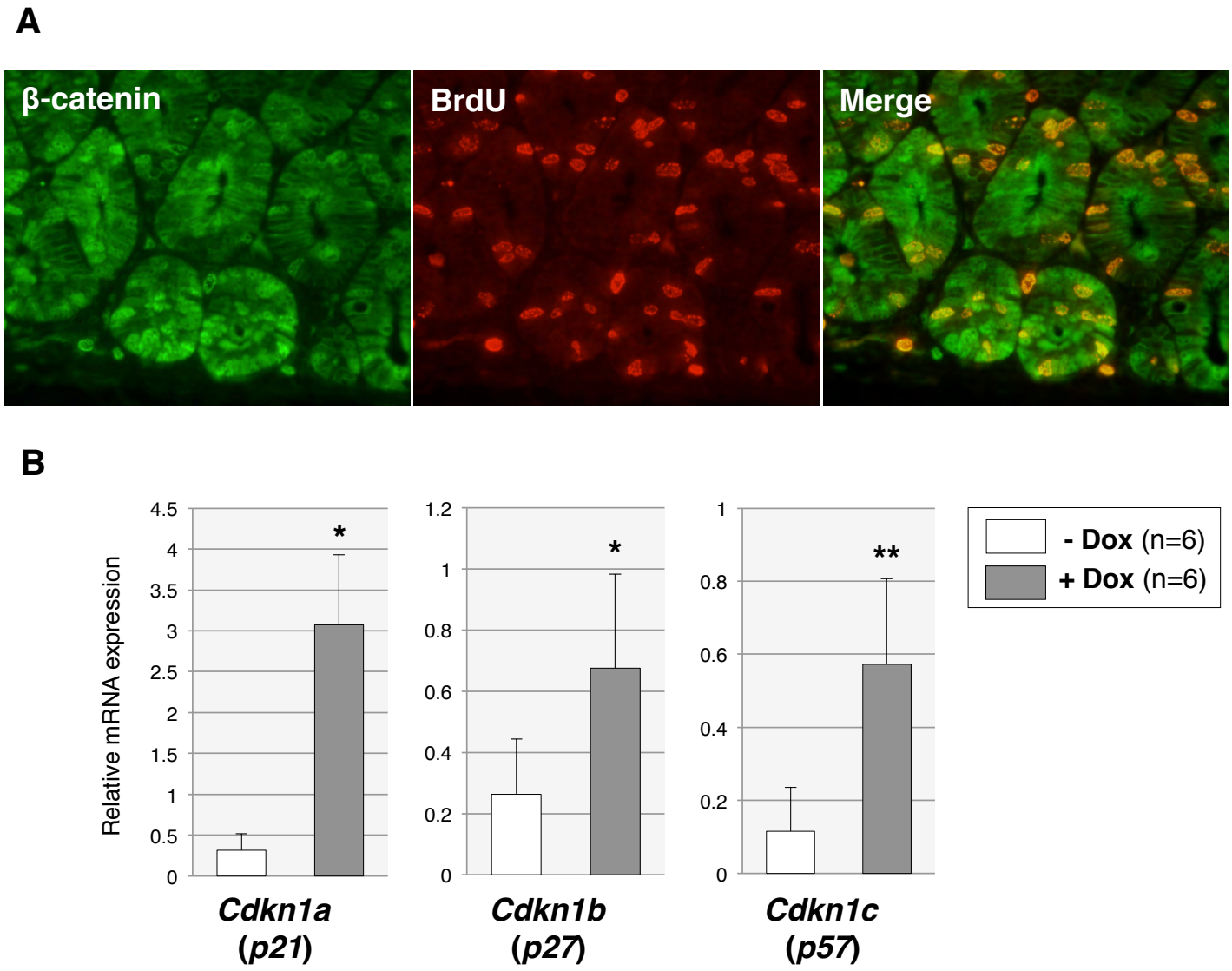

Fig. S5. Colonic cells with strong nuclear β-catenin expression do not actively divide. (**A**) Double immunostaining for β-catenin (green) and BrdU (red) on colonic section of a β-catenin-induced mouse given BrdU injection 2 hours before sacrifice. Colonic cells with strong nuclear β-catenin expression show less frequent BrdU incorporation. (**B**) Expression of cell Cdk inhibitors assessed by qRT-PCR. The expression of Cdk inhibitors is significantly upregulated by β-catenin induction. Data represent mean ± s.d.; **P*<0.05, ***P*<0.01 by Mann–Whitney *U*-test.

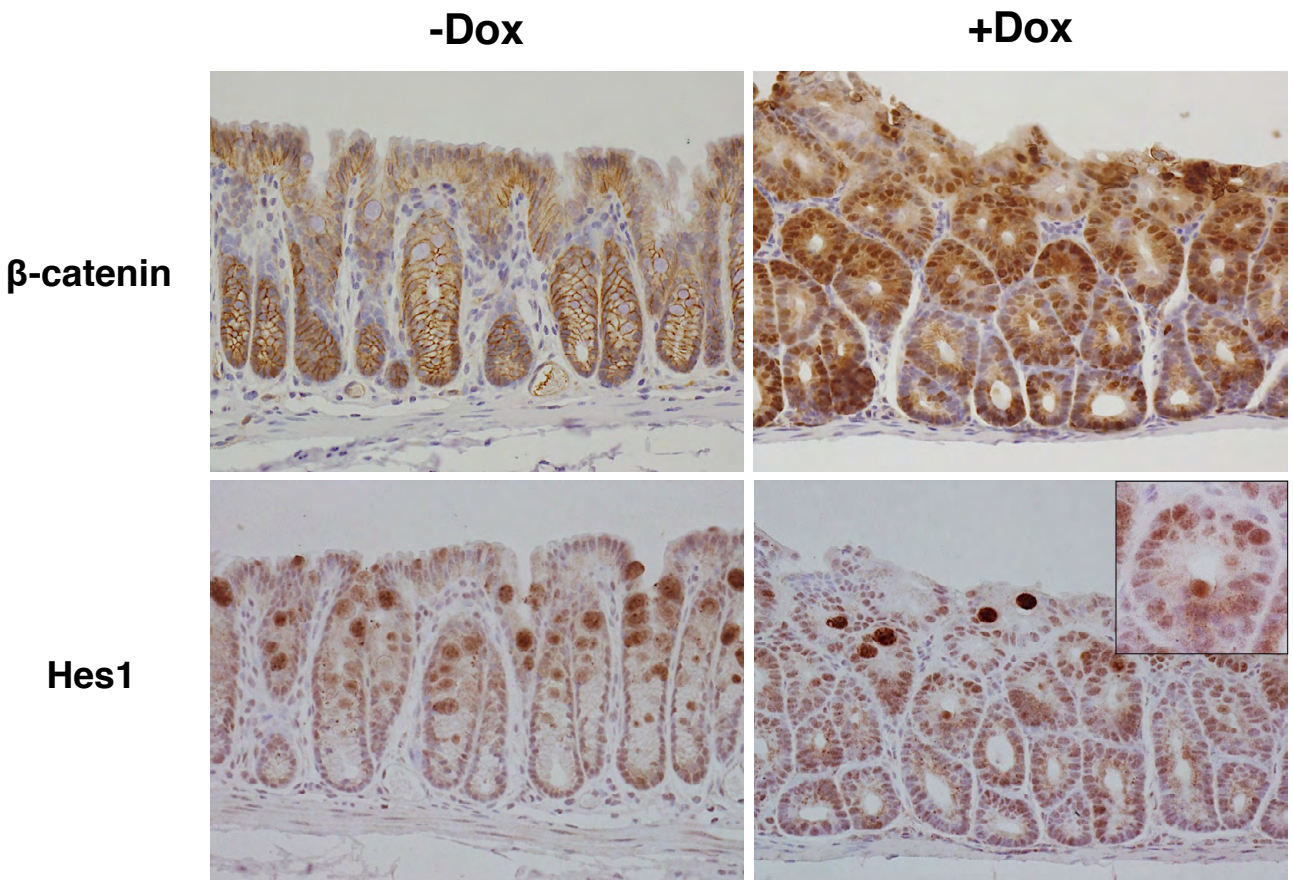

Fig. S6. Forced expression of β-catenin increases Hes1 expression in colonic crypts. Immunostaining for Hes1 on serial colonic sections of untreated and doxycycline-treated β-catenin-inducible mice. Strong nuclear expression of Hes1 is found in β-catenin-induced colonic crypts. Nuclear Hes1 can be observed throughout the crypt with β-catenin induction. Inset shows higher magnification views of β-catenin-induced crypts.

