

Colorectal Cancer Pathway

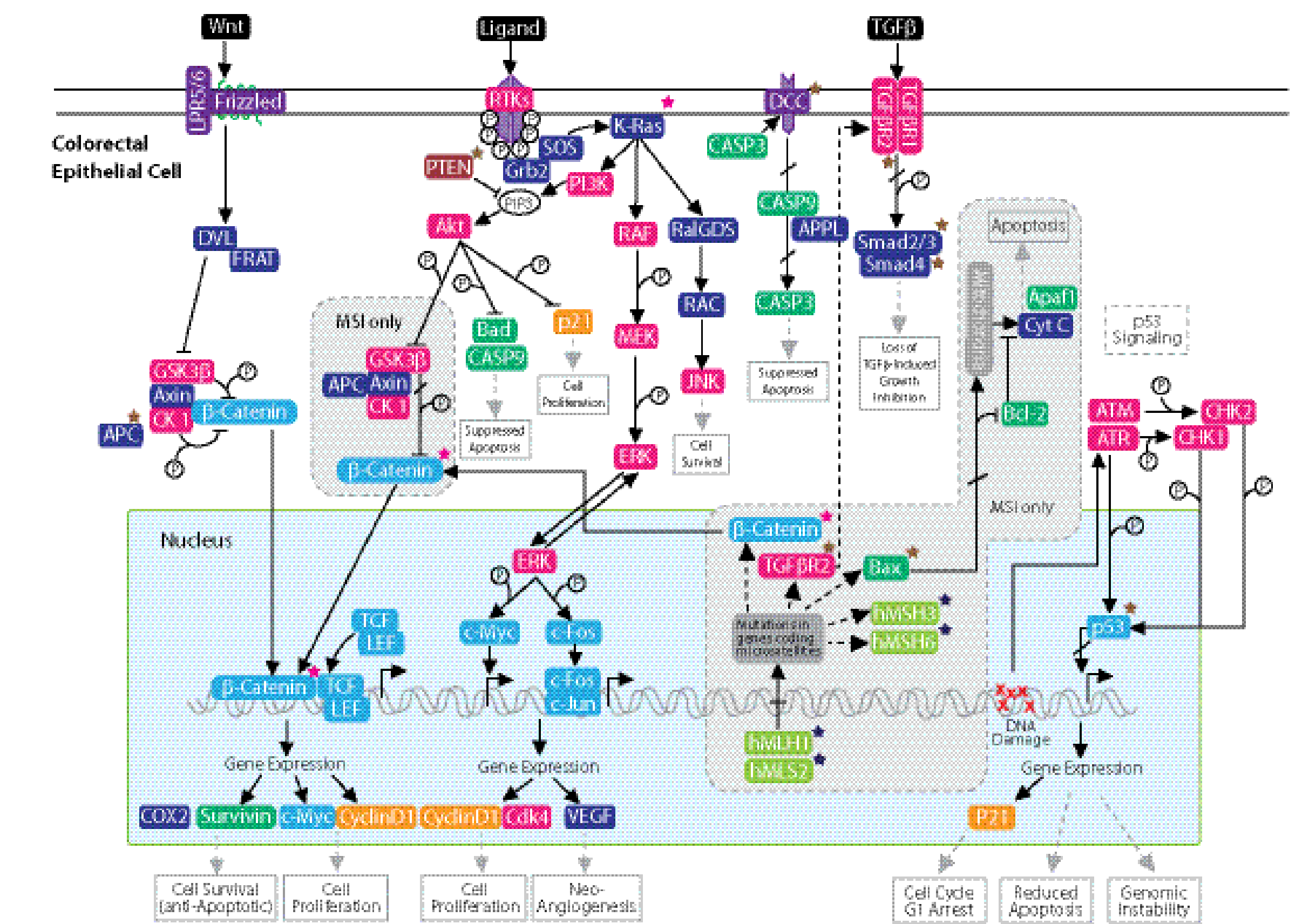
Colorectal cancer (CRC) is one of the leading causes of cancer lethality. In the United States, 160,000 new cases of CRC are diagnosed each year, and 57,000 patients die of this disease. The molecular origins of CRC are relatively well-characterized and strongly related to accumulation of genetic mutations. 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, TGFBR2 and Bax, are often found with mutations due to MMR defects.

