№	Oncogene	Official Full Name	Also known as:	Summary:	Summary: (Chinese)		Oncogene
1	**ABL1**	ABL proto-oncogene 1, non-receptor tyrosine kinase	ABL; JTK7; p150; c-ABL; v-abl; c-ABL1; bcr/abl	This gene has been found fused to a variety of translocation partner genes in various leukemias	该基因已经发现稠合到各种各种白血病易位伴侣基因	与肿瘤的关系：BRA-ABL1融合基因是慢性粒细胞性白血病的一个重要病因	**ABL1**
2	**AKT1**	AKT serine/threonine kinase 1	AKT; PKB; RAC; CWS6; PRKBA; PKB-ALPHA; RAC-ALPHA	Mutations in this gene have been associated with the Proteus syndrome. Multiple alternatively spliced transcript variants have been found for this gene.	在这种基因突变已与变形杆菌综合征（普罗秋斯综合症）。多重选择性剪接转录变异体也发现了这种基因。	与肿瘤的关系：在横纹肌实体瘤中有发现AKT1过表达	**AKT1**
3	**ALK**	anaplastic lymphoma receptor tyrosine kinase	CD246; NBLST3	This gene has been found to be rearranged, mutated, or amplified in a series of tumours including anaplastic large cell lymphomas, neuroblastoma, and non-small cell lung cancer.	该基因已被发现被重新安排的，突变的，或扩增在一系列的肿瘤，包括间变性大细胞淋巴瘤，神经母细胞瘤，和非小细胞肺癌的扩增。	与肿瘤的关系：EML4-ALK融合基因占非小细胞肺癌中的3~5%，	**ALK**
4	**APC**	APC, WNT signaling pathway regulator	GS; DP2; DP3; BTPS2; DP2.5; PPP1R46	Defects in this gene cause familial adenomatous polyposis (FAP), an autosomal dominant pre-malignant disease that usually progresses to malignancy.	缺陷这个基因导致家族性息肉病（FAP），一种常染色体显性恶性疾病前，通常发展为恶性肿瘤。	带有APC突变的人，在40岁左右发生结直肠癌的可能性大幅升高	**APC**
5	**ATM**	ATM serine/threonine kinase	AT1; ATA; ATC; ATD; ATE; ATDC; TEL1; TELO1	Mutations in this gene are associated with ataxia telangiectasia, an autosomal recessive disorder.	在这种基因突变与共济失调毛细血管扩张症，常染色体隐性病症相关。	ATM失活与多种白血病、淋巴瘤相关	**ATM**
6	**BRAF**	B-Raf proto-oncogene, serine/threonine kinase	NS7; B-raf; BRAF1; RAFB1; B-RAF1	Mutations in this gene have also been associated with various cancers, including non-Hodgkin lymphoma, colorectal cancer, malignant melanoma, thyroid carcinoma, non-small cell lung carcinoma, and adenocarcinoma of lung.	在这个基因的突变也已与各种癌症，包括非何杰金氏淋巴瘤，结肠直肠癌，恶性黑素瘤，甲状腺癌，非小细胞肺癌和肺腺癌相关联。	但是如果BRAF发生V600E突变，那么无需T598和S601两个位点的磷酸化，BRAF就已获得持续的活性，并刺激细胞进入分裂周期	**BRAF**

7	**CDH1**	cadherin 1	UVO; CDHE; ECAD; LCAM; Arc-1; CD324	Mutations in this gene are correlated with gastric, breast, colorectal, thyroid and ovarian cancer.	在这种基因突变与胃，乳房，结肠直肠，甲状腺癌和卵巢癌相关。	CDH1与癌细胞的浸润、癌细胞转移相关，当CDH1基因发生突变失活时，细胞更容易突破基底膜、侵入到周围的组织中去	**CDH1**
8	**CDKN2A**	cyclin dependent kinase inhibitor 2A	ARF; MLM; P14; P16; P19; CMM2; INK4; MTS1; TP16; CDK4I; CDKN2; INK4A; MTS-1; P14ARF; P19ARF; P16INK4; P16INK4A; P16-INK4A	This gene is frequently mutated or deleted in a wide variety of tumors, and is known to be an important tumor suppressor gene.	该基因突变频率或在各种各样的肿瘤中删除，并已知是一个重要的肿瘤抑制基因。	CDKN2A的突变与缺失与多种癌症的发生相关	**CDKN2A**