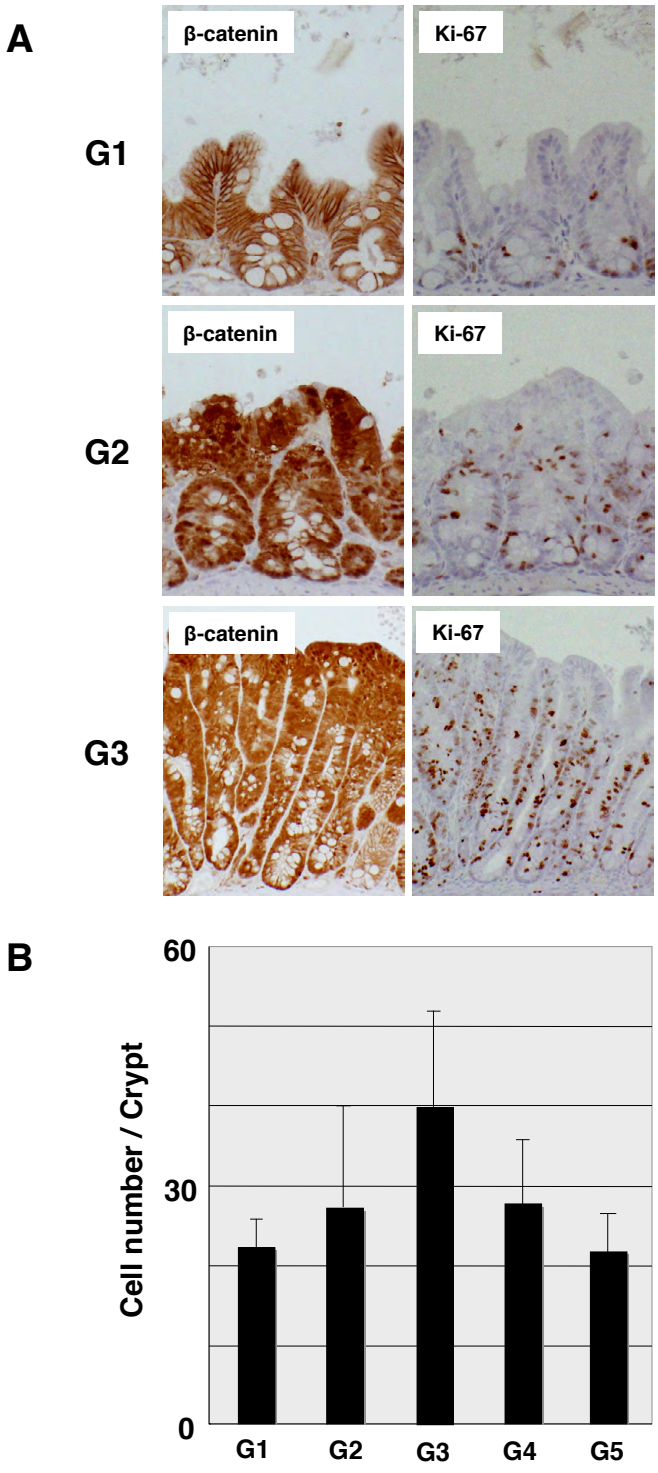

Fig. S7. Notch inhibitor induces active proliferation in the slow-cycling β-catenin induced colon. (**A**) Immunostaining for β-catenin and Ki-67 on colon sections. Treatment with a Notch inhibitor induces active cell proliferation of β-catenin-expressing cells. (**B**) The number of cells per crypt is significantly higher in G3 than other groups ($P<0.001$ for G1, $P<0.05$ for G2 and G4, and $P<0.0005$ for G5, respectively, by one-way ANOVA and Turkey's post hoc test), indicating elongation of the crypts. See Fig. 4 for description of protocols G1-G5.

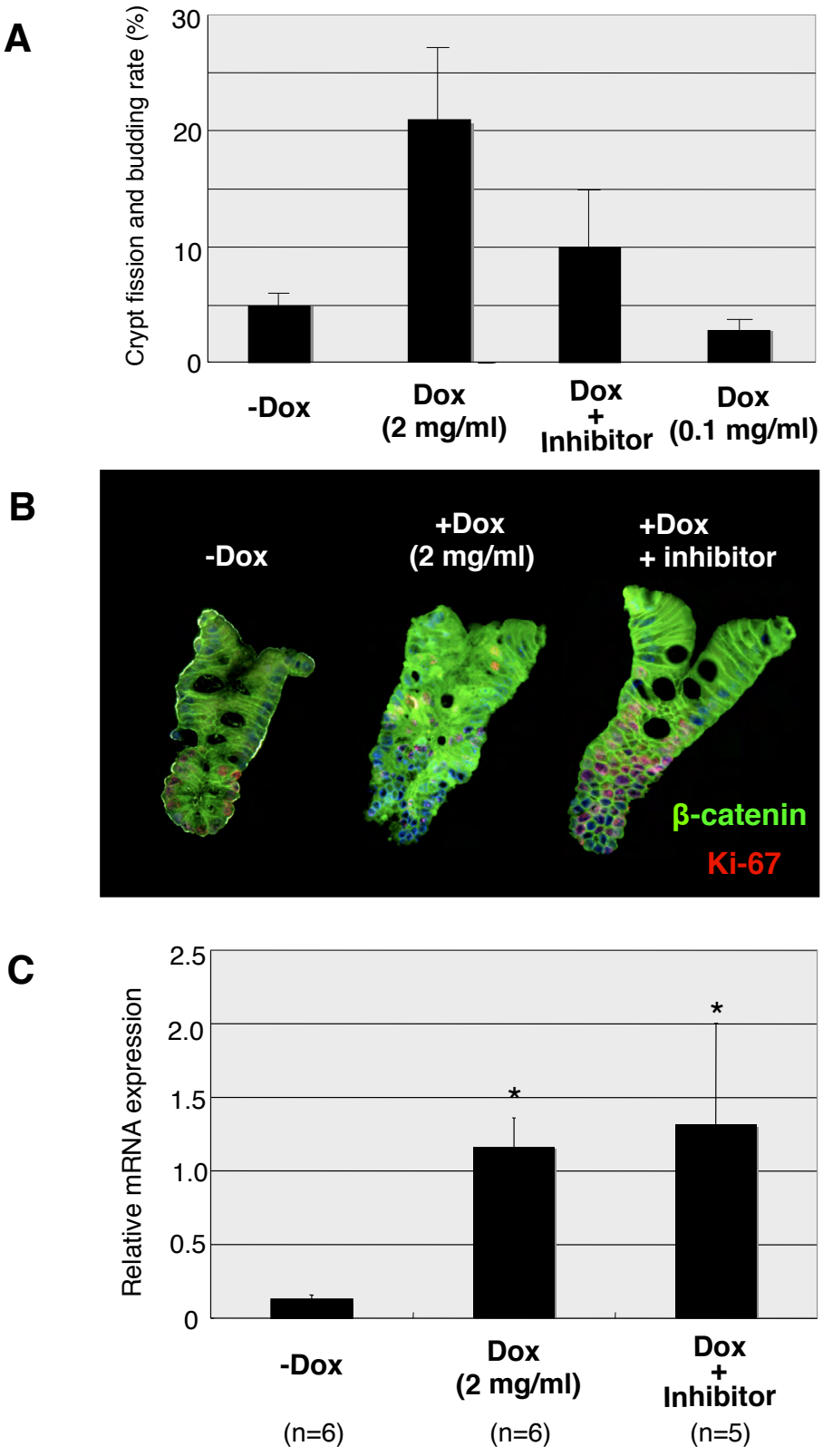

Fig. S8. Notch inhibitor suppresses the *de novo* crypt formation in β-catenin induced colon. (**A**) Crypt fission/budding rate of isolated crypts. The rate is significantly decreased at β-catenin-induced crypts with an inhibitor [$P<0.05$ compared with doxycyclin-treated mice (2 mg/ml), by Kruskal-Wallis test followed by Steel-Dwass test]. When mice are treated with lower concentration of doxycycline (0.1 mg/ml), the crypt fission/budding rate does not increase. (**B**) Double immunostaining for β-catenin (green) and Ki-67 (red) of isolated crypts. Treatment with a Notch inhibitor decreases nuclear β-catenin expression in β-catenin-induced crypt, which is accompanied by increased Ki-67 staining. (**C**) Quantitative real-time PCR for the gene encoding β-catenin. Notch inhibitor does not change β-catenin expression at the level of mRNA transcription in doxycyline-treated mice ($P=0.98$). Data represent mean ± s.d.; *$P<0.05$ compared with non-treated mice, by Kruskal-Wallis test and post-hoc Steel-Dwass test.

