

Colorectal Cancer Pathway

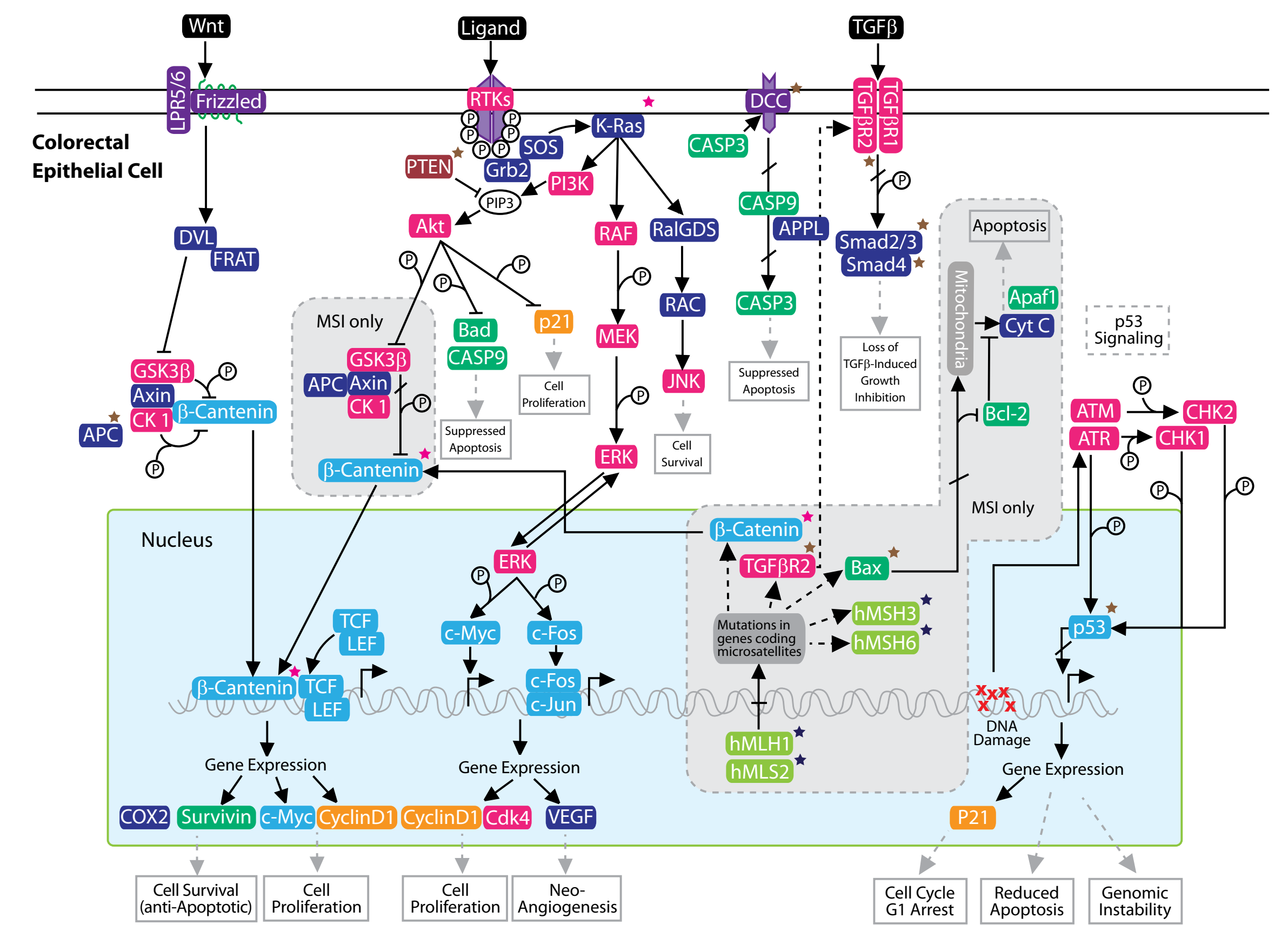
Colorectal cancer (CRC) is one of the leading causes of cancer lethality. In the United States, 160,000 new cases of CRC are diagnosed each year, and 57,000 patients die of this disease. The molecular origins of CRC are relatively well-characterized and strongly related to accumulation of genetic mutations. In general, the genetic alterations in CRC progression are determined by one of two separate and distinct underlying pathways of genomic instability: microsatellite instability (MSI) or chromosome instability (CIN).

CIN Pathway: CIN occurs in most colon cancers and leads to a distinct pattern of gene alterations that contribute to tumor formation. Genes involved in the CIN pathway are those coding for APC, K-Ras, Smad4 and p53.

MSI Pathway: MSI occurs in a smaller number of colon cancers than CIN. It results from defects in the DNA mismatch repair (MMR) system or hypermethylation of the MLH1 promoter. Genes that encode microsatellite repeats, such as β -Catenin, TGF β R2 and Bax, are often found with mutations due to MMR defects.