9	**CSF1R**	colony stimulating factor 1 receptor	FMS; CSFR; FIM2; HDLS; C-FMS; CD115; CSF-1R; M-CSF-R	Mutations in this gene have been associated with a predisposition to myeloid malignancy.	在这种基因突变已与易感性骨髓恶性肿瘤相关。	CSF1R和慢性骨髓单核细胞性白血病、以及M4急性成髓细胞白血病相关。CSF1R和CSF1都和乳腺癌相关	**CSF1R**
10	**CTNNB1**	catenin beta 1	CTNNB; MRD19; armadillo	Mutations in this gene are a cause of colorectal cancer (CRC), pilomatrixoma (PTR), medulloblastoma (MDB), and ovarian cancer.	在这个基因的突变是结肠直肠癌（CRC）pilomatrixoma（PTR），髓母细胞瘤（MDB），和卵巢癌的原因。	在这个基因的突变是结肠直肠癌（CRC）pilomatrixoma（PTR），髓母细胞瘤（MDB），和卵巢癌的原因	**CTNNB1**
11	**EGFR**	epidermal growth factor receptor	ERBB; HER1; mENA; ERBB1; PIG61; NISBD2	Mutations in this gene are associated with lung cancer.	在这种基因突变与肺癌有关。	EGFR的mRNA表达水平高低，对EGFR靶向治疗效果，会有显著差异。mRNA表达水平高的非小细胞肺癌患者，往往经针对EGFR的靶向治疗后有良好效果	**EGFR**
12	**ERBB2**	erb-b2 receptor tyrosine kinase 2	NEU; NGL; HER2; TKR1; CD340; HER-2; MLN 19; HER-2/neu	Amplification and/or overexpression of this gene has been reported in numerous cancers, including breast and ovarian tumors.	扩增和/或该基因的过表达已经报道在许多癌症，包括乳腺癌和卵巢肿瘤。	乳腺癌中30%有ERBB2的突变。	**ERBB2**
13	**ERBB4**	erb-b2 receptor tyrosine kinase 4	HER4; ALS19; p180erbB4	Mutations in this gene have been associated with cancer. Alternatively spliced variants which encode different protein isoforms have been described; however, not all variants have been fully characterized.	在这种基因突变已与癌症相关。可变剪接变体，其编码不同蛋白同种型已被描述;然而，并非所有的变体已被充分表征。	erbB4与多种肿瘤相关，尤其与乳腺癌相关	**ERBB4**

14	**EZH2**	enhancer of zeste 2 polycomb repressive complex 2 subunit	WVS; ENX1; EZH1; KMT6; WVS2; ENX-1; EZH2b; KMT6A	This protein may play a role in the hematopoietic and central nervous systems. Multiple alternatively splcied transcript variants encoding distinct isoforms have been identified for this gene.	这种蛋白可能在造血和中枢神经系统的作用。多或者splcied转录变异体的编码不同的亚型已经确定了这个基因。	EZH2的过量表达会导致多种原发的癌症	**EZH2**
15	**FBXW7**	F-box and WD repeat domain containing 7	AGO; CDC4; FBW6; FBW7; hAgo; FBX30; FBXW6; SEL10; hCdc4; FBXO30; SEL-10	Mutations in this gene are detected in ovarian and breast cancer cell lines, implicating the gene's potential role in the pathogenesis of human cancers.	在这个基因的突变在卵巢癌和乳腺癌细胞系中被检测到，在人类癌症的发病机制暗示该基因的潜在作用。	在卵巢癌、乳腺癌和结直肠癌发现有FBXW7的突变。	**FBXW7**
16	**FGFR1**	Fibroblast growth factor receptor 1	CEK; FLG; HH2; OGD; ECCL; FLT2; KAL2; BFGFR; CD331; FGFBR; FLT-2; HBGFR; N-SAM; FGFR-1; HRTFDS; bFGF-R-1	Chromosomal aberrations involving this gene are associated with stem cell myeloproliferative disorder and stem cell leukemia lymphoma syndrome.	该基因的染色体畸变与干细胞骨髓增生性病症相关的和干细胞白血病淋巴瘤综合征。	与肺鳞癌相关。	**FGFR1**