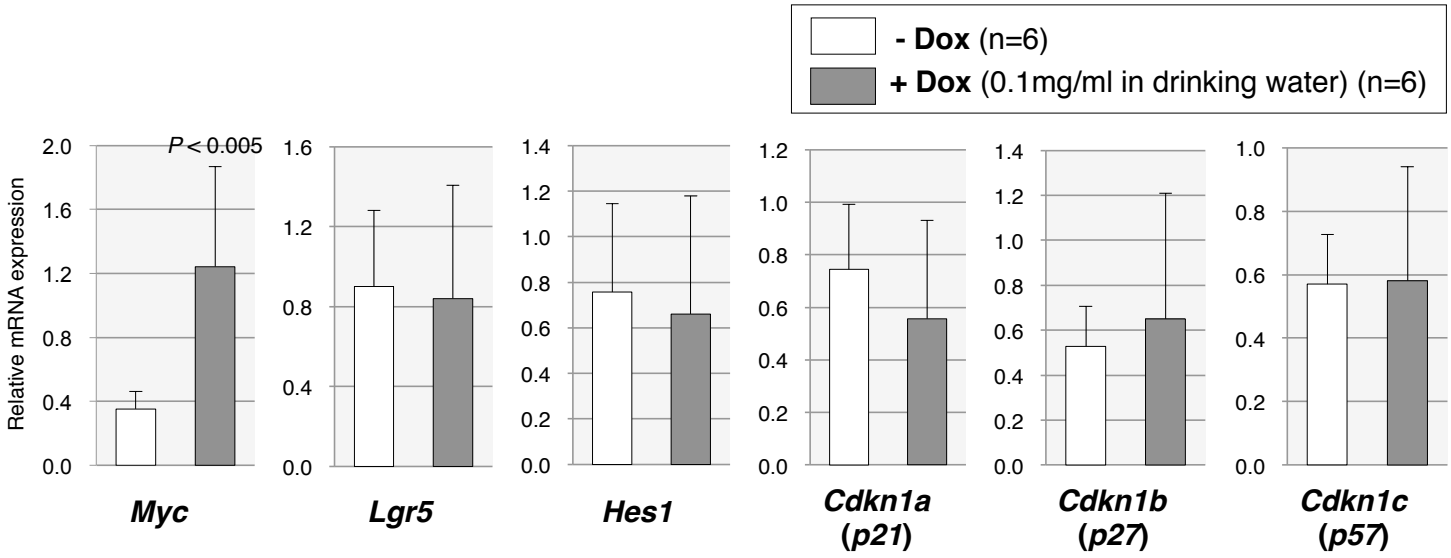

Fig. S9. Lower level of β-catenin induction leads to different patterns of transcriptional activation. qRT-PCR analyses of the Wnt target *Myc*, the ISC marker *Lgr5*, the Notch target *Hes1* and the Cdk inhibitors *Cdkn1a* (*p21*), *Cdkn1b* (*p27*) and *Cdkn1c* (*p57*) in colonic crypts with lower level of β-catenin induction. β-Catenin-inducible mice were treated with 0.1 mg/ml doxycycline in drinking water for 5 days. Although *Myc* is significantly upregulated ($P<0.005$, by Mann–Whitney *U*-test), expression of *Lgr5*, *Hes1* and Cdk inhibitors is not changed. See also Fig. 2B for comparison with the transcription in colonic crypts with higher level of β-catenin induction. Data represent mean ± s.d.

Table S1. Upregulated genes in the colonic crypts with β-catenin induction for 24 hours and 5 days.

Probe ID	Gene symbol	Gene name	Change in expression (fold)	
			24 hours	5 days
14187	BE136769	expressed sequence BE136769	1.0	112.8
14191	Sox4 *	SRY-box containing gene 4	10.2	31.3
14472	H2-Bl	histocompatibility 2, blastocyst	0.7	29.0
14476	Kcnk13	potassium channel, subfamily K, member 13	2.0	21.7
14414	Brwd3	bromodomain and WD repeat domain containing 3	7.8	19.1
14363	Neto2 *	neuropilin (NRP) and tolloid (TLL)-like 2	2.8	18.3
14229	Sp5	trans-acting transcription factor 5	3.8	15.2
14422	LOC625068	Similar to vomeronasal 2, receptor, 2	2.4	13.9
14187	Pnkd	paroxysmal nonkinesiogenic dyskinesia	4.5	13.8
14223	Ascl2 *	achaete-scute complex homolog-like 2 (Drosophila)	2.8	13.6
14242	Susd4	sushi domain containing 4	10.1	12.2
14447	4930550L11	RIKEN cDNA 4930550L11 gene	2.9	11.9
14418	---	Transcribed locus	4.7	10.5
14488	Rpp25	ribonuclease P 25 subunit (human)	7.6	9.5
14188	Foxd1	forkhead box D1	3.4	9.4
14317	2810404F17	RIKEN cDNA 2810404F17 gene	0.9	8.5
14406	---	---	13.0	8.4
14374	Trim12	tripartite motif protein 12	16.6	8.4
14513	Mtap	methylthioadenosine phosphorylase	4.6	8.3
14555	C630043F03	RIKEN cDNA C630043F03 gene	5.2	8.1
14454	Auts2	Autism susceptibility candidate 2	8.8	7.8
14361	Scn2b	sodium channel, voltage-gated, type II, beta	1.9	7.3
14251	Gngt1 *	guanine nucleotide binding protein (G protein), gamma transd	1.8	7.3
14178	Pla2g5	phospholipase A2, group V	1.6	7.2
14447	Diap2	Diaphanous homolog 2 (Drosophila)	10.7	6.9
14482	Hmox1	heme oxygenase (decycling) 1	2.7	6.9
14320	Ascl2 *	achaete-scute complex homolog-like 2 (Drosophila)	3.2	6.8
14422	---	Adult male epididymis cDNA, RIKEN full-length enriched librar	7.8	6.5
14400	6330549D2	RIKEN cDNA 6330549D23 gene	3.0	6.4
14441	Pip5k2b	Phosphatidylinositol-4-phosphate 5-kinase, type II, beta	8.6	6.3
14417	Slc11a2 *	solute carrier family 11 (proton-coupled divalent metal ion tra	24.6	6.2
14489	Tcl1b1	T-cell leukemia/lymphoma 1B, 1	5.3	6.2
14227	Myt1	myelin transcription factor 1	4.7	6.2
14299	2610301F02	RIKEN cDNA 2610301F02 gene	4.0	6.0
14374	Igfbp4 *	insulin-like growth factor binding protein 4	1.4	5.9
14551	Ckb	creatine kinase, brain	0.9	5.9
14411	Clstn2	calsyntenin 2	3.4	5.8
14455	---	---	3.2	5.7
14515	Sgtb	small glutamine-rich tetratricopeptide repeat (TPR)-containin	2.4	5.6
14249	Myc	myelocytomatosis oncogene	2.5	5.5
14356	2310008H0	RIKEN cDNA 2310008H09 gene	4.2	5.4
14517	Nsdhl	NAD(P) dependent steroid dehydrogenase-like	1.8	5.3
14217	Rdh1	retinol dehydrogenase 1 (all trans)	0.8	5.3
14344	C030011O1	RIKEN cDNA C030011O14 gene	3.5	5.2
14385	Vwa2	von Willebrand factor A domain containing 2	1.7	5.0
14264	Slc11a2 *	solute carrier family 11 (proton-coupled divalent metal ion tra	14.9	4.9

14356	Ikbkg *	inhibitor of kappaB kinase gamma	7.6	4.8
14605	Ascl2 *	achaete-scute complex homolog-like 2 (Drosophila)	2.3	4.7
14237	Igfbp4 *	insulin-like growth factor binding protein 4	0.9	4.6
14231	Cfh	complement component factor h	2.9	4.6
14550	Tbc1d9	TBC1 domain family, member 9	2.8	4.6
14486	Arhgdig	Rho GDP dissociation inhibitor (GDI) gamma	1.4	4.5
14196	Ier3	immediate early response 3	2.3	4.5
14277	Acta1	actin, alpha 1, skeletal muscle	3.3	4.4
14509	Lgr5	leucine rich repeat containing G protein coupled receptor 5	1.4	4.3
14228	Hmga2 *	high mobility group AT-hook 2	2.5	4.3
14341	Serhl	serine hydrolase-like	2.1	4.3
14438	---	---	5.4	4.3
14207	5830411J07	RIKEN cDNA 5830411J07 gene	2.7	4.1
14508	Tnni1	troponin I, skeletal, slow 1	6.0	4.1
14188	Phlda1	pleckstrin homology-like domain, family A, member 1	2.1	4.1
14474	D7Wsu130e	DNA segment, Chr 7, Wayne State University 130, expressed	1.2	4.0
14451	C77631	expressed sequence C77631	3.2	4.0
14383	Cnn3 *	Calponin 3, acidic	3.6	4.0
14213	Axin2 *	axin2	1.5	4.0
14382	Mid1	midline 1	7.2	3.9
14401	Prkar1b	protein kinase, cAMP dependent regulatory, type I beta	6.9	3.9
14178	Gcat *	glycine C-acetyltransferase (2-amino-3-ketobutyrate-coenzy	1.4	3.9
14341	A530016O0	RIKEN cDNA A530016O06 gene	4.5	3.9
14219	Epha4	Eph receptor A4	2.3	3.9
14490	Myl7	myosin, light polypeptide 7, regulatory	2.2	3.8
14254	Tgfbr2	transforming growth factor, beta receptor II	3.5	3.8
14510	Ftsj3	FtsJ homolog 3 (E. coli)	2.0	3.8
14323	1700042B14	RIKEN cDNA 1700042B14 gene	3.7	3.8
14432	Mrps14	mitochondrial ribosomal protein S14	5.9	3.7
14536	Fance *	Fanconi anemia, complementation group E	0.7	3.7
14374	Igfbp4 *	insulin-like growth factor binding protein 4	1.3	3.7
14548	Apcdd1	adenomatosis polyposis coli down-regulated 1	3.1	3.7
14248	Trim34	tripartite motif protein 34	6.7	3.7
14370	C030011O1	RIKEN cDNA C030011O14 gene	2.4	3.6
14520	Zfp2 *	zinc finger protein 2	1.9	3.6
14496	Tubb2b *	tubulin, beta 2b	0.9	3.5
14235	Hsp110 *	heat shock protein 110	2.5	3.5
14486	Msx1	homeo box, msh-like 1	1.9	3.5
14224	Defcr4	defensin related cryptdin 4	3.0	3.4
14205	Rac3	RAS-related C3 botulinum substrate 3	1.5	3.4
14572	---	0 day neonate lung cDNA, RIKEN full-length enriched library, c	1.6	3.4
14349	Dmpk	dystrophia myotonica-protein kinase	1.2	3.4
14487	Rbp1	retinol binding protein 1, cellular	0.9	3.4
14471	Elavl1	ELAV (embryonic lethal, abnormal vision, Drosophila)-like 1 (	1.6	3.4
14507	Hmga2 *	high mobility group AT-hook 2	1.6	3.4
14248	Cep68 *	centrosomal protein 68	1.7	3.4
14222	Pfdn5	prefoldin 5	7.8	3.4
14524	Fer1l3	fer-1-like 3, myoferlin (C. elegans)	4.2	3.4
14437	H2-Aa	Histocompatibility 2, class II antigen A, alpha	1.8	3.4
14365	2310008H0	RIKEN cDNA 2310008H09 gene	1.5	3.3
14546	Dctd	dCMP deaminase	1.4	3.3

