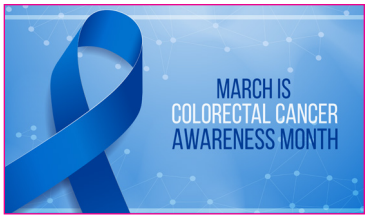
ZETA Corporation

Precision IVD Antibodies for Anatomic Pathology



PRODUCT FOCUS -- Tools used in the diagnosis of Colorectal Cancer

Colon Cancer Awareness Month, March 2025 -In the United States, colorectal cancer is the third-leading cause of cancer-related deaths in men and the fourth leading cause in women, but it's the second most common cause of cancer deaths when numbers for men and women are combined. It is estimated that there will be 154,000 colorectal cancers in the United States in 2025. From 2012 to 2021, incidence rates dropped by about 1% each year. But this downward trend is mostly in older adults. In people younger than 50 years of age, rates have increased by 2.4% per year from 2012 to 2021. (*ACS*)

Lynch Syndrome - also known as hereditary nonpolyposis colorectal cancer (HNPCC) - is one of the most common causes of hereditary colorectal cancer, with about 3 to 5 percent of colon cancers and 2 to 3 percent of uterine cancers attributed to it. It's caused by inherited mutations in genes responsible for DNA mismatch repair, which are essential for fixing errors in DNA replication. The genes involved include **MLH1, MSH2, MSH6, PMS2, and EPCAM**. Diagnostic (IHC) antibodies to these biomarkers are described below, along with a comprehensive panel of IVD antbodies for other forms of colorectal cancer.

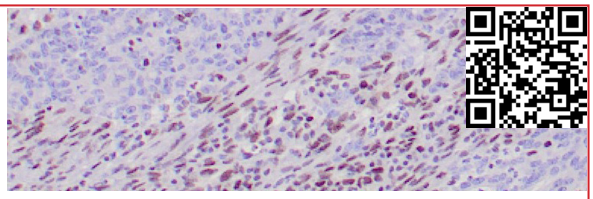
Zeta Corporation offers recombinant RAbMono™ (Rabbit Monoclonal) and MonoMAb™ (Mouse Monoclonal) recombinant IVD antibodies researched and developed for the anatomic pathology market for Immunohistochemistry. Zeta is incorporating highly sensitive technology to develop many of these primary antibodies that are target-validated and characterized for IHC on FFPE tissue sections. Zeta provides 400+ IVD antibodies for cancer screening and diagnosis.

Lynch Syndrome Markers

MLH-1 (recombinant; clone ZR347) **IVD**

Recognizes MLH-1, a gene where defects cause hereditary non-polyposis colorectal cancer type 2 (HNPCC2). MLH-1 is a protein of 83kDa that heterodimerizes with PMS2 to form MutL alpha, a component of the post-replicative DNA mismatch repair system (MMR). DNA repair is initiated by MutS alpha (MSH2-MSH6) or MutS beta (MSH2-MSH6) binding to a dsDNA mismatch, then MutL alpha is recruited to the heteroduplex. Assembly of the MutL-MutS-heteroduplex ternary complex in... (more)

Species: Rabbit Monoclonal **Cat#:** Z2656

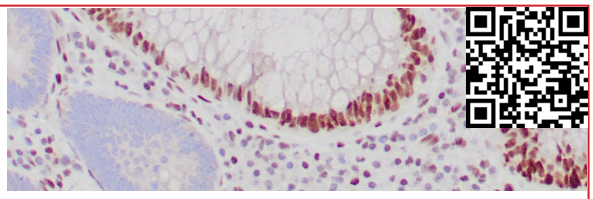


IHC: Human colon adenocarcinoma with Lynch syndrome stained with ZR347

MSH-2 (recombinant; clone ZR260) **IVD**

Mutations in DNA mismatch repair genes are associated with hereditary nonpolyposis colorectal cancer (HNPCC). Initially, inherited mutations in the MSH2 and MLH1 homologs of the bacterial DNA mismatch repair genes MutS and MutL were found at high frequency in HNPCC and were shown to be associated with microsatellite instability. The demonstration that 10 to 45% of pancreatic, gastric, breast, ovarian and small cell lung cancers also display microsatellite instability has been... (more)