17	**FGFR2**	Fibroblast growth factor receptor 2	BEK; JWS; BBDS; CEK3; CFD1; ECT1; KGFR; TK14; TK25; BFR-1; CD332; K-SAM	Mutations in this gene are associated with Crouzon syndrome, Pfeiffer syndrome, Craniosynostosis, Apert syndrome, Jackson-Weiss syndrome, Beare-Stevenson cutis gyrata syndrome, Saethre-Chotzen syndrome, and syndromic craniosynostosis.	在这个基因的突变与克鲁宗综合征，菲佛综合征，颅，亚伯氏症，杰克逊 - 魏斯综合征，BEARE - 史蒂文森表皮gyrata综合征，Saethre-Chotzen综合征和颅缝早闭综合征。编码不同亚型多重选择性剪接转录变异体已经注意到了这个基因。	一个第2内含子的点突变与一种高乳腺癌风险相关。	**FGFR2**
18	**FGFR3**	Fibroblast growth factor receptor 3	ACH; CEK2; JTK4; CD333; HSFGFR3EX	Mutations in this gene lead to craniosynostosis and multiple types of skeletal dysplasia. Three alternatively spliced transcript variants that encode different protein isoforms have been described.	突变这个基因导致颅缝早闭和多种类型的骨骼发育不良的。三个编码不同蛋白同种型的可变剪接转录物变体已有描述。	缺少FGFR3与膀胱癌相关	**FGFR3**

19	**FLT3**	fms related tyrosine kinase 3	FLK2; STK1; CD135; FLK-2	Mutations that result in the constitutive activation of this receptor result in acute myeloid leukemia and acute lymphoblastic leukemia.	导致在急性骨髓性白血病和急性淋巴细胞性白血病该受体结果的组成性活化的突变。	FLT3的串联持拷贝数增加是急性髓性白血病中最常见的突变，而且有这种突变也意味着预后不好	**FLT3**
20	**GNA11**	G protein subunit alpha 11	FBH; FBH2; FHH2; HHC2; GNA-11; HYPOC2	Mutations in this gene have been associated with hypocalciuric hypercalcemia type II (HHC2) and hypocalcemia dominant 2 (HYPOC2). Patients with HHC2 and HYPOC2 exhibit decreased or increased sensitivity, respectively, to changes in extracellular calcium concentrations.	在这种基因突变与性低钙高钙血症II型（HHC2）和低钙血症显性2（HYPOC2）相关联。患者HHC2和HYPOC2展品分别减少或增加的敏感性，在细胞外钙离子浓度的变化。	乳癌 前列腺癌 葡萄膜黑色素瘤	**GNA11**
22	**GNAQ**	G protein subunit alpha q	GAQ; SWS; CMC1; G-ALPHA-q	Mutations at this locus have been associated with problems in platelet activation and aggregation. A related pseudogene exists on chromosome 2.	在这个位点突变与在血小板激活和聚集的问题有关。一个相关的假基因存在2号染色体上。	葡萄膜黑色素瘤 甲状腺癌	**GNAQ**
21	**GNAS**	GNAS complex locus	AHO; GSA; GSP; POH; GPSA; NESP; SCG6; SgVI; GNAS1; C20orf45	Mutations in this gene result in pseudohypoparathyroidism type 1a, pseudohypoparathyroidism type 1b, Albright hereditary osteodystrophy, pseudopseudohypoparathyroidism, McCune-Albright syndrome, progressive osseus heteroplasia, polyostotic fibrous dysplasia of bone, and some pituitary tumors.	突变这个基因导致假性1A型假性1B型，奥尔布赖特的遗传性骨病，pseudopseudohypoparathyroidism，麦 - Albright综合征，进行性osseus发育异常，骨多发性骨纤维异常增殖症，有的垂体瘤。	与脑垂体瘤相关	**GNAS**