14234	Mybbp1a *	MYB binding protein (P160) 1a	1.6	3.3
14292	Nap1l1 *	nucleosome assembly protein 1-like 1	1.1	3.3
14465	---	---	3.5	3.3
14416	Iars2	isoleucine-tRNA synthetase 2, mitochondrial	2.6	3.3
14210	Gsta1	glutathione S-transferase, alpha 1 (Ya)	1.5	3.3
14515	Ephb3	Eph receptor B3	1.0	3.3
14557	C130037N1	RIKEN cDNA C130037N17 gene	4.3	3.3
14244	2410005H0	RIKEN cDNA 2410005H09 gene	2.1	3.2
14270	Rnf43	ring finger protein 43	2.6	3.2
14204	Nap1l1 *	nucleosome assembly protein 1-like 1	1.1	3.2
14435	Slc4a1ap	Solute carrier family 4 (anion exchanger), member 1, adaptor p	0.8	3.2
14428	Dgkk	diacylglycerol kinase kappa	5.8	3.2
14493	Sox4 *	SRY-box containing gene 4	1.2	3.2
14390	Mtac2d1 *	membrane targeting (tandem) C2 domain containing 1	3.1	3.2
14478	Vnn1 *	vanin 1	1.9	3.2
14368	Axin2 *	axin2	2.2	3.1
14335	LOC672274	similar to Transcription factor SOX-4	1.2	3.1
14399	Slc30a10 *	solute carrier family 30, member 10	1.7	3.1
14283	2900062L11	RIKEN cDNA 2900062L11 gene	5.0	3.1
14528	Atic	5-aminoimidazole-4-carboxamide ribonucleotide formyltrans	1.0	3.1
14379	Nap1l1 *	nucleosome assembly protein 1-like 1	1.2	3.1
14192	Gas5 *	growth arrest specific 5	1.3	3.1
14186	Egln3	EGL nine homolog 3 (C. elegans)	1.4	3.1
14446	Plaa	phospholipase A2, activating protein	4.3	3.1
14229	Acot1 *	acyl-CoA thioesterase 1	1.1	3.0
14176	Cmkor1	chemokine orphan receptor 1	1.5	3.0
14529	Nol8 *	nucleolar protein 8	1.9	3.0
14564	---	---	3.4	3.0
14486	Enpep	glutamyl aminopeptidase	3.0	3.0
14408	Lrp8	low density lipoprotein receptor-related protein 8, apolipopro	2.5	3.0
14491	Sprr1a	small proline-rich protein 1A	0.8	3.0
14194	Ereg	epiregulin	2.5	3.0
14161	Rbbp9	retinoblastoma binding protein 9	1.5	3.0
14225	Acsl1 *	acyl-CoA synthetase long-chain family member 1	1.2	3.0
14337	C630043F03	RIKEN cDNA C630043F03 gene	1.8	3.0
14534	1110005A0	RIKEN cDNA 1110005A03 gene	1.5	3.0
14547	Phgdh *	3-phosphoglycerate dehydrogenase	1.2	3.0
14313	Smoc2 *	SPARC related modular calcium binding 2	1.2	3.0
14244	Tm4sf5	transmembrane 4 superfamily member 5	2.3	3.0
14158	Hdgf	hepatoma-derived growth factor	1.3	2.9
14436	Sypl	Synaptophysin-like protein	1.8	2.9
14385	1700001G1	RIKEN cDNA 1700001G11 gene	2.0	2.9
14479	2410006H1	RIKEN cDNA 2410006H16 gene	1.2	2.9
14549	Mtm1	X-linked myotubular myopathy gene 1	1.8	2.9
14539	Acpp	acid phosphatase, prostate	0.1	2.9
14237	5630401D2	RIKEN cDNA 5630401D24 gene	1.4	2.9
14554	Kcnj11	potassium inwardly rectifying channel, subfamily J, member 1	1.9	2.9
14267	Cnn3 *	calponin 3, acidic	1.2	2.9
14427	---	Transcribed locus	2.6	2.9
14526	Lrrtm1 *	leucine rich repeat transmembrane neuronal 1	0.9	2.9
14442	---	---	9.8	2.9

14334	Tcf7	transcription factor 7, T-cell specific	2.5	2.9
14321	Ecgf1	endothelial cell growth factor 1 (platelet-derived)	2.3	2.9
14160	Fabp5 *	fatty acid binding protein 5, epidermal	0.7	2.9
14427	---	---	2.0	2.9
14265	Nol5a *	nucleolar protein 5A	1.5	2.9
14514	Umps	uridine monophosphate synthetase	2.6	2.9
14489	Thop1	thimet oligopeptidase 1	1.7	2.9
14402	Agpat7	Nacylglycerol-3-phosphate O-acyltransferase 7 (lysophospha	1.2	2.9
14462	---	0 day neonate thymus cDNA, RIKEN full-length enriched librar	3.1	2.9
14497	---	---	2.7	2.8
14546	Psat1 *	phosphoserine aminotransferase 1	0.7	2.8
14251	Shmt1 *	serine hydroxymethyl transferase 1 (soluble)	1.1	2.8
14164	Tmed6	transmembrane emp24 protein transport domain containing 6	2.4	2.8
14354	C79267	expressed sequence C79267	2.0	2.8
14195	Olr1	oxidized low density lipoprotein (lectin-like) receptor 1	1.2	2.8
14167	Wee1	wee 1 homolog (S. pombe)	1.2	2.8
14567	Snai3	snail homolog 3 (Drosophila)	1.8	2.8
14438	Atp13a3 *	ATPase type 13A3	1.7	2.8
14176	Per2 *	period homolog 2 (Drosophila)	1.6	2.8
14181	Tcfap4	transcription factor AP4	1.2	2.8
14200	Lss	lanosterol synthase	1.3	2.8
14317	Prmt3 *	protein arginine N-methyltransferase 3	1.4	2.8
14264	Jag2	jagged 2	1.0	2.8
14427	1700071K01	RIKEN cDNA 1700071K01 gene	2.1	2.8
14171	B230317C12	RIKEN cDNA B230317C12 gene	2.3	2.8
14220	Mycl1 *	v-myc myelocytomatosis viral oncogene homolog 1, lung carci	1.2	2.7
14288	Nolc1 *	nucleolar and coiled-body phosphoprotein 1	1.6	2.7
14167	Ceacam12	CEA-related cell adhesion molecule 12	1.9	2.7
14342	AA408556	expressed sequence AA408556	1.3	2.7
14555	Cnn3 *	calponin 3, acidic	1.2	2.7
14234	Decr2	2-4-dienoyl-Coenzyme A reductase 2, peroxisomal	0.9	2.7
14225	Id2	inhibitor of DNA binding 2	1.3	2.7
14285	Ppat	phosphoribosyl pyrophosphate amidotransferase	1.6	2.7
14307	Pmm1	phosphomannomutase 1	1.2	2.7
14501	Pla2g2a	phospholipase A2, group IIA (platelets, synovial fluid)	1.1	2.7
14506	Mt4	metallothionein 4	0.9	2.7
14527	Nap1l1 *	nucleosome assembly protein 1-like 1	1.2	2.7
14249	Steap1	six transmembrane epithelial antigen of the prostate 1	1.3	2.7
14509	Nol5	nucleolar protein 5	1.4	2.7
14324	Ube4b	ubiquitination factor E4B, UFD2 homolog (S. cerevisiae)	1.8	2.7
14170	Bid	BH3 interacting domain death agonist	2.6	2.6
14266	Kctd14	potassium channel tetramerisation domain containing 14	4.5	2.6
14526	Tubb2b *	tubulin, beta 2b	1.4	2.6
14364	Whrn	whirlin	1.3	2.6
14457	2310047M1	RIKEN cDNA 2310047M15 gene	2.3	2.6
14402	---	Transcribed locus, weakly similar to XP_417295.1 PREDICTED:	1.1	2.6
14187	Comt	catechol-O-methyltransferase	2.7	2.6
14490	Slc16a3	solute carrier family 16 (monocarboxylic acid transporters), m	1.1	2.6
14174	Tex19	testis expressed gene 19	0.4	2.6
14548	Tmem18	transmembrane protein 18	2.3	2.6
14500	Nolc1 *	nucleolar and coiled-body phosphoprotein 1	1.5	2.6