The CIN and MIS mutations mainly alter the Wnt, EGFR, TGF β R and DCC signaling routes to facilitate proliferation of colorectal carcinoma.

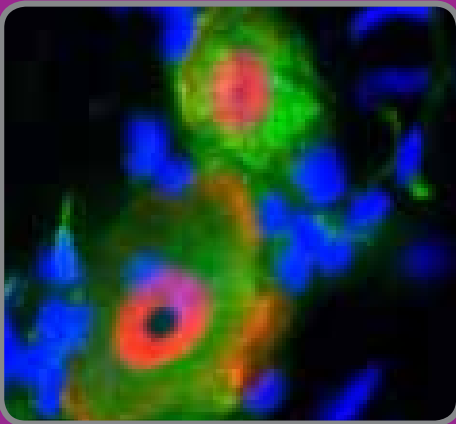
Normal Epithelium → Dysplastic ACF → Early Adenoma → Intermediate Adenoma → Late Adenoma → Carcinoma



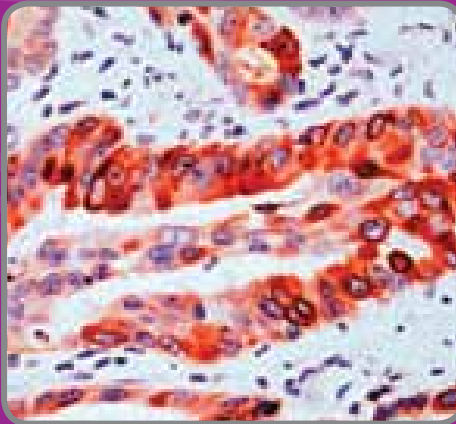
Gene mutations found in colorectal cancer:

★ Oncogenes ★ Tumor Suppressor Genes ★ Genes Involved in Mismatch Repair Pathway

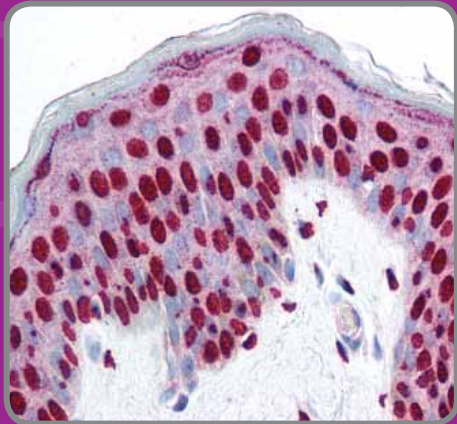
■ Transcription Factors ■ Cell Cycle ■ DNA Repair ■ Apoptosis ■ Membrane Receptors ■ Kinases ■ Phosphatases ■ Cellular Proteins