23	**HNF1A**	HNF1 homeobox A	HNF1; LFB1; TCF1; MODY3; TCF-1; HNF-1A; IDDM20	Defects in this gene are a cause of maturity onset diabetes of the young type 3 (MODY3) and also can result in the appearance of hepatic adenomas. Alternative splicing results in multiple transcript variants encoding different isoforms.	在这个基因的缺陷是年轻的3型（MODY3）的成年起病型糖尿病的一个原因，也可导致肝腺瘤的外观。在多个转录剪接变异体导致编码不同亚型。	肝腺瘤	**HNF1A**

24	**HRAS**	HRas proto-oncogene, GTPase	CTLO; HAMSV; HRAS1; RASH1; p21ras; C-H-RAS; H-RASIDX; C-BAS/HAS; C-HA-RAS1	Defects in this gene are implicated in a variety of cancers, including bladder cancer, follicular thyroid cancer, and oral squamous cell carcinoma. Multiple transcript variants, which encode different isoforms, have been identified for this gene.	在这个基因的缺陷涉及各种癌症，包括膀胱癌，甲状腺滤泡状癌和口腔鳞状细胞癌的。多个转录变异体，其编码不同同种型，已经确定了该基因。	HRAS与膀胱癌有密切的关系，HRAS若发生G12V、G12S突变，则其活性就永久激活. HRAS的突变与甲状腺癌、肾癌也有关系	**HRAS**
25	**IDH1**	isocitrate dehydrogenase (NADP(+)) 1, cytosolic	IDH; IDP; IDCD; IDPC; PICD; HEL-216; HEL-S-26	The presence of this enzyme in peroxisomes suggests roles in the regeneration of NADPH for intraperoxisomal reductions	在过氧化物酶这种酶的存在表明在NADPH为intraperoxisomal削减再生作用	IDH1的突变会导致干骺端软骨瘤病，并且IDH1与胶质母细胞瘤相关.	**IDH1**
28	**IDH2**	isocitrate dehydrogenase (NADP(+)) 2, mitochondrial	IDH; IDP; IDHM; IDPM; ICD-M; D2HGA2; mNADP-IDH	The protein encoded by this gene is the NADP(+)-dependent isocitrate dehydrogenase found in the mitochondria. It plays a role in intermediary metabolism and energy production. This protein may tightly associate or interact with the pyruvate dehydrogenase complex. Alternative splicing results in multiple transcript variants.	由该基因编码的蛋白质是NADP（+）- 在线粒体中发现从属异柠檬酸脱氢酶。它在中间代谢和能源生产的作用。这种蛋白质可以紧密关联或与丙酮酸脱氢酶复合物相互作用。选择性剪接结果在多个抄本变形	IDH2突变导致了分化抑制，并在不同的肿瘤背景下改变了DNA甲基化和过度增殖 T-cell 淋巴癌 乳腺癌	**IDH2**
26	**JAK2**	Janus kinase 2	JTK10; THCYT3	This gene product is a protein tyrosine kinase involved in a specific subset of cytokine receptor signaling pathways. It has been found to be constitutively associated with the prolactin receptor and is required for responses to gamma interferon. Mice that do not express an active protein for this gene exhibit embryonic lethality associated with the absence of definitive erythropoiesis.	这个基因的产物是一种参与细胞因子受体信号通路的特定子集的蛋白酪氨酸激酶。已发现与催乳素受体被constituitively相关联，并且需要到γ干扰素应答。小鼠不表达与不存在明确的红细胞生成的关联该基因表现出胚胎致死的活性的蛋白质。	在白血病人中发现在TEL-JAK2融合基因 T-cell 淋巴癌 卵巢癌	**JAK2**

27	**JAK3**	Janus kinase 3	JAKL; LJAK; JAK-3; L-JAK; JAK3_HUMAN	Mutations in this gene are associated with autosomal SCID (severe combined immunodeficiency disease).	在这种基因突变与常染色体的SCID（重症联合免疫缺陷病）相关联。	JAK1、JAK2、JAK3的活化突变，都已被确认是血液性的癌症的病因。	**JAK3**