14510	Psat1 *	phosphoserine aminotransferase 1	0.8	2.6
14267	Prmt3 *	protein arginine N-methyltransferase 3	1.8	2.6
14218	LOC630729	similar to Glutathione reductase, mitochondrial precursor (GR)	1.0	2.6
14486	Dvl2	dishevelled 2, dsh homolog (Drosophila)	0.1	2.6
14573	Amy2	Amylase 2, pancreatic	3.3	2.6
14574	---	Transcribed locus	3.9	2.6
14219	Notch3	Notch gene homolog 3 (Drosophila)	1.7	2.6
14290	1110012J17	RIKEN cDNA 1110012J17 gene	1.2	2.6
14359	B4galnt4	beta-1,4-N-acetyl-galactosaminyl transferase 4	1.0	2.6
14246	Tcof1	Treacher Collins Franceschetti syndrome 1, homolog	1.4	2.6
14387	Slc30a10 *	solute carrier family 30, member 10	1.6	2.6
14312	Mga	MAX gene associated	1.1	2.6
14172	Amacr	alpha-methylacyl-CoA racemase	2.5	2.6
14259	Hsp110 *	heat shock protein 110	2.2	2.6
14374	Pcsk9	proprotein convertase subtilisin/kexin type 9	1.5	2.6
14343	Kpnb1	karyopherin (importin) beta 1	0.8	2.6
14250	E430018J23	RIKEN cDNA E430018J23 gene	2.1	2.5
14167	Nme4	expressed in non-metastatic cells 4, protein	1.3	2.5
14513	Fyttd1	forty-two-three domain containing 1	3.1	2.5
14540	Neto2 *	neuropilin (NRP) and tolloid (TLL)-like 2	0.7	2.5
14292	2310030N0	RIKEN cDNA 2310030N02 gene	1.3	2.5
14377	Apex1 *	apurinic/apyrimidinic endonuclease 1	1.6	2.5
14288	Nolc1 *	nucleolar and coiled-body phosphoprotein 1	2.7	2.5
14350	Sypl	synaptophysin-like protein	1.9	2.5
14302	4933406C10	RIKEN cDNA 4933406C10 gene	1.2	2.5
14211	Jag1	jagged 1	1.5	2.5
14239	2210010N0	RIKEN cDNA 2210010N04 gene	1.4	2.5
14257	Vmd2l1	vitelliform macular dystrophy 2-like protein 1	1.9	2.5
14184	Vnn1 *	vanin 1	1.7	2.5
14539	Htf9c	HpaII tiny fragments locus 9c	1.7	2.5
14324	Npm1	nucleophosmin 1	1.4	2.5
14173	Snrpa1	small nuclear ribonucleoprotein polypeptide A'	1.8	2.5
14478	Vps52	vacuolar protein sorting 52 (yeast)	1.0	2.5
14337	Slc39a10 *	solute carrier family 39 (zinc transporter), member 10	1.2	2.5
14334	Glt25d1	glycosyltransferase 25 domain containing 1	2.1	2.5
14290	Stub1	STIP1 homology and U-Box containing protein 1	1.2	2.5
14399	Rpusd2	RNA pseudouridylate synthase domain containing 2	1.5	2.5
14285	Ccdc3	coiled-coil domain containing 3	1.0	2.5
14235	Npm3	nucleoplasmin 3	1.8	2.4
14183	Nola1	nucleolar protein family A, member 1 (H/ACA small nucleolar	1.8	2.4
14246	Frag1	FGF receptor activating protein 1	1.1	2.4
14508	Arvcf	armadillo repeat gene deleted in velo-cardio-facial syndrome	1.6	2.4
14510	Hars2	histidyl tRNA synthetase 2	1.8	2.4
14487	Dnajc2 *	DnaJ (Hsp40) homolog, subfamily C, member 2	1.4	2.4
14360	Thumpd1	THUMP domain containing 1	1.8	2.4
14213	Prox1	prospero-related homeobox 1	1.8	2.4
14497	AA414993	expressed sequence AA414993	0.2	2.4
14187	Ccl25	chemokine (C-C motif) ligand 25	2.3	2.4
14195	Greb1	gene regulated by estrogen in breast cancer protein	1.5	2.4
14337	Nrip2	nuclear receptor interacting protein 2	1.7	2.4
14350	Polr1e	polymerase (RNA) I polypeptide E	1.7	2.4

14302	4930404H2	RIKEN cDNA 4930404H21 gene	2.6	2.4
14238	Acsl1 *	acyl-CoA synthetase long-chain family member 1	1.1	2.4
14415	Fbxl3	F-box and leucine-rich repeat protein 3	3.1	2.4
14191	Deadc1	deaminase domain containing 1	1.7	2.4
14171	Vav3 *	vav 3 oncogene	0.8	2.4
14237	Ppan	peter pan homolog (Drosophila)	1.9	2.4
14490	Acot1 *	acyl-CoA thioesterase 1	0.9	2.4
14330	6330526H1	RIKEN cDNA 6330526H18 gene	2.4	2.4
14246	D13Wsu177	DNA segment, Chr 13, Wayne State University 177, expressed	1.6	2.4
14550	Nol5a *	nucleolar protein 5A	1.6	2.4
14337	Dach1 *	dachshund 1 (Drosophila)	1.2	2.4
14234	Gsta3	glutathione S-transferase, alpha 3	0.5	2.4
14546	Irf2bp2	interferon regulatory factor 2 binding protein 2	1.4	2.4
14547	Slc38a1	solute carrier family 38, member 1	3.9	2.4
14445	LOC240038	similar to reduced expression 2	0.5	2.4
14177	Thoc4	THO complex 4	1.1	2.4
14528	Cad	carbamoyl-phosphate synthetase 2, aspartate transcarbamyla	1.6	2.4
14260	Rgs16	regulator of G-protein signaling 16	1.3	2.4
14520	Pla2g12a	phospholipase A2, group XIIA	1.1	2.4
14185	Wasf1	WASP family 1	2.0	2.4
14208	Pkia	protein kinase inhibitor, alpha	1.9	2.4
14265	Trp53	transformation related protein 53	1.1	2.4
14521	BC053440	cDNA sequence BC053440	1.4	2.4
14161	Apex1 *	apurinic/apyrimidinic endonuclease 1	1.6	2.4
14563	Cep68 *	centrosomal protein 68	1.6	2.4
14448	---	---	3.8	2.4
14534	2600001A1	RIKEN cDNA 2600001A11 gene	1.1	2.4
14374	Tbx3 *	T-box 3	1.3	2.4
14238	Noc4l	nucleolar complex associated 4 homolog (S. cerevisiae)	2.0	2.4
14556	Alkbh2	alkB, alkylation repair homolog 2 (E. coli)	2.0	2.4
14168	Mut	methylmalonyl-Coenzyme A mutase	0.8	2.4
14353	Kctd15	potassium channel tetramerisation domain containing 15	1.5	2.3
14599	LOC626877	Similar to zinc finger protein 709	3.7	2.3
14504	Ncoa6ip	nuclear receptor coactivator 6 interacting protein	1.4	2.3
14368	Cnn3 *	calponin 3, acidic	1.2	2.3
14296	Lrrc17	leucine rich repeat containing 17	1.1	2.3
14513	Zfyve19	zinc finger, FYVE domain containing 19	0.9	2.3
14220	Cdh8	cadherin 8	4.8	2.3
14220	Mycl1 *	v-myc myelocytomatosis viral oncogene homolog 1, lung carci	1.0	2.3
14566	Mthfd1l	methylenetetrahydrofolate dehydrogenase (NADP+ dependent	1.4	2.3
14486	Wdr12	WD repeat domain 12	1.7	2.3
14376	3321401G0	RIKEN cDNA 3321401G04 gene	1.2	2.3
14221	Shmt1 *	serine hydroxymethyl transferase 1 (soluble)	1.1	2.3
14437	Cyp20a1	cytochrome P450, family 20, subfamily A, polypeptide 1	2.6	2.3
14447	Abtb2	ankyrin repeat and BTB (POZ) domain containing 2	1.6	2.3
14495	Tpm2	tropomyosin 2, beta	0.8	2.3
14176	Per2 *	period homolog 2 (Drosophila)	1.7	2.3
14563	Aldh3b2	aldehyde dehydrogenase 3 family, member B2	1.0	2.3
14606	2410002F23	RIKEN cDNA 2410002F23 gene	1.6	2.3
14217	Efna4	ephrin A4	1.2	2.3
14242	Polr3h	polymerase (RNA) III (DNA directed) polypeptide H	1.5	2.3