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

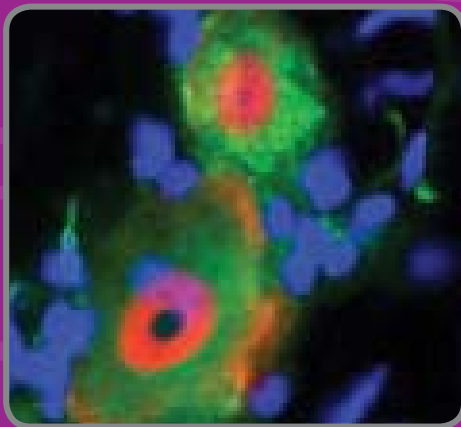
Normal Epithelium → Dysplastic ACF → Early Adenoma → Intermediate Adenoma → Late Adenoma → Carcinoma



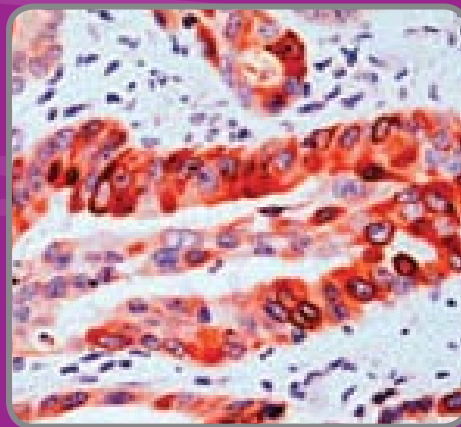
Gene mutations found in colorectal cancer:

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

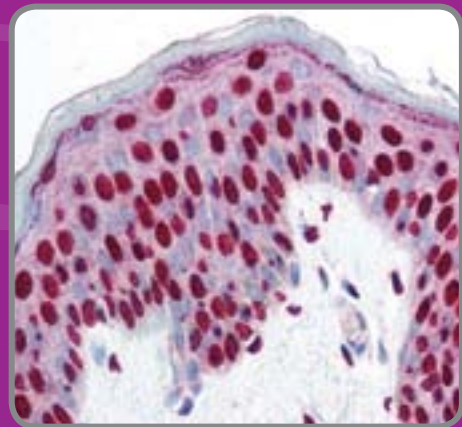
■ Transcription Factors ■ Cell Cycle ■ DNA Repair ■ Apoptosis ■ Membrane Receptors ■ Kinases ■ Phosphatases ■ Cellular Proteins