29	**KDR**	kinase insert domain receptor	FLK1; CD309; VEGFR; VEGFR2	Mutations of this gene are implicated in infantile capillary hemangiomas.	这种基因突变有牵连的婴儿毛细血管瘤。	肿瘤的生长和扩散依赖于血管生成。肿瘤血管生成是一系列复杂的调控过程,其中VEGF及其受体发挥着重要作用	**KDR**
30	**KIT**	KIT proto-oncogene receptor tyrosine kinase	PBT; SCFR; C-Kit; CD117	Mutations in this gene are associated with gastrointestinal stromal tumors, mast cell disease, acute myelogenous lukemia, and piebaldism.	在这种基因突变与胃肠道间质瘤，肥大细胞病，急性骨髓性lukemia和斑驳病相关联。	精细胞肿瘤中经常会有第17个外显子的突变，而且这种肿瘤中还常常有CD117的过表达。与白血病、黑色素瘤、胃肠道间质肿瘤相关	**KIT**
31	**KRAS**	KRAS proto-oncogene, GTPase	NS; NS3; CFC2; RALD; KRAS1; KRAS2; RASK2; KI-RAS; C-K-RAS; K-RAS2A; K-RAS2B; K-RAS4A; K-RAS4B	The transforming protein that results is implicated in various malignancies, including lung adenocarcinoma, mucinous adenoma, ductal carcinoma of the pancreas and colorectal carcinoma. Alternative splicing leads to variants encoding two isoforms that differ in the C-terminal region.	该成果转化蛋白在各种恶性肿瘤，包括肺腺癌，粘液瘤，胰腺和结直肠癌性导管癌牵连。选择性剪接导致变体编码两种亚型，在C-末端区域不同。	与结直肠癌的关系密切。20%的非小细胞肺癌中有KRAS突变	**KRAS**
32	**MET**	MET proto-oncogene, receptor tyrosine kinase	HGFR; AUTS9; RCCP2; c-Met; DFNB97	Mutations in this gene are associated with papillary renal cell carcinoma, hepatocellular carcinoma, and various head and neck cancers. Amplification and overexpression of this gene are also associated with multiple human cancers.	在这种基因突变与乳头状肾细胞癌，肝细胞癌，和各种头部和颈部癌症相关联。扩增和该基因的过表达也与多种人类癌症相关。	MET基因倍培是透明细胞瘤的一个潜在生物标记物	**MET**
33	**MLH1**	mutL homolog 1	FCC2; COCA2; HNPCC; hMLH1; HNPCC2	This gene was identified as a locus frequently mutated in hereditary nonpolyposis colon cancer (HNPCC).	该基因被鉴定为在遗传性非息肉结肠直肠癌（HNPCC）频繁突变的轨迹。	MLH1基因的突变与遗传性非息肉结直肠癌有密切关系。	**MLH1**

34	**MPL**	MPL proto-oncogene, thrombopoietin receptor	MPLV; TPOR; C-MPL; CD110; THCYT2	Upon binding of thrombopoietin CD110 is dimerized and the JAK family of non-receptor tyrosine kinases, as well as the STAT family, the MAPK family, the adaptor protein Shc and the receptors themselves become tyrosine phosphorylated. In 1990 an oncogene, v-mpl, was identified from the murine myeloproliferative leukemia virus that was capable of immortalizing bone marrow hematopoietic cells from different lineages.	在血小板的结合CD110二聚和JAK家族的非受体酪氨酸激酶，以及STAT家族，MAPK家族，衔接蛋白的Shc和受体本身成为酪氨酸磷酸化。	MPL与骨髓增生白血病有关系。	**MPL**
35	**NOTCH1**	notch 1	hN1; AOS5; TAN1; AOVD1	Mutations in this gene are associated with aortic valve disease, Adams-Oliver syndrome, T-cell acute lymphoblastic leukemia, chronic lymphocytic leukemia, and head and neck squamous cell carcinoma.	在这种基因突变与主动脉瓣疾病，亚当斯奥利弗综合征，T细胞急性淋巴细胞性白血病，慢性淋巴细胞性白血病，以及头颈部鳞状细胞癌有关。	Notch1与白血病相关	**NOTCH1**