14355	2010109N1	RIKEN cDNA 2010109N14 gene	1.4	2.3
14218	Rps18	ribosomal protein S18	1.1	2.3
14560	Apex1 *	apurinic/apyrimidinic endonuclease 1	1.2	2.3
14207	Tex15	testis expressed gene 15	1.1	2.3
14211	Areg	amphiregulin	1.9	2.3
14421	4632427E13	RIKEN cDNA 4632427E13 gene	2.3	2.3
14366	6720401G1	RIKEN cDNA 6720401G13 gene	0.9	2.3
14367	Cnn3 *	calponin 3, acidic	1.1	2.3
14514	Aldoc	aldolase 3, C isoform	1.6	2.3
14588	4732468M1	RIKEN cDNA 4732468M13 gene	0.3	2.3
14541	Ccdc86	coiled-coil domain containing 86	1.5	2.3
14277	Cftr	cystic fibrosis transmembrane conductance regulator homolog	1.0	2.3
14234	Mybbp1a *	MYB binding protein (P160) 1a	1.7	2.3
14476	Rpl24	ribosomal protein L24	1.1	2.3
14186	Ube2h	ubiquitin-conjugating enzyme E2H	0.8	2.3
14557	Picalm	Phosphatidylinositol binding clathrin assembly protein	2.9	2.3
14257	Mtac2d1 *	membrane targeting (tandem) C2 domain containing 1	3.1	2.3
14312	Prdx4	peroxiredoxin 4	0.6	2.3
14336	Snord22 *	small nucleolar RNA, C/D box 22	1.2	2.3
14376	Phgdh *	3-phosphoglycerate dehydrogenase	0.8	2.3
14291	Wdr34	WD repeat domain 34	1.9	2.3
14191	Sox4 *	SRY-box containing gene 4	0.9	2.3
14401	9630027E11	hypothetical protein 9630027E11	0.1	2.3
14239	Krt2-7	keratin complex 2, basic, gene 7	0.9	2.3
14558	2700023E23	RIKEN cDNA 2700023E23 gene	1.5	2.3
14527	Txn2	thioredoxin 2	1.5	2.3
14390	MGC117846	Similar to zinc finger protein 665	1.2	2.3
14380	Rab11fip3	RAB11 family interacting protein 3 (class II)	1.4	2.3
14168	Fgd1	FYVE, RhoGEF and PH domain containing 1	1.8	2.3
14506	Acsl1 *	acyl-CoA synthetase long-chain family member 1	1.1	2.2
14508	Solh	small optic lobes homolog (Drosophila)	2.0	2.2
14384	Nebl	nebulette	1.9	2.2
14524	Cd44	CD44 antigen	1.0	2.2
14486	Cyp2d26	cytochrome P450, family 2, subfamily d, polypeptide 26	3.5	2.2
14596	Snf1lk	SNF1-like kinase	1.7	2.2
14291	8430438M0	RIKEN cDNA 8430438M01 gene	1.6	2.2
14264	Shmt2	serine hydroxymethyl transferase 2 (mitochondrial)	1.0	2.2
14452	BC023969	cDNA sequence BC023969	1.7	2.2
14551	Gloxd1	glyoxalase domain containing 1	2.5	2.2
14157	Ncl *	nucleolin	1.3	2.2
14180	Tfpt *	TCF3 (E2A) fusion partner	1.1	2.2
14206	Dach1 *	dachshund 1 (Drosophila)	1.5	2.2
14301	Reep6	receptor accessory protein 6	1.2	2.2
14159	Sf3b3 *	splicing factor 3b, subunit 3	1.5	2.2
14272	Palld	palladin, cytoskeletal associated protein	2.4	2.2
14184	Pus3	pseudouridine synthase 3	2.4	2.2
14360	Cep68 *	centrosomal protein 68	1.7	2.2
14486	Vav3 *	vav 3 oncogene	0.9	2.2
14456	---	---	1.4	2.2
14266	Phgdh *	3-phosphoglycerate dehydrogenase	0.7	2.2
14556	Rps3	ribosomal protein S3	1.2	2.2

14224	Cdk4 *	cyclin-dependent kinase 4	1.3	2.2
14490	Eef1e1	eukaryotic translation elongation factor 1 epsilon 1	1.9	2.2
14519	Recc1	replication factor C 1	1.1	2.2
14196	1700010I14	RIKEN cDNA 1700010I14 gene	1.5	2.2
14189	Pam	peptidylglycine alpha-amidating monooxygenase	3.8	2.2
14238	2610012O2	RIKEN cDNA 2610012O22 gene	1.9	2.2
14510	Nol11	nucleolar protein 11	0.8	2.2
14577	Zfp192	zinc finger protein 192	0.4	2.2
14527	Prmt1	protein arginine N-methyltransferase 1	1.1	2.2
14242	Ifitm1	interferon induced transmembrane protein 1	0.7	2.2
14335	LOC622534	similar to ribosomal protein L36	1.2	2.2
14171	Vav3 *	vav 3 oncogene	0.8	2.2
14365	1110008H0	RIKEN cDNA 1110008H02 gene	1.4	2.2
14528	Ddx10	DEAD (Asp-Glu-Ala-Asp) box polypeptide 10	1.4	2.2
14231	Gtpbp4 *	GTP binding protein 4	1.3	2.2
14178	Gcat *	glycine C-acetyltransferase (2-amino-3-ketobutyrate-coenzy	1.7	2.2
14163	Fkbp4	FK506 binding protein 4	1.5	2.2
14494	Il12b	interleukin 12b	1.4	2.2
14508	Gtpbp4 *	GTP binding protein 4	1.7	2.2
14346	Gpr22	G protein-coupled receptor 22	1.0	2.2
14252	Gngt1 *	guanine nucleotide binding protein (G protein), gamma transd	0.6	2.2
14418	Seh1l	SEH1-like (S. cerevisiae	1.2	2.2
14287	Bri3bp *	Bri3 binding protein	1.4	2.2
14171	Exosc5	exosome component 5	1.3	2.2
14160	Abce1 *	ATP-binding cassette, sub-family E (OABP), member 1	1.9	2.2
14176	Dnajc2 *	DnaJ (Hsp40) homolog, subfamily C, member 2	1.6	2.2
14279	Rdh9	retinol dehydrogenase 9	1.1	2.2
14511	Idi1	isopentenyl-diphosphate delta isomerase	1.2	2.2
14359	Rps6	ribosomal protein S6	1.8	2.2
14507	Hmga2 *	high mobility group AT-hook 2	1.8	2.2
14441	Odf2	outer dense fiber of sperm tails 2	1.3	2.2
14235	Ptpn5	protein tyrosine phosphatase, non-receptor type 5	4.7	2.2
14275	Utrn *	utrophin	0.9	2.2
14257	Rorc	RAR-related orphan receptor gamma	0.7	2.2
14372	2700081O1	RIKEN cDNA 2700081O15 gene	1.5	2.2
14243	Adhfe1	alcohol dehydrogenase, iron containing, 1	1.3	2.2
14484	2410016O0	RIKEN cDNA 2410016O06 gene	1.7	2.2
14495	Zfr	zinc finger RNA binding protein	1.5	2.2
14236	Cdca4	cell division cycle associated 4	1.5	2.2
14516	Wdr75	WD repeat domain 75	1.7	2.2
14373	F2r	coagulation factor II (thrombin) receptor	0.9	2.2
14512	Ikbkap	inhibitor of kappa light polypeptide enhancer in B-cells, kinas	1.3	2.2
14563	Cnn3 *	calponin 3, acidic	1.2	2.2
14278	Dnttip2	deoxynucleotidyltransferase, terminal, interacting protein 2	1.5	2.2
14480	---	Adult male medulla oblongata cDNA, RIKEN full-length enrich	1.6	2.2
14159	Smoc2 *	SPARC related modular calcium binding 2	1.5	2.2
14533	Xrcc6bp1	XRCC6 binding protein 1	1.6	2.1
14522	Utrn *	utrophin	1.0	2.1
14167	Rcl1	RNA terminal phosphate cyclase-like 1	1.7	2.1
14494	Gas5 *	growth arrest specific 5	1.3	2.1
14561	2600005C20	RIKEN cDNA 2600005C20 gene	1.2	2.1

14486	Ccnd1	cyclin D1	1.7	2.1
14541	Pcgf6	polycomb group ring finger 6	1.5	2.1
14225	Ilf3	interleukin enhancer binding factor 3	0.7	2.1
14592	---	---	1.8	2.1
14350	Utp14a	UTP14, U3 small nucleolar ribonucleoprotein, homolog A (yeas	1.7	2.1
14501	Ikbkg *	inhibitor of kappaB kinase gamma	1.2	2.1
14231	Wdr4	WD repeat domain 4	1.2	2.1
14237	Igfbp4 *	insulin-like growth factor binding protein 4	1.2	2.1
14167	Oprs1	opioid receptor, sigma 1	1.7	2.1
14159	Nup62	nucleoporin 62	1.7	2.1
14517	Hod	homeobox only domain	1.5	2.1
14363	Rora	RAR-related orphan receptor alpha	1.4	2.1
14507	Syncrip *	synaptotagmin binding, cytoplasmic RNA interacting protein	1.2	2.1
14336	Snord22 *	small nucleolar RNA, C/D box 22	1.3	2.1
14283	Ddit4	DNA-damage-inducible transcript 4	1.3	2.1
14499	Zfp2 *	zinc finger protein 2	1.3	2.1
14399	Cyp11a1	cytochrome P450, family 11, subfamily a, polypeptide 1	2.8	2.1
14512	2310061I09	RIKEN cDNA 2310061I09 gene	2.0	2.1
14183	Terf1	telomeric repeat binding factor 1	1.5	2.1
14157	Ncl *	nucleolin	1.5	2.1
14235	Slc1a4 *	solute carrier family 1 (glutamate/neutral amino acid transpor	1.5	2.1
14485	Tead2	TEA domain family member 2	1.1	2.1
14160	Fabp5 *	fatty acid binding protein 5, epidermal	0.7	2.1
14486	Fzd6	frizzled homolog 6 (Drosophila)	1.3	2.1
14210	Agpat1	1-acylglycerol-3-phosphate O-acyltransferase 1 (lysophosph	1.5	2.1
14256	LOC669007	similar to General transcription factor II-I (GTFII-I)	1.4	2.1
14488	Ankrd47	ankyrin repeat domain 47	2.3	2.1
14549	Slc7a1	solute carrier family 7 (cationic amino acid transporter, y+ sys	1.3	2.1
14219	Cbx5	chromobox homolog 5 (Drosophila HP1a)	1.5	2.1
14208	Mrps2	mitochondrial ribosomal protein S2	1.0	2.1
14178	Hsd17b7	hydroxysteroid (17-beta) dehydrogenase 7	1.3	2.1
14383	2810421I24	RIKEN cDNA 2810421I24 gene	0.9	2.1
14302	Wdr77 *	WD repeat domain 77	1.5	2.1
14162	Gart	phosphoribosylglycinamide formyltransferase	1.2	2.1
14491	Polr3g	polymerase (RNA) III (DNA directed) polypeptide G	1.6	2.1
14243	Noc2l	nucleolar complex associated 2 homolog (S. cerevisiae)	1.5	2.1
14439	9230110C19	RIKEN cDNA 9230110C19 gene	1.5	2.1
14289	Nol8 *	nucleolar protein 8	1.2	2.1
14269	---	---	1.1	2.1
14390	Slc39a10 *	solute carrier family 39 (zinc transporter), member 10	1.0	2.1
14182	Lims1	LIM and senescent cell antigen-like domains 1	1.0	2.1
14480	Tbx3 *	T-box 3	1.5	2.1
14160	Ddx18	DEAD (Asp-Glu-Ala-Asp) box polypeptide 18	1.5	2.1
14372	Marcksl1	MARCKS-like 1	1.4	2.1
14410	A430041B07	RIKEN cDNA A430041B07 gene	0.7	2.1
14547	AI173486	expressed sequence AI173486	1.6	2.1
14165	Ctps	cytidine 5'-triphosphate synthase	1.6	2.1
14486	Mvd	mevalonate (diphospho) decarboxylase	1.2	2.1
14482	Ddx21 *	DEAD (Asp-Glu-Ala-Asp) box polypeptide 21	1.4	2.1
14334	Epb4.1l2	erythrocyte protein band 4.1-like 2	1.0	2.1
14287	Bri3bp *	Bri3 binding protein	1.4	2.1

