Supplementary Table 2. Complete list of differentially expressed genes between intramucosal carcinomas and adenomas.

Overexpressed in Intramucosal Carcinoma Relative to Adenoma		
Gene Symbol	**Gene Name**	**Gene Function**
St8sia6	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 6	Sialyltransferase activity
Tnfsf10	tumor necrosis factor (ligand) superfamily, member 10	Tumor necrosis factor receptor binding, cytokine activity, regulation of apoptotic processes
BC037703	cDNA sequence BC037703	Unknown
Pcdh19	protocadherin 19	Calcium ion binding, cell adhesion
Slc19a3	solute carrier family 19 (sodium/hydrogen exchanger), member 3	Folic acid binding, thiamine transmembrane transport
BC057170	cDNA sequence BC057170	Cellular response to interferon gamma, defense response to protozoa and Gram positive bacteria
Syt11	synaptotagmin XI	Calcium-dependent phospholipid binding
Pcdhb4	protocadherin beta 4	Cell adhesion
Ramp3	receptor (calcitonin) activity modifying protein 3	G-protein coupled receptor signaling pathway
Gzmb	granzyme B	T-cell mediated cytotoxicity, apoptosis, serine-type endopeptidase activity
Sema3e	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3E	Angiogenesis and patterning of blood vessels, cell differentiation, nervous system development, synapse organization, negative regulation of cell matrix adhesion
Gata5	GATA binding protein 5	RNA polymerase II distal enhancer sequence-specific DNA binding transcription factor activity, cellular response to BMP, intestinal epithelial differentiation
Cxcl13	chemokine (C-X-C motif) ligand 13	CXCR3, -5, and -10 chemokine receptor binding, B cell chemotaxis across high endothelial venule, activation of Rap GTPase activity, lymph node development, positive regulation of cell-cell adhesion mediated by integrin
Dnase1l3	deoxyribonuclease 1-like 3	Endonuclease activity, apoptotic DNA fragmentation
Pld5	phospholipase D family, member 5	Catalytic activity
Lcn2	lipocalin 2	Iron ion binding, siderophore transport, innate

		immune response, regulation of apoptotic processes
Tm7sf4	transmembrane 7 superfamily member 4	Cell membrane fusion, myeloid dendritic cell differentiation, cellular response to tumor necrosis factor and macrophage colony-stimulating factor, osteoclast fusion, regulation of macrophage fusion, regulation of monocyte differentiation
Rbm24	RNA binding motif protein 24	mRNA 3'-UTR binding, regulation of myotube differentiation, regulation of mRNA stability
5033414K04Rik	phosphotyrosine interaction domain containing 1	Cellular response to interleukin-6, to fatty acid, to leptin stimulus, to tumor necrosis factor; negative regulation of glucose import; positive regulation of ATP biosynthetic process; regulation of mitochondrial membrane potential; regulation of reactive oxygen species metabolic process
NA	NA	Unknown
Scara3	scavenger receptor class A, member 3	Unknown
Ift57	intraflagellar transport 57 homolog (Chlamydomonas)	Component of Golgi apparatus, cilium, dendrite terminus, microtubule basal body, and photoreceptor connecting cilium
Cdo1	cysteine dioxygenase 1, cytosolic	Cystine dioxygenase activity, L-cysteine catabolism to taurine, oxidation-reduction process
Vtcn1	V-set domain containing T cell activation inhibitor 1	Interferon-gamma secretion, interleukin-4 secretion, negative T-cell activation regulation, response to protozoa
Serpina1a	serine (or cysteine) peptidase inhibitor, clade A, member 1A	Protein N-linked glycosylation, response to cytokine stimulus, response to peptide hormone stimulus
Wdr49	WD repeat domain 49	Unknown
Clip4	CAP-GLY domain containing linker protein family, member 4	Unknown
Overexpressed in Adenoma Relative to Intramucosal Carcinoma		
Lrrc19	leucine rich repeat containing 19	Unknown
Akr1c14	aldo-keto reductase family 1, member C14	Androsterone dehydrogenase activity, oxidation-reduction process
Retnlb	resistin like beta	Activity in gut parasite infection, goblet cell function, Th2 associated cytokine with inflammatory and

