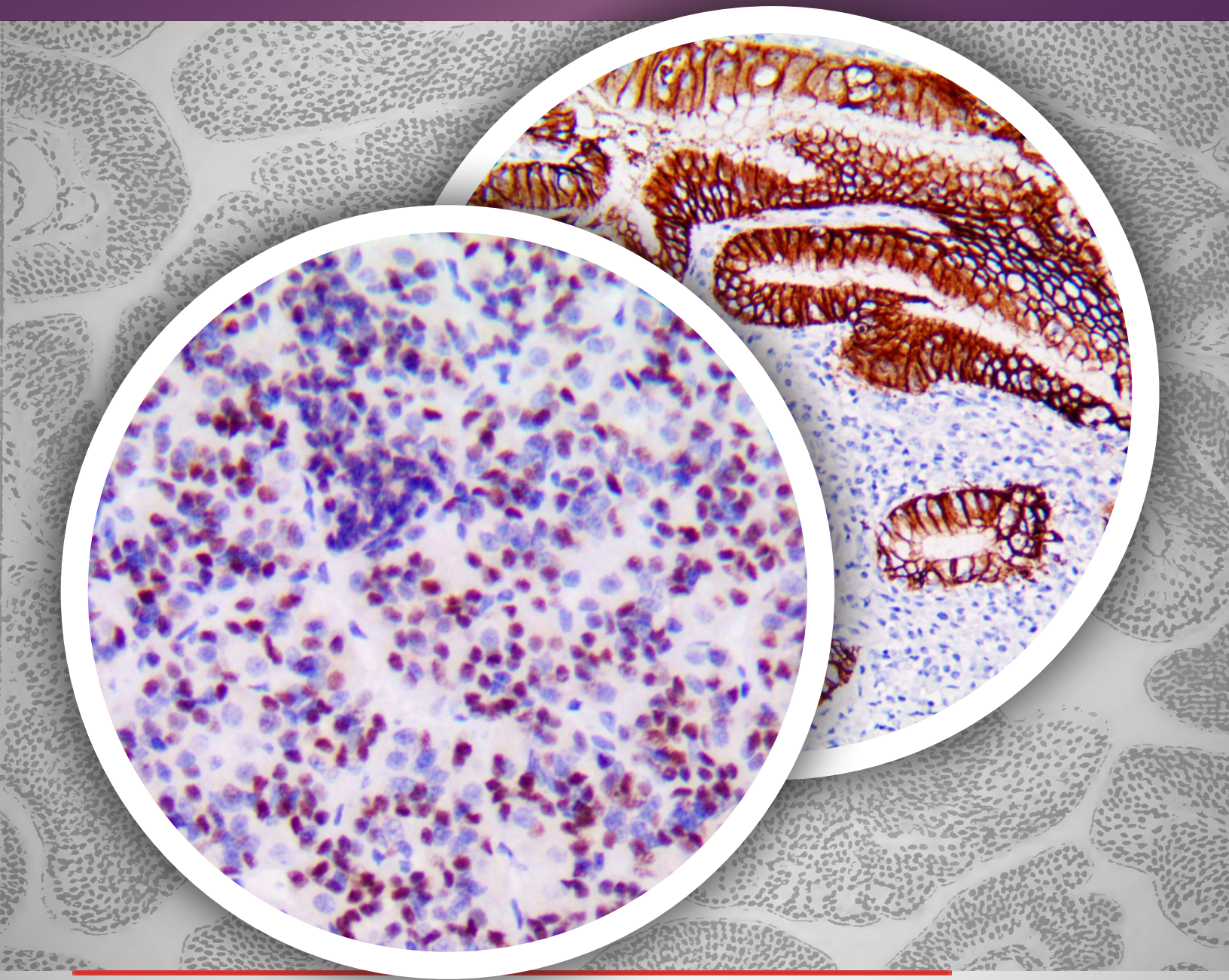
2024 NEW PRODUCT LAUNCH

BIOSB



A selection of new antibodies launching for 2024

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Claudin 18.2 RMab

(RBT-CLDN18.2) ASR*

FFPE esophagogastric junction tissue

About:

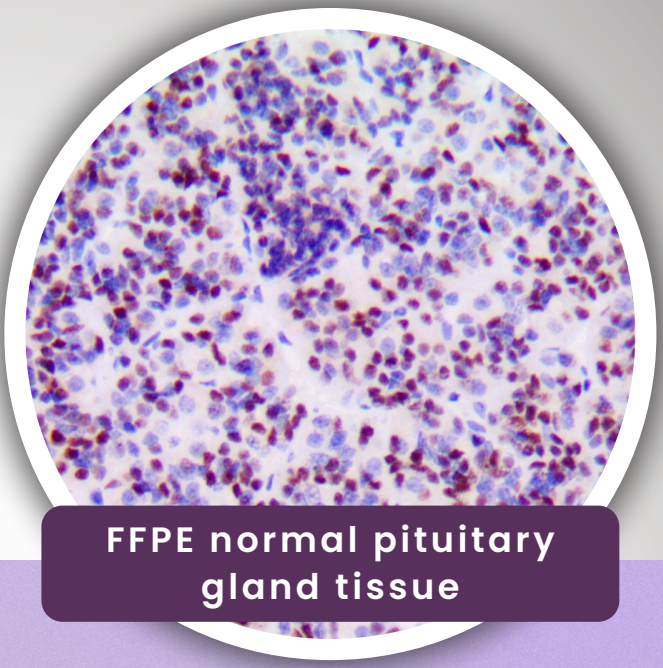
Claudin-18.2 is a tight-junction protein. Its expression of cancer cells was transcriptionally upregulated with the binding of cyclic AMP–responsive element binding protein to the methylated CLDN18.2 promoter region. Claudin 18.2 is involved in tumor development and progression and located in the outer cell membrane. Claudin 18 isoform 2 (CLDN18.2), a member of the claudin family, is an important component of tight junction proteins that regulates tissue permeability, paracellular transport, and signal transduction. CLDN18.2 is predominantly present in stomach mucosa and is retained during malignant transformation. Claudin 18.2 is not expressed in any healthy tissues with the exception of gastric mucosa. This protein acts to maintain epithelial progenitor cell proliferation and organ size.

* Analytical and performance characteristics for ASR products are not established.

BIOSB

PiT-1 MMab

(BSB-182) IVD



FFPE normal pituitary gland tissue

About:

POU1F1 is a tissue specific transcription factor that regulates gene expression, particularly in somatotrophs, lactotrophs, and thyrotrophs, found in the developing anterior pituitary, which are responsible for growth related hormone secretion. The POU class 1 homeobox 1 transcription factor (POU1F1, also known as PiT-1) was originally detected in the pituitary gland and is expressed in the mammary gland; it can regulate cell differentiation and is an activator for pituitary gene transcription during organogenesis. POU1F1 has a POU-domain binding domain and can trans-activate the promoter region of growth hormone (GH), prolactin (PRL), thyroid stimulating hormone chain (TSHB)-encoding genes, and POU1F1 itself in the anterior pituitary. PiT-1 has a high affinity to bind the promoters of genes encoding GH, PRL, and TSH subunit, binding sites being found also at the growth hormone-releasing hormone (GHRHR) gene promoter.

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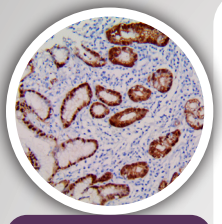
New 2024 Antibodies



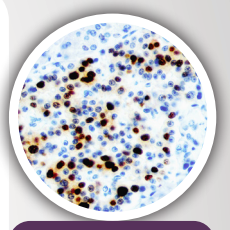
FFPE normal colon tissue

Annexin A10 RPab (Polyclonal) IVD

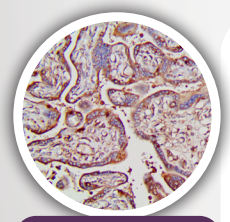
Annexin A10 is expressed in the foveolar cells and glandular cells of the normal antral or body-type gastric mucosa. Expression of Annexin A10 was associated with good prognosis of diffuse-type gastric carcinoma. Annexin A10 can be expressed by cholangiocarcinoma as well as colorectal cancers. In a clinical study, expression of Annexin A10 was associated with good prognosis of diffuse-type gastric carcinoma, but poor prognosis in intestinal-type gastric carcinoma, papillary thyroid cancer, small bowel adenocarcinoma, and serous epithelial ovarian cancer. Annexin A10 can be expressed by cholangiocarcinoma. Depending on the primary tumor location, cholangiocarcinoma can be classified as intrahepatic, perihilar, distal, or gallbladder cholangiocarcinoma.