14219	Pfdn2	prefoldin 2	1.3	2.1
14287	Aasdhppt	aminoadipate-semialdehyde dehydrogenase-phosphopanteth	1.5	2.1
14163	Timm8a1	translocase of inner mitochondrial membrane 8 homolog a1 (y	1.4	2.1
14241	Fance *	Fanconi anemia, complementation group E	1.4	2.1
14374	B3galt2	UDP-Gal:betaGlcNAc beta 1,3-galactosyltransferase, polypepti	0.9	2.1
14570	2410127E16	RIKEN cDNA 2410127E16 gene	1.0	2.1
14524	Erdr1	erythroid differentiation regulator 1	2.2	2.1
14510	Ifrd2	interferon-related developmental regulator 2	1.5	2.1
14354	AI464131	expressed sequence AI464131	1.0	2.1
14482	Ddx21 *	DEAD (Asp-Glu-Ala-Asp) box polypeptide 21	1.3	2.1
14530	Wdr5b	WD repeat domain 5B	2.1	2.1
14235	Slc1a4 *	solute carrier family 1 (glutamate/neutral amino acid transpor	1.6	2.1
14539	Ide	insulin degrading enzyme	1.2	2.1
14341	Nfib	nuclear factor I/B	0.8	2.1
14329	5730407O0	RIKEN cDNA 5730407O05 gene	0.3	2.1
14522	Gfer	growth factor, erv1 (S. cerevisiae)-like (augmenter of liver reg	1.4	2.1
14285	2810026P18	RIKEN cDNA 2810026P18 gene	1.4	2.1
14482	C1qbp	complement component 1, q subcomponent binding protein	1.4	2.1
14157	Ncl *	nucleolin	1.2	2.1
14381	---	---	1.4	2.1
14212	Srm	spermidine synthase	1.6	2.1
14520	Hes6	hairy and enhancer of split 6 (Drosophila)	1.7	2.1
14160	AL033314	expressed sequence AL033314	1.0	2.1
14183	Nucb2	nucleobindin 2	1.6	2.1
14407	4833422C13	RIKEN cDNA 4833422C13 gene	0.7	2.1
14483	Stx1a	syntaxin 1A (brain)	1.5	2.1
14283	Wdr43	WD repeat domain 43	1.6	2.1
14489	Pcdhb17	protocadherin beta 17	1.2	2.1
14294	Polr3e	polymerase (RNA) III (DNA directed) polypeptide E	1.6	2.1
14353	Taf4b	TAF4B RNA polymerase II, TATA box binding protein (TBP)-as	1.2	2.1
14248	Gas5 *	growth arrest specific 5	1.6	2.1
14166	Nola2 *	nucleolar protein family A, member 2	1.7	2.1
14166	Nola2 *	nucleolar protein family A, member 2	1.6	2.1
14519	2810453I06	RIKEN cDNA 2810453I06 gene	1.4	2.1
14394	4930403C10	RIKEN cDNA 4930403C10 gene	1.0	2.1
14171	Cstf1	cleavage stimulation factor, 3' pre-RNA, subunit 1	0.3	2.0
14517	Ogt	O-linked N-acetylglucosamine (GlcNAc) transferase (UDP-N-a	1.3	2.0
14550	1500012F01	RIKEN cDNA 1500012F01 gene	1.2	2.0
14559	LOC673503	hypothetical protein LOC673503	1.6	2.0
14266	Tmem34	transmembrane protein 34	1.1	2.0
14552	Cdk6	cyclin-dependent kinase 6	1.5	2.0
14363	Gemin5	gem (nuclear organelle) associated protein 5	0.9	2.0
14182	2610024G1	RIKEN cDNA 2610024G14 gene	1.5	2.0
14176	Drg2	developmentally regulated GTP binding protein 2	1.2	2.0
14558	Lrrtm1 *	leucine rich repeat transmembrane neuronal 1	0.7	2.0
14301	Cd3eap	CD3E antigen, epsilon polypeptide associated protein	1.9	2.0
14521	Eprs	glutamyl-prolyl-tRNA synthetase	1.1	2.0
14286	A930016P21	RIKEN cDNA A930016P21 gene	0.9	2.0
14541	Pwp1	PWP1 homolog (S. cerevisiae)	1.7	2.0
14303	Gusb	glucuronidase, beta	1.2	2.0
14584	Pou6f2	POU domain, class 6, transcription factor 2	2.5	2.0

14484	Gas1	growth arrest specific 1	1.4	2.0
14219	Igfbp4 *	insulin-like growth factor binding protein 4	1.0	2.0
14224	Itga6	integrin alpha 6	0.9	2.0
14337	Slc9a9	solute carrier family 9 (sodium/hydrogen exchanger), isoform	1.2	2.0
14507	Defcr5	defensin related cryptdin 5	1.9	2.0
14439	Mtac2d1 *	membrane targeting (tandem) C2 domain containing 1	4.1	2.0
14524	Metapl1	methionine aminopeptidase-like 1	0.9	2.0
14281	2610019A0	RIKEN cDNA 2610019A05 gene	1.0	2.0
14413	Nkrf	NF-kappaB repressing factor	1.1	2.0
14248	Kcnma1	potassium large conductance calcium-activated channel, subf	1.6	2.0
14207	Art2b	ADP-ribosyltransferase 2b	2.1	2.0
14537	Cpa4	carboxypeptidase A4	1.2	2.0
14270	4933439F18	RIKEN cDNA 4933439F18 gene	0.9	2.0
14245	Nudt6	nudix (nucleoside diphosphate linked moiety X)-type motif 6	1.3	2.0
14369	Grhl3	grainyhead-like 3 (Drosophila)	1.2	2.0
14228	Wdr77 *	WD repeat domain 77	1.6	2.0
14515	Sox9	SRY-box containing gene 9	2.1	2.0
14509	Gtpbp3	GTP binding protein 3	1.4	2.0
14514	Lyplal1	lysophospholipase-like 1	1.6	2.0
14522	Las1l	LAS1-like (S. cerevisiae)	1.6	2.0
14262	Noc3l	nucleolar complex associated 3 homolog (S. cerevisiae)	1.6	2.0
14176	Slc12a2	solute carrier family 12, member 2	1.1	2.0
14339	6720458F09	RIKEN cDNA 6720458F09 gene	0.9	2.0
14549	Nob1	NIN1/RPN12 binding protein 1 homolog (S. cerevisiae)	1.2	2.0
14176	Gtf2f1	general transcription factor IIF, polypeptide 1	1.2	2.0
14379	---	Transcribed locus	1.0	2.0
14204	Hoxa11	homeo box A11	1.0	2.0
14483	Ttc3	tetratricopeptide repeat domain 3	1.8	2.0
14363	2700094K13	RIKEN cDNA 2700094K13 gene	0.8	2.0
14524	Phospho1	phosphatase, orphan 1	1.2	2.0
14235	Hnrpa1	heterogeneous nuclear ribonucleoprotein A1	0.9	2.0
14248	Osbpl10	oxysterol binding protein-like 10	1.2	2.0
14433	2410042D2	RIKEN cDNA 2410042D21 gene	2.3	2.0
14511	2410018C17	RIKEN cDNA 2410018C17 gene	1.8	2.0
14380	BC068171	cDNA sequence BC068171	1.1	2.0
14227	Limd1	LIM domains containing 1	1.1	2.0
14518	Mtac2d1 *	membrane targeting (tandem) C2 domain containing 1	3.3	2.0
14175	Eif4ebp1	eukaryotic translation initiation factor 4E binding protein 1	0.8	2.0
14386	B930041F14	RIKEN cDNA B930041F14 gene	2.9	2.0
14236	Fads1	fatty acid desaturase 1	0.7	2.0
14573	Slc20a2	Solute carrier family 20, member 2	1.1	2.0
14359	Sdhc	succinate dehydrogenase complex, subunit C, integral membra	1.0	2.0
14166	Fbl	fibrillarin	1.3	2.0
14256	Homer1	homer homolog 1 (Drosophila)	2.2	2.0
14246	2610204L23	RIKEN cDNA 2610204L23 gene	1.2	2.0
14357	Gchfr	GTP cyclohydrolase I feedback regulator	1.0	2.0
14508	Serpinh1	serine (or cysteine) peptidase inhibitor, clade H, member 1	1.9	2.0
14250	Ubxd4	UBX domain containing 4	1.0	2.0
14341	D19Bwg135	DNA segment, Chr 19, Brigham & Women's Genetics 1357 expr	1.6	2.0
14158	Uhrf1	ubiquitin-like, containing PHD and RING finger domains, 1	1.3	2.0
14476	Mettl1	methyltransferase-like 1	1.2	2.0