Species: Rabbit Monoclonal **Cat#:** Z2574

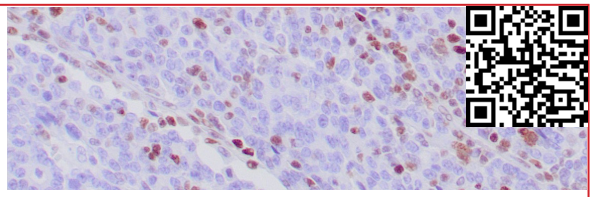


IHC: Human colon adenocarcinoma stained with ZR260

MSH-6 (recombinant; clone ZR342) **IVD**

Recognizes MSH-6, a mismatch repair protein that has been implicated in a higher frequency in hereditary nonpolyposis colorectal cancer (HNPCC). Additionally, mutations in MSH-6 are associated with increased risk of colorectal cancer, Lynch syndrome and endometrial cancer, leading to microsatellite instability.Mismatch repair (MMR) proteins are essential for repairing DNA errors that are generated during DNA replication. There are at least seven MMR proteins ... (more)

Species: Rabbit Monoclonal **Cat#:** Z2540

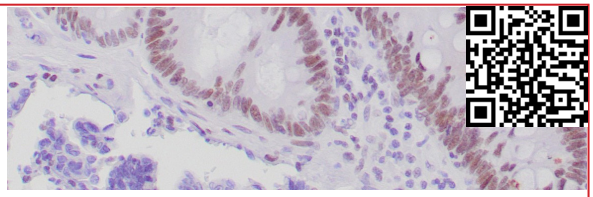


IHC: Human colon adenocarcinoma with Lynch syndrome stained with ZR342

PMS2 (recombinant; clone ZR317) **IVD**

Defects in PMS2 are the cause of hereditary non-polyposis colorectal cancer type 4 (HNPCC4). Mutations in more than one gene locus can be involved alone or in combination in the production of the HNPCC phenotype (also called Lynch syndrome). Most families with clinically recognized HNPCC have mutations in either MLH1 or MSH2 genes. HNPCC is an autosomal, dominantly inherited disease associated with a marked increase in cancer susceptibility.... (more)

Species: Rabbit Monoclonal **Cat#:** Z2621

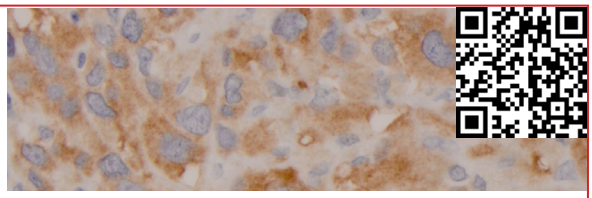


IHC: Human colon adenocarcinoma (Lynch Syndrome) stained with ZR317

BRAF (V600E) (recombinant; clone ZR6) IVD (Non-EU)/ RUO (EU)

The *BRAF* gene encodes a protein that is part of the RAS-RAF-MEK-ERK signaling pathway, which regulates cell division and proliferation. The V600E mutation is commonly associated with various cancers, including melanoma, colorectal cancer, and certain types of thyroid cancer, lung cancer, and Hairy cell leukemia. The BRAF (V600E) antibody specifically binds to the mutated BRAF protein, allowing pathologists to detect the mutation via immunocytochemistry in cancer tissue... (more)

Species: Rabbit Monoclonal **Cat#:** Z2811



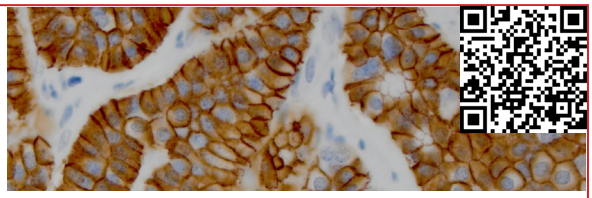
IHC: Human melanoma stained with ZR6

Colon-specific Markers

Cadherin 17 (recombinant; clone ZR418) IVD (Non-EU)/ RUO (EU)

Recognizes 120kDa, Cadherin 17 (also known as LI Cadherin) a member of a family of calcium-dependent adhesion molecules mediating cell-cell binding, critical to maintaining tissue structure and morphogenesis. LI-cadherin (for liver-intestine-cadherin) expression is restricted to liver and intestine tissues and is specifically localized to the basolateral domain of hepatocytes and enterocytes. Cadherin 17 is a novel diagnostic marker for adenocarcinomas of the digestive system.... (more)

Species: Rabbit Monoclonal **Cat#:** Z2774

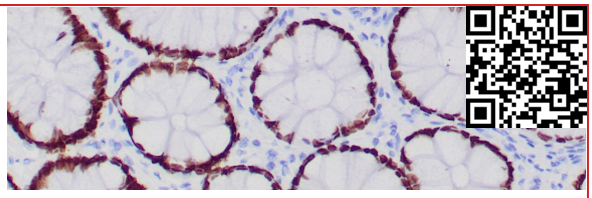


IHC: Human colon carcinoma stained with ZR418

SATB2 (recombinant; clone ZR167) IVD

SATB2 is a DNA binding protein specifically binds nuclear matrix attachment regions. It is involved in transcription regulation and chromatin remodeling. SATB2 expression in colorectal carcinomas (CRC) is correlated with a good prognosis. In laryngeal squamous cell carcinoma, it functions as a tumor suppressor, wherein loss of expression is positively correlated with high tumor grade and recurrence. SATB2, in combination with CK20, could identify almost all CRC's. Upper GI carcinomas... (more)