IVD NKX6.1 RMab (RBT-NKX6.1)

NKX6-1 (NK homeobox 1) is also known as NKX6.1 and NKX6A. NKX6.1 is expressed in the nervous system during development and plays a key role in motor neuron specification. NKX6.1 functions as an epithelial-to-mesenchymal transition suppressor, thereby suppressing the metastatic behavior of cancer cells. It has been found that the loss of NKX6.1 causes rapid-onset diabetes due to defects in insulin biosynthesis and secretion without affecting cell survival. In another study, it was determined that NKX6.1 activates epithelial gene expression and represses mesenchymal gene expression at the transcriptional level by interacting with different cofactors, namely BAF155 and RBBP7. NKX6.1 expression attenuates neuroinflammation and glial scar formation, which correlates with changes of gene expression involved in microglia and reactive astrocytes.



FFPE normal pancreas tissue



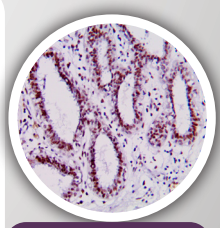
FFPE human infected placenta tissue

Trypanosoma cruzi (T.cruzi) MMab (BSB-183) ASR*

Trypanosoma cruzi (T. cruzi) is the parasite that causes Chagas disease or American Trypanosomiasis, a chronic endemic illness of Central and South America, and a neglected tropical disease. Chagas disease is characterized by an acute phase with low mortality and symptomatology. *T. cruzi* infections can affect any part of the digestive tract, but the most commonly involved are the esophagus and the colon. However, the available data on the presence of parasites in the intestines is very limited, as the demonstration of the presence of *T. cruzi* in the gastrointestinal tract is difficult due to the lack of robust methodologies to detect the rare presence of parasites.

IVD BAP1 RMab (RBT-BAP1)

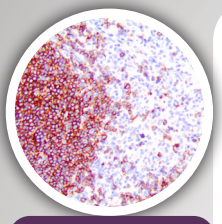
BAP1 or BRCA1 associated protein-1 (ubiquitin carboxy-terminal hydrolase) is a deubiquitinating enzyme that in humans is encoded by the BAP1 gene. In cancer, BAP1 can function both as a tumor suppressor and as a metastasis suppressor. Exome sequencing identified inactivating mutations in BAP1 in 47% of Uveal melanomas, and BAP1 mutations have been found to be strongly associated with metastasis. The atypical melanocytic lesions resemble Spitz nevi and have been characterized as "atypical Spitz tumors" (ASTs), although they have a unique histology and exhibit both BRAF and BAP1 mutations. Sequencing studies have been used to identify germline mutations in BAP1 in families with genetic predispositions to mesothelioma and melanocytic skin tumors. Mutations in the tumor suppressor gene BAP1 occur in approximately 15% of clear cell renal cell carcinoma cases.



FFPE normal breast tissue

* Analytical and performance characteristics for ASR products are not established.

New 2024 Antibodies



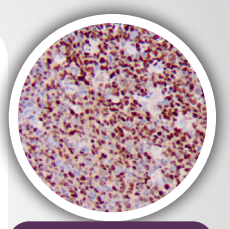
FFPE normal spleen tissue

CD19 RMab (RM332) IVD

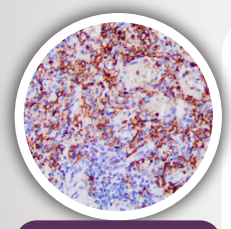
CD19 functions as a coreceptor for the B-cell antigen receptor complex (BCR) on B-lymphocytes. CD19 is a target of chimeric antigen receptor (CAR) T-cells used in the treatment of lymphoblastic leukemia. Mutations in this gene are associated with the disease common variable immunodeficiency 3 (CVID3) which results in a failure of B-cell differentiation and impaired secretion of immunoglobulins. In one study, it was concluded that CAR T cells targeting CD19 can cause complete remission in relapsed B-cell lymphoma, but the long-term durability of these remission is unclear. These results and results from other studies suggest that anti-CD19 CAR T cells will play an increasing role in treatment of follicular lymphoma, mantle cell lymphoma, and Chronic Lymphocytic Leukemia.

IVD MUC4 RMab (RBT-MUC4)

The membrane mucin MUC4 is abundantly expressed in many epithelia, where it is proposed to play a protective role, and is overexpressed in some epithelial tumors. The cell surface membrane-bound mucin protein MUC4 promotes tumorigenicity, aggressive behavior, and poor outcomes in various types of epithelial carcinomas, including pancreatic, breast, colon, ovarian, and prostate cancer. Silencing of MUC4 was shown to decrease pancreatic tumor growth and metastasis. These results are consistent with a previous study showing the ability of MUC4 to promote tumor metastasis.