		remodeling activity
Nr0b1	nuclear receptor subfamily 0, group B, member 1	RNA binding, Leydig and Sertoli cell differentiation, negative regulation of transcription from RNA polymerase II promoter, response to stress, DNA-dependent negative regulation of transcription, spermatogenesis
Mettl7b	methyltransferase like 7B	Unknown
Glod5	glyoxalase domain containing 5	Unknown
9030619P08Rik	RIKEN cDNA 9030619P08 gene	Unknown
Sprr1a	small proline-rich protein 1A	Component of cell periphery
Olfr165	olfactory receptor 165	G-protein coupled receptor activity, olfactory receptor activity
C130090K23Rik	Cwh43 cell wall biogenesis C-terminal homolog (S. cerevisiae)	Unknown
Gal3st2	galactose-3-O-sulfotransferase 2	Galactose 3-O-sulfotransferase activity, glycoprotein biosynthetic process, sulfation, membrane component
Acsm3	acyl-CoA synthetase medium-chain family member 3	Fatty acid ligase activity, fatty acid biosynthetic process, component of mitochondrial matrix
St6galnac6	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 6	Alpha-N-acetylgalactosaminide alpha-2, 6-sialyltransferase activity, ganglioside biosynthetic process, oligosaccharide biosynthetic process
Sval1	seminal vesicle antigen-like 1	Unknown
Gcnt3	glucosaminyl (N-acetyl) transferase 3, mucin type	Immunoglobulin production in mucosal tissue, intestinal absorption, metabolic process
Slc17a9	solute carrier family 17, member 9	Transporter activity
Gal3st2	galactose-3-O-sulfotransferase 2	Galactose 3-O-sulfotransferase activity, glycoprotein biosynthetic process, sulfation, membrane component
Rnf39	ring finger protein 39	Unknown
Ddah1	dimethylarginine dimethylaminohydrolase 1	Dimethylargininase activity, positive regulation of nitric oxide biosynthetic process, regulation of systemic arterial blood pressure, component of mitochondrion
Muc2	mucin 2	Apoptotic process, negative regulation of cell migration and proliferation, component of inner and

		outer intestinal mucus layer and proteinaceous extracellular matrix
Galnt12	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 12	Polypeptide N-acetylgalactosaminyltransferase activity
Tff3	trefoil factor 3, intestinal	Component of secretory granule (intestinal goblet cells)
Best2	bestrophin 2	Chloride channel activity, membrane depolarization, component of cilia
Tmem117	transmembrane protein 117	Unknown
Hepacam2	HEPACAM family member 2	Possible role in cell division
Chst4	carbohydrate (chondroitin 6/keratan) sulfotransferase 4	Leukocyte tethering or rolling, protein sulfation
Emp1	epithelial membrane protein 1	Unknown
Rep15	RAB15 effector protein	Unknown
Pmp22	peripheral myelin protein 22	Myelin assembly
Akr1c12	aldo-keto reductase family 1, member C12	Unknown
Mfsd4	major facilitator superfamily domain containing 4	Unknown
Fabp7	fatty acid binding protein 7, brain	Cell proliferation in forebrain, neurogenesis, prepulse inhibition, startle response, component of cell projections and neuronal cell body
Kcnk6	potassium inwardly-rectifying channel, subfamily K, member 6	Possible potassium ion transmembrane transport
Stc2	stanniocalcin 2	Cellular calcium ion homeostasis, endoplasmic reticulum unfolded protein response, negative regulation of multicellular organism growth, regulation of store-operated calcium entry, response to endoplasmic reticulum stress, response to oxidative stress, component of Golgi apparatus and endoplasmic reticulum
Cgref1	cell growth regulator with EF hand domain 1	Possible cell adhesion and cell cycle arrest
Hpgd	hydroxyprostaglandin dehydrogenase 15 (NAD)	15-hydroxyprostaglandin dehydrogenase (NAD+) activity, ductus arteriosus closure, oxidation-reduction process
Sema4g	sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4G	Possible cell differentiation
Cox7a1	cytochrome c oxidase, subunit VIIa 1	Component of mitochondria

Gm459	Igkv4-86 immunoglobulin kappa variable 4-86	Unknown
Lgals3	lectin, galactose binding, soluble 3	Extracellular matrix organization, skeletal system development, component of cytoplasm and proteinaceous extracellular matrix
B4galt4	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 4	Possible N-acetyllactosamine synthase activity, possible metal ion binding