36	**NPM1**	Nucleophosmin	B23; NPM	Mutations in this gene are associated with acute myeloid leukemia.	在这种基因突变与急性骨髓性白血病有关。	在多种肿瘤中都发现NPM1的上调、突变、或者染色体易位。当NPM1高表达时，会抑制P53/ARF通路	**NPM1**
37	**NRAS**	neuroblastoma RAS viral oncogene homolog	NS6; CMNS; NCMS; ALPS4; N-ras; NRAS1	Mutations in this gene have been associated with somatic rectal cancer, follicular thyroid cancer, autoimmune lymphoproliferative syndrome, Noonan syndrome, and juvenile myelomonocytic leukemia.	在这种基因突变与躯体直肠癌，甲状腺滤泡状癌，自身免疫性淋巴增生综合征，努南综合征，和幼年粒-单核细胞白血病相关。	与多种肿瘤相关。	**NRAS**

38	**PDGFRA**	platelet derived growth factor receptor alpha	GAS9; CD140A; PDGFR2; PDGFR-2; RHEPDGFRA	Mutations in this gene have been associated with idiopathic hypereosinophilic syndrome, somatic and familial gastrointestinal stromal tumors, and a variety of other cancers.	在这种基因突变与特发性嗜酸性细胞增多症，躯体和家族性胃肠道基质肿瘤，和各种其它癌症相关联。	与胃肠道间质瘤有关系	**PDGFRA**
39	**PIK3CA**	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha	MCM; CWS5; MCAP; PI3K; CLOVE; MCMTC; PI3K-alpha; p110-alpha	This gene has been found to be oncogenic and has been implicated in cervical cancers.	该基因已被发现是致癌及子宫颈癌有牵连。	在许多肿瘤中，都存在PIK3的突变。这些突变大多数是导致激酶的活性更高。	**PIK3CA**
40	**PTEN**	phosphatase and tensin homolog	BZS; DEC; CWS1; GLM2; MHAM; TEP1; MMAC1; PTEN1; 10q23del	This gene was identified as a tumor suppressor that is mutated in a large number of cancers at high frequency.	该基因被确定为是在以高频率的大量癌症中突变的肿瘤抑制。	在人类肿瘤中，PTEN是最常见的被丢失的基因。在前列腺肿瘤中，70%都有丢失至少一个拷贝。在胶质母细胞瘤、子宫内膜癌、和前列腺癌中经常发现PTEN的失活突变。PTEN的突变也会导致各种癌变倾向。	**PTEN**
41	**PTPN11**	protein tyrosine phosphatase, non-receptor type 11	CFC; NS1; JMML; SHP2; BPTP3; PTP2C; METCDS; PTP-1D; SH-PTP2; SH-PTP3	Mutations in this gene are a cause of Noonan syndrome as well as acute myeloid leukemia.	在这个基因的突变是Noonan综合征的原因以及急性髓细胞性白血病。	带有PTPN11突变的患者，很容易得少年单核细胞白血病。在神经母细胞瘤，黑色素瘤，急性髓细胞性白血病，乳腺癌，肺癌，结肠直肠癌中有发现PTPN11的活化突变。有报道：PTPN11既有促癌的作用，也有抑癌的作用	**PTPN11**
42	**RB1**	RB transcriptional corepressor 1	RB; pRb; OSRC; pp110; p105-Rb; PPP1R130	Defects in this gene are a cause of childhood cancer retinoblastoma (RB), bladder cancer, and osteogenic sarcoma	在该基因缺陷的儿童癌症视网膜母细胞瘤（RB），膀胱癌和骨肉瘤的原因	如果两个RB1等位基因都突变了，这人就会视网膜母细胞瘤，并因此瞎掉	**RB1**
43	**RET**	ret proto-oncogene	PTC; MTC1; HSCR1; MEN2A; MEN2B; RET51; CDHF12; CDHR16; RET-ELE1	Mutations in this gene are associated with the disorders multiple endocrine neoplasia, type IIA, multiple endocrine neoplasia, type IIB, Hirschsprung disease, and medullary thyroid carcinoma.	在这个基因的突变与疾病多发性内分泌肿瘤症IIA型，多发性内分泌肿瘤症IIB型，先天性巨结肠病和甲状腺髓样癌相关联。	RET功能增强性的突变，会导致：甲状腺髓样癌，多发性内分泌瘤形成（2A型，和2B型），嗜铬细胞瘤和甲状旁腺增生	**RET**