14517	Il1rn	interleukin 1 receptor antagonist	1.1	2.0
14265	Zfp553	zinc finger protein 553	1.4	2.0
14208	Ywhag	3-monooxygenase/tryptophan 5-monooxygenase activation p	1.7	2.0
14169	Rrs1	RRS1 ribosome biogenesis regulator homolog (S. cerevisiae)	1.3	2.0
14336	Surf2	surfeit gene 2	1.4	2.0
14237	Pdk1	pyruvate dehydrogenase kinase, isoenzyme 1	0.5	2.0
14420	Abce1 *	ATP-binding cassette, sub-family E (OABP), member 1	1.9	2.0
14292	Ddah1	dimethylarginine dimethylaminohydrolase 1	1.4	2.0
14234	Bzw2	basic leucine zipper and W2 domains 2	1.0	2.0
14219	Nedd4	neural precursor cell expressed, developmentally down-regult	1.1	2.0
14421	Atp13a3 *	ATPase type 13A3	1.6	2.0
14389	Tfpt *	TCF3 (E2A) fusion partner	1.5	2.0
14389	Ddx31	DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 31	2.0	2.0
14301	Ccnd2	cyclin D2	2.2	2.0
14258	Cacna2d1	calcium channel, voltage-dependent, alpha2/delta subunit 1	2.0	2.0
14475	Rpo1-4	RNA polymerase 1-4	1.7	2.0
14224	Cdk4 *	cyclin-dependent kinase 4	1.3	2.0
14586	---	Transcribed locus	1.9	2.0
14372	B230312I18	RIKEN cDNA B230312I18 gene	1.8	2.0
14379	---	---	2.0	2.0
14208	Slc25a30	solute carrier family 25, member 30	1.6	2.0
14523	Hspa1a	heat shock protein 1A	3.7	2.0
14373	Aldh9a1	aldehyde dehydrogenase 9, subfamily A1	1.0	2.0
14603	Acsl1 *	acyl-CoA synthetase long-chain family member 1	1.2	2.0
14266	LOC633640	similar to CG10866-PA	1.7	2.0
14400	BC031748	cDNA sequence BC031748	0.9	2.0
14263	Eif4b	eukaryotic translation initiation factor 4B	1.1	2.0
14495	Supt16h	suppressor of Ty 16 homolog (S. cerevisiae)	0.9	2.0
14254	H2-Ab1	histocompatibility 2, class II antigen A, beta 1	2.5	2.0
14542	2410019A1	RIKEN cDNA 2410019A14 gene	1.7	2.0
14478	2010109N1	RIKEN cDNA 2010109N14 gene	1.4	2.0
14236	6530403A0	RIKEN cDNA 6530403A03 gene	1.3	2.0
14509	Got1	glutamate oxaloacetate transaminase 1, soluble	1.5	2.0
14486	Pole	polymerase (DNA directed), epsilon	1.1	2.0
14498	Timm9	translocase of inner mitochondrial membrane 9 homolog (yea	1.9	2.0
14480	---	---	1.6	2.0
14596	---	---	2.3	2.0
14509	Ppp1r14b	protein phosphatase 1, regulatory (inhibitor) subunit 14B	1.4	2.0
14370	Sox21	SRY-box containing gene 21	1.3	2.0
14363	Trim37	tripartite motif protein 37	1.6	2.0
14511	Sf3b5 *	splicing factor 3b, subunit 5	1.1	2.0
14493	Gpatc4	G patch domain containing 4	1.3	2.0
14227	Syncrip *	synaptotagmin binding, cytoplasmic RNA interacting protein	1.2	2.0
14206	Dnaja3	DnaJ (Hsp40) homolog, subfamily A, member 3	1.1	2.0
14195	Fahd1	fumarylacetoacetate hydrolase domain containing 1	1.2	2.0
14550	Prpf38b	PRP38 pre-mRNA processing factor 38 (yeast) domain contain	0.9	2.0
14222	Msh3	mutS homolog 3 (E. coli)	1.5	2.0
14158	Scd2	stearoyl-Coenzyme A desaturase 2	1.0	2.0
14313	3110005L24	RIKEN cDNA 3110005L24 gene	1.2	2.0
14481	Ppp2r4	protein phosphatase 2A, regulatory subunit B (PR 53)	1.4	2.0
14481	Prps1 *	phosphoribosyl pyrophosphate synthetase 1	1.2	2.0

14209	4933411K20	RIKEN cDNA 4933411K20 gene	2.2	2.0
14521	2600005C20	RIKEN cDNA 2600005C20 gene	1.3	2.0
14190	Brca2	breast cancer 2	1.6	2.0
14266	Pus7	pseudouridylate synthase 7 homolog (S. cerevisiae)	1.2	2.0
14339	Rpl13a	ribosomal protein L13a	1.1	2.0
14412	---	PREDICTED: Mus musculus hypothetical protein LOC626097	1.3	2.0
14158	Impdh2	inosine 5'-phosphate dehydrogenase 2	1.5	2.0
14238	Nsun2	NOL1/NOP2/Sun domain family 2	1.5	2.0
14178	2700038N0	RIKEN cDNA 2700038N03 gene	2.0	2.0
14558	Grwd1	glutamate-rich WD repeat containing 1	1.3	2.0
14481	1110014J01	RIKEN cDNA 1110014J01 gene	1.6	2.0

Genes which were previously identified as Wnt targets in colorectal cancer cell lines (van de Watering et al., 2002; van der Flier et al., 2007) are indicated in grey. A total of 58 probes corresponding to 43 different genes are included in the table. The genes indicated with an asterisk are present more than once in the table.

Table S2. Primer sequences for quantitative real-time RT-PCR

Genes	Forward	Reverse
Actb	5'-CATCCGTAAAGACCTCTATGCCAAC-3'	5'-ATGGAGCCACCGATCCACA-3'
Ascl2	5'-AAGCACACCTTGACTGGTACG-3'	5'-AAGTGGACGTTTGCACCTTCA-3'
Bmi1	5'-ATCCCCACTTAATGTGTGTCCT-3'	5'-CTTGCTGGTCTCCAAGTAACG-3'
Ccna2	5'-AGGCTGACACTCTTTCCGAA-3'	5'-CCTCTGGGGAAAAAGGAAAG-3'
Ccnb1	5'-TGCTTCCTGTTATGCAGCAC-3'	5'-GTGTACAGTTCAGCTGTGCCA-3'
Ccnd1	5'-CATGTATCATCTAGCCATGCACGAG-3'	5'-ATGCACAACAGGCCGCTACA-3'
Cdkn1a	5'-CTGTCTTGCACTCTGGTGTCTGA-3'	5'-CCAATCTGCGCTTGGAGTGA-3'
Cdkn1b	5'-TCGACGCCAGACGTAAACAG-3'	5'-TCTCAGTGCTTATACAGGATGTCCA-3'
Cdkn1c	5'-CGAGGAGCAGGACGAGAATC-3'	5'-GAAGAAGTCGTTCGCATTGGC-3'
Ctnnb1	5'-CCTTGGATATCGCCAGGATGA-3'	5'-CAGATCAGGCAGCCCATCAA-3'
Ephb2	5'-GCCGGCTTTACCTCTTTCGAC-3'	5'-GGCAGGCGAATGTCAAACCT-3'
Ephb3	5'-CATGGACACGAAATGGGTGAC-3'	5'-GCGGATAGGATTCATGGCTTCA-3'
Gpx2	5'-ATGGCTTACATTGCCAAGTCG-3'	5'-TGCCTCTGAACGTATTGAAGTC-3'
Hes1	5'-ATAGCTCCCGGCATTCCAAG-3'	5'-GCGCGGTATTTCCCCAACA-3'
Hopx	5'-ACCAGGTGGAGATCCTGGAGTA-3'	5'-CCAGGCGCTGCTTAAACCAT-3'
Jag1	5'-CCTCGGGTCAGTTTGAGCTG-3'	5'-CCTTGAGGCACACTTTGAAGTA-3'
Jag2	5'-AGTTCCTGGATGGAAGACTGCAA-3'	5'-TGACCAGAGAGCAGGCAAGG-3'
Lgr5	5'-TGCCCCGTGGCTTTCTTATC-3'	5'-TTTCCCAGGCTGCCCATATC-3'
Msi1	5'-CCTCTCACGGCTTATGGGC-3'	5'-CTGTGGCAATCAAGGGACC-3'
Myb	5'-CAATGTCCTCAAAGCCTTTACCG-3'	5'-CATGACCAGAGTTCGAGCTGAGA-3'
Myc	5'-GCTCGCCCAAATCCTGTACCT-3'	5'-TCTCCACAGACACCACATCAATTTC-3'
Notch1	5'-GATGGCCTCAATGGGTACAAG-3'	5'-TCGTTGTTGTTGATGTCACAGT-3'
Notch2	5'-ATGTGGACGAGTGTCTGTTGC-3'	5'-GGAAGCATAGGCACAGTCATC-3'
Pcna	5'-GTCTGCAGATGTGCCCCTTG-3'	5'-GACACGCTGGCATCTCAGGA-3'
Slc12a2	5'-GCCGTACAGACTTCACGAAGATGA-3'	5'-TGTTAGCTGTGCTTGAATGCTCCT-3'
Sox9	5'-GAGCCGGATCTGAAGAGGGA-3'	5'-GCTTGACGTGTGGCTTGTTC-3'