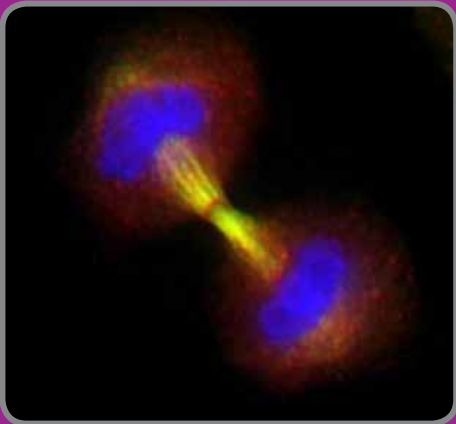
NB110-75039 • c-Fos



NB100-689 • COX2



NBP1-02430 • Smad3



NB500-201 • Survivin

Antibodies for Colorectal Cancer Research

Catalog #	Product	Host	Clonality	Applications	Species
NB600-590	AKT1 [Ser473] Antibody	Rabbit	Polyclonal	ELISA, ICC, IF, IHC-P, WB	Hu
NB110-55464	APC (EP701Y) Antibody	Rabbit	Monoclonal	ICC, IHC-P, IP, WB	Hu, Rt
H00026060-B01	APPL Antibody	Mouse	Polyclonal	ELISA, WB	Hu
NB110-57447	B Raf (EP152Y) Antibody	Rabbit	Monoclonal	FACS, IHC-P, IP, WB	Hu, Mu, Rt
NB100-92480	Bad [Ser136] Antibody	Rabbit	Polyclonal	ELISA, IHC-P, WB	Hu, Mu, Rt
NB120-7977	Bax Antibody	Rabbit	Polyclonal	IHC-P, IP, WB	Hu, Mu, Rt
NB110-55551	Bcl2 (E17) Antibody	Rabbit	Monoclonal	FACS, ICC, IHC-P, IP, WB	Hu, Mu
NB300-272	beta Catenin [Ser33/Ser37] Antibody	Rabbit	Polyclonal	WB	Hu, Rt
NB500-210	Caspase 3 (CPP32 4-1-18) Antibody	Mouse	Monoclonal	WB	Hu
NB500-209	Caspase 9 (LAP6 96-2-22) Antibody	Mouse	Monoclonal	WB	Hu
NB110-75039	c-Fos Antibody	Rabbit	Polyclonal	IF, IHC, WB	Mu, Rt
NB100-92500	Chk1 [Ser345] Antibody	Rabbit	Polyclonal	ELISA, IHC-P	Hu, Mu, Rt
NBP1-19285	c-Jun Antibody	Rabbit	Polyclonal	IF, IHC, WB	Bv, Co, Ch, Dr, Gp, Hu, Mk, Mu, Po, Rb, Rt, Sh, Xp
NB600-302	c-Myc (9E10) Antibody	Mouse	Monoclonal	ELISA, FACS, ICC, IF, IHC-Fr, IHC-P, IP, WB	Dr, Hu, Mu
NB100-689	COX2 Antibody	Rabbit	Polyclonal	IHC, IP, WB	Hu, Mu, Rt
NB110-56901	Cyclin D1 (EP272Y) Antibody	Rabbit	Monoclonal	ICC, IHC, IP, WB	Hu, Rt
NB100-56503	Cytochrome C (7H8.2C12) Antibody	Mouse	Monoclonal	ICC, IF, WB	Dr, Eq, Hu, Mu, Rt
NB600-994	DCC (AF5) Antibody	Mouse	Monoclonal	IF, IP, WB	Hu
NB110-56941	EGFR (E114) Antibody	Rabbit	Monoclonal	ICC, IHC, IP, WB	Hu, Mu, Rt
NB110-56969	ERK1/2 (E337) [Thr202/Tyr204 + Thr185/Tyr187] Antibody	Rabbit	Monoclonal	ICC, IHC, WB	Hu
NBP1-42717	Frizzled-4 (26F8.B9.C7) Antibody	Mouse	Monoclonal	ELISA, WB	Bv, Ch, Hu, Mu, Rt
NB100-81946	GSK3 beta [Tyr216] Antibody	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Rt
NB100-92555	IGF1 Receptor [Tyr1161] Antibody	Rabbit	Polyclonal	ELISA, IF, IHC-P, WB	Hu, Mu, Rt
NB100-1925	JNK1 Antibody	Rabbit	Polyclonal	IP, WB	Ce
NB100-649	LRP5/6 (1A12) Antibody	Mouse	Monoclonal	WB	Hu, Mu
NB100-197	MLH1 Antibody	Rabbit	Polyclonal	IHC, IP, WB	Hu
NB100-620	MSH2 Antibody	Rabbit	Polyclonal	IP, WB	Hu
NB100-1419	MSH3 Antibody	Goat	Polyclonal	PEP-ELISA, WB	Hu
NB100-329	MSH6 Antibody	Rabbit	Polyclonal	IP, WB	Hu
NB200-103	p53 (Pab 240) Antibody	Mouse	Monoclonal	ELISA, FACS, IHC-P, IP, WB	Hu, Mu, Rt
NBP1-19423	PDGF Receptor alpha Antibody	Rabbit	Polyclonal	IF, IHC-P, WB	Hu, Mu, Rt
NB110-57343	PDGF Receptor beta (Y92) Antibody	Rabbit	Monoclonal	ICC, IHC, IP, WB	Hu, Mu
NB300-305	Raf1 [Ser301] Antibody	Rabbit	Polyclonal	WB	Rt
H00003845-M02	Ras (4F3) Antibody	Mouse	Monoclonal	ELISA, WB	Hu
NB110-57463	RhoA (EP487Y) Antibody	Rabbit	Monoclonal	ICC, IHC, WB	Hu, Mu, Rt
NBP1-04982	Smad2 [Thr220] Antibody	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Rt
NBP1-02430	Smad3 [Ser423/425] Antibody	Rabbit	Polyclonal	ELISA, IF, IHC-P, WB	Bv, Ch, Hu, Mu, Po, Rt, Xp, Ze
NB100-92374	Smad4 Antibody	Rabbit	Polyclonal	ELISA, WB	Hu, Mu, Rt
NB500-201	Survivin Antibody	Rabbit	Polyclonal	ChIP, ICC, IF, IHC-P, IP, WB	Ca, Fe, Hu, Mu, Rt
NB100-91995	TGF beta 1 [Tyr369] Antibody	Rabbit	Polyclonal	ELISA, IF, IHC-P, WB	Hu, Mu, Rt
NB110-85463	TGF beta Receptor I (MM0016-7B09) Antibody	Rat	Monoclonal	IHC-P, WB	Hu
H00007048-A01	TGF beta Receptor II Antibody	Mouse	Polyclonal	ELISA, WB	Hu
NB110-57586	TMP21 Antibody	Rabbit	Polyclonal	IHC-P, WB	Bv, Ch, Hu, Mk, Mu, Rb, Rt