44	**SMAD4**	SMAD family member 4	JIP; DPC4; MADH4; MYHRS	Mutations or deletions in this gene have been shown to result in pancreatic cancer, juvenile polyposis syndrome, and hereditary hemorrhagic telangiectasia syndrome.	在这个基因的突变或缺失已显示导致胰腺癌，幼年性息肉病综合征和遗传性出血性毛细血管扩张症。	在结直肠癌和胰腺癌中经常发现有SMAD4的突变。它也在常染色体显性遗传病幼年性息肉综合症中被发现有突变，这些息肉很可以发展成结肠癌。	**SMAD4**
45	**SMARCB1**	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily b, member 1	RDT; CSS3; INI1; SNF5; Snr1; BAF47; MRD15; RTPS1; Sfh1p; hSNFS; SNF5L1; SWNTS1; PPP1R144	mutations in it have been associated with malignant rhabdoid tumors.	在它的突变已经与恶性横纹肌样瘤有关。	是一个肿瘤抑制基因，与恶性横纹肌样瘤有关系。	**SMARCB1**
46	**SMO**	smoothened, frizzled class receptor	Gx; CRJS; SMOH; FZD11	The protein encoded by this gene is a G protein-coupled receptor that interacts with the patched protein, a receptor for hedgehog proteins. The encoded protein tranduces signals to other proteins after activation by a hedgehog protein/patched protein complex.	由该基因编码的蛋白质是G蛋白偶合受体与该修补的蛋白质，对刺猬蛋白的受体相互作用。所编码的蛋白质通过刺猬蛋白/修补蛋白质复合tranduces信号以活化后的其它蛋白质。	SMO是一个原癌基因，如果发生活化突变，会导致hedgehog pathway信号通路的活化，并致癌。 肺癌 结直肠癌 胰腺癌	**SMO**
47	**SRC**	SRC proto-oncogene, non-receptor tyrosine kinase	ASV; SRC1; THC6; c-SRC; p60-Src	Mutations in this gene could be involved in the malignant progression of colon cancer.	在这个基因的突变可能是参与结肠癌的恶性进展。	50%的结肠癌、肝癌、肺癌、乳腺癌和胰腺癌与Src通路的激活有关	**SRC**

48	**STK11**	serine/threonine kinase 11	PJS; LKB1; hLKB1	This gene, which encodes a member of the serine/threonine kinase family, regulates cell polarity and functions as a tumor suppressor. Mutations in this gene have been associated with Peutz-Jeghers syndrome, an autosomal dominant disorder characterized by the growth of polyps in the gastrointestinal tract, pigmented macules on the skin and mouth, and other neoplasms.	这个基因，其编码的丝氨酸/苏氨酸激酶家族的一个成员，调节细胞极性和用作肿瘤抑制基因。在这种基因突变与黑斑息肉综合征，常染色体显性遗传疾病在胃肠道特征息肉的生长有关，对皮肤和嘴和其他肿瘤色素斑。	最近的研究发现在宫颈、乳腺、肠、睾丸、胰腺和皮肤癌中大量存在STK11的体细胞突变	**STK11**
49	**TP53**	tumor protein p53	P53; BCC7; LFS1; TRP53	Mutations in this gene are associated with a variety of human cancers, including hereditary cancers such as Li-Fraumeni syndrome.	在这种基因突变与多种人类癌症，包括遗传性癌症如李弗劳明综合征有关。	70%以上的肿瘤带有TP53的突变。TP53是最著名的抑癌基因。	**TP53**
50	**VHL**	von Hippel-Lindau tumor suppressor	RCA1; VHL1; pVHL; HRCA1	Von Hippel-Lindau syndrome (VHL) is a dominantly inherited familial cancer syndrome predisposing to a variety of malignant and benign tumors. A germline mutation of this gene is the basis of familial inheritance of VHL syndrome.	希佩尔-林道综合征（VHL）是一种显性遗传的家族性癌症综合征的诱发各种恶性肿瘤和良性肿瘤。这种基因的胚系突变是VHL综合征的家族继承的基础。	VHL突变是一种显性遗传突变，会得Von Hippel–Lindau综合症，会诱发眼，脑、脊髓、肾脏、胰脏、和肾上腺多种的的恶性和良性肿瘤。当第2个拷贝再发生突变时，就会生肿瘤	**VHL**