FFPE normal tonsil tissue



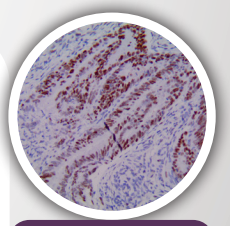
FFPE normal placenta tissue

CD16 RMab (RBT-CD16) IVD

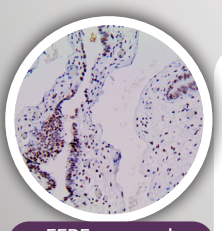
CD16 is a low affinity Fc receptor, found on the surface of natural killer cells, neutrophil polymorphonuclear leukocytes, monocytes and macrophages. In one study, it was found that a significant decrease can be seen in the number of granulocytes expressing CD16 in chronic myelomonocytic leukemia compared to chronic myelogenous leukemia and control bone marrow biopsy, probably related to dysgranulopoiesis. It has also been demonstrated that colorectal carcinoma patients with high CD16+ cell infiltration is associated with improved overall survival after adjusting for known prognostic factors and this association was independent from CD8+ lymphocyte infiltration and presence of metastases.

IVD MSH6 RMab (RBT-MSH6)

MSH6, also known as mutS homolog 6, is a gene commonly associated with Hereditary Non-Polyposis Colorectal Cancer (HNPCC). HNPCC is an autosomal, dominantly inherited disease associated with marked increase in cancer susceptibility. It is characterized by a familial predisposition to early onset Colorectal Carcinoma and extra-colonic cancers of the gastrointestinal, urological and female reproductive tracts. HNPCC is reported to be the most common form of inherited Colorectal Cancer in the western world.



FFPE colon adenocarcinoma tissue



FFPE normal fallopian tube tissue

Histone H3 Phospho RMab (RBT-pHH3) IVD

Phosphohistone-H3 is one of the five main histone proteins involved in the structure of chromatin in eukaryotic cells. Phosphohistone-H3 can serve as a mitotic marker to separate mitotic figures from apoptotic bodies and karyorrhectic debris, which may be a very useful tool in diagnosis of tumor grades, especially in the central nervous system, skin, soft tissue, gynecologic cancer, and gastrointestinal stromal tumor (GIST). Phosphohistone-H3 is a strong biomarker for lymphoma, melanoma, and GIST.

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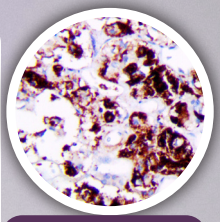
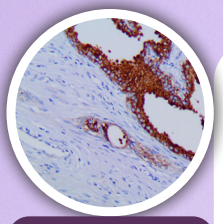
IVD Prolactin RMab (RBT-PRL)

Prolactin is a peptide hormone primarily associated with lactation. It is synthesized and secreted by lactotroph cells in the adenohypophysis (anterior pituitary gland). It is also produced in other tissues including the breast and the decidua. It has been demonstrated that Prolactin (PRL) is an important factor for both the survival and proliferation of early T-cell precursors, such as CD25+CD4-CD8- double negative cells, as well as for the protection of thymocytes from glucocorticoid-induced apoptosis. Pituitary prolactin secretion is regulated by neuroendocrine neurons in the hypothalamus, most importantly by neurosecretory dopamine neurons of the arcuate nucleus, which inhibit prolactin secretion. Prolactin is a useful marker in classification of pituitary tumors and the study of pituitary disease. It reacts with lactotroph cells.



FFPE normal pituitary gland tissue



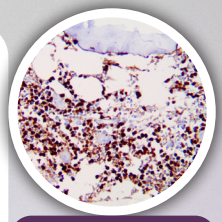
FFPE prostatic gland tissue

PSAP RMab (RBT-PSAP) IVD

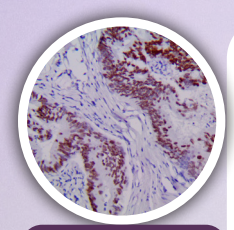
Prostatic specific acid phosphatase (PSAP) is an enzyme produced by the prostate. It may be found in increased amounts in men who have prostate cancer or other diseases. The highest levels of acid phosphatase are found in metastasized prostate cancer. Diseases of the bone, such as Paget's disease or hyperparathyroidism, diseases of blood cells (i.