Species: Rabbit Monoclonal **Cat#:** Z2479



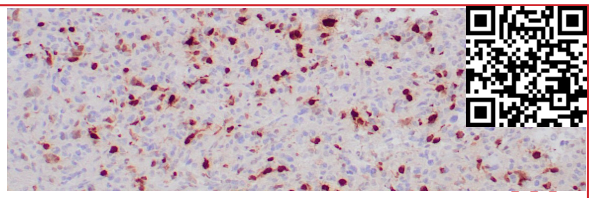
IHC: Human colon stained with ZR167

New Marker of Interest

MGMT (recombinant; clone ZR434) IVD (Non-EU)/ RUO (EU)

Recognises MGMT (O-6-methylguanine-DNA methyl transferase), an important suppressor of mutation and carcinogenesis. Cancer chemotherapeutic alkylating agents (such as BCNU) act by inducing formation of lethal cross-links at the O6-alkylguanine position in DNA. MGMT transfers alkyl adducts from the O6-position of guanine in DNA (prior to cross-link formation) to a cysteine residue in its own sequence, thereby restoring DNA to its intact state. to the level of DNA-damage.... (more)

Species: Rabbit Monoclonal **Cat#:** Z2790

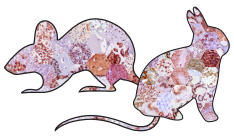


IHC: Human colon carcinoma stained with ZR434

Related ABs	Clone	Species	Cat. #
Beta-catenin	ZM13	Mouse	Z2355
CA19-9	121SLE	Mouse	Z2072
CD103	ZR404	Rabbit	Z2760
CD31	JC70A	Mouse	Z2136
CD31	ZR274	Rabbit	Z2725
CD68	ZR302	Rabbit	Z2732
CDX2	ZR215	Rabbit	Z2494
CEACAM5	ZR370	Rabbit	Z2661
CEA-M	CEA31	Mouse	Z2100
c-myc	ZR355	Rabbit	Z2734
Cyclin-E	ZM121	Mouse	Z2431
Cytokeratin 18	DC-10	Mouse	Z2044
Cytokeratin 18	ZM205	Mouse	Z2541
Cytokeratin 19	BA17	Mouse	Z2134
Cytokeratin 19	ZR143	Rabbit	Z2688

Related ABs	Clone	Species	Cat. #
Cytokeratin 20	Ks20.8	Mouse	Z2065
Cytokeratin 20	ZM42	Mouse	Z2349
Cytokeratin 20	ZR429	Rabbit	Z2785
Cytokeratin 7	OV-TL-12/30	Mouse	Z2067
Cytokeratin 7	ZR428	Rabbit	Z2784
EMA	ZR133	Rabbit	Z2684
EP-CAM	Ber-EP4	Mouse	Z2314
EP-CAM / ESA	MOC-31	Mouse	Z2162
EP-CAM / ESA	ZR307	Rabbit	Z2557
Galectin-3	ZM182	Mouse	Z2487
Galectin-3	ZR430	Rabbit	Z2786
GLUT-1	ZM137	Mouse	Z2448
GLUT-1	ZR308	Rabbit	Z2585
MUC-2	Ccp58	Mouse	Z2151
MUC-2	ZR175	Rabbit	Z2702

Related ABs	Clone	Species	Cat. #
MUC-5AC	ZR19	Rabbit	Z2703
MUC-5AC	ZM148	Mouse	Z2461
MUC-6	ZM89	Mouse	Z2399
MUC-6	ZR437	Rabbit	Z2793
Myosin, SMHC	SMMS-1	Mouse	Z2229
p21WAF1	ZR288	Rabbit	Z2602
p53	DO-7	Mouse	Z2029
p53	ZR153	Rabbit	Z2466
S-100P	ZR115	Rabbit	Z2419
Smoothelin	ZR169	Rabbit	Z2465
TS	TS106	Mouse	Z2199
TS	ZR245	Rabbit	Z2719
TROP2	ZR388	Rabbit	Z2744
TTF-1	8G7G3/1	Mouse	Z2069
Villin	ZR155	Rabbit	Z2491



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