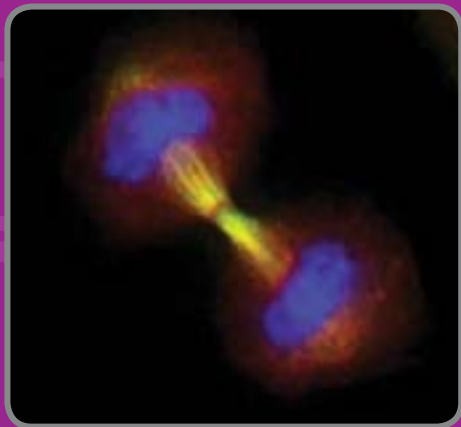
NB110-75039 • c-Fos



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
NBP1-90123	APPL Antibody	Rabbit	Polyclonal	IHC-P, 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
NBP1-54467	beta Catenin (12F7) Antibody	Mouse	Monoclonal	ICC, IF, IHC-P, IP, WB	Cu, Hu, Mk, Mu, Rt
NB500-210	Caspase 3 (CPP32 4-1-18) Antibody	Mouse	Monoclonal	WB	Hu, Rt
NB500-209	Caspase 9 (LAP6 96-2-22) Antibody	Mouse	Monoclonal	WB	Hu
NB110-75039	c-Fos Antibody	Rabbit	Polyclonal	IF, IHC-Fr, IHC-P, WB	Mu, Rt
NBP1-77753	Chk1 Antibody	Rabbit	Polyclonal	ELISA, IP, WB	Ye
NBP1-19285	c-Jun Antibody	Rabbit	Polyclonal	IF, IHC-P, WB	Bv, Ca, Ch, Dr, Gp, Hu, Mk, Mu, Po, Rb, Rt, Sh, Xp
NB200-108	c-Myc (9E11) Antibody	Mouse	Monoclonal	ELISA, ChIP, FACS, IHC-Fr, IHC-P, IP, WB	Ch, Hu, Ba, Mu
NB100-689	COX2 Antibody	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Rt
NB110-56901	Cyclin D1 (EP272Y) Antibody	Rabbit	Monoclonal	ICC, IHC-P, IP, WB	Hu, Mu, Rt
NB100-64379	Cytochrome C Antibody	Rabbit	Polyclonal	FUNC	Hu
NBP1-49655	DCC Antibody	Rabbit	Polyclonal	ELISA, WB	Hu, Mu, Rt
NB110-56941	EGFR (E114) Antibody	Rabbit	Monoclonal	ICC, IHC, IP, WB	Hu, Mu, Rt
NB110-96887	ERK1/2 Antibody	Rabbit	Polyclonal	FACS, IF, IHC-Fr, IHC-P, WB	Bv, Dr, Ch, Hu, Mu, Rt, Sh, Xp
NB100-93397	Frizzled-4 Antibody	Goat	Polyclonal	PEP-ELISA	Hu, Rt
NB100-91797	GSK3 beta Antibody	Rabbit	Polyclonal	ELISA, IHC-P, WB, IP	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	ELISA, IHC-P, WB	Ce
NB100-649	LRP5/6 (1A12) Antibody	Mouse	Monoclonal	WB	Hu, Mu
NB100-197	MLH1 Antibody	Rabbit	Polyclonal	IHC, IP, WB	Hu
NB100-1767	MSH2 (3A2B8C) Antibody	Mouse	Monoclonal	IHC-P, IP, WB	Hu
NBP1-84965	MSH3 Antibody	Rabbit	Polyclonal	IF, IHC-P, WB	Hu
NB100-329	MSH6 Antibody	Rabbit	Polyclonal	IP, WB	Hu
NB500-303	p21 (W4-1) Antibody	Mouse	Monoclonal	ELISA, ICC, IHC-P, WB	Hu, Mk
NB200-104	p53 (PAb1801) Antibody	Mouse	Monoclonal	ELISA, FACS, IHC, IP, RI, WB	Hu
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-P, IP, WB	Hu, Mu, Rt
NBP1-61406	Raf1 Antibody	Rabbit	Polyclonal	ELISA, IF, IHC, WB	Hu, Mu, Rt
NB100-91273	RhoA Antibody	Rabbit	Polyclonal	IHC-Fr, IHC-P, WB	Am, Ch, Bv, Ca, Hu, Mu, Rt, Ze
NB110-57579	Smad2 (EPY84Y) Antibody	Rabbit	Monoclonal	FACS, IHC-P, IP, WB	Hu, Rt
NBP1-02430	Smad3 [Ser423/425] Antibody	Rabbit	Polyclonal	ELISA, IF, IHC-P, WB	Bv, Ch, Hu, Mu, Po, Rt, Xp, Ze
NB500-201	Survivin Antibody	Rabbit	Polyclonal	ChIP, ICC, IF, IHC-P, IP, WB	Ca, Fe, Hu, Mu, Rt
NBP1-78398	TGF beta 1 [Tyr369] Antibody	Rabbit	Polyclonal	ICC, IF	Hu
NBP1-61731	TGF beta Receptor 1 Antibody	Rat	Polyclonal	ELISA, IF, WB	Hu, Mu, Rt

Visit www.novusbio.com for a full list of Colorectal Cancer Pathway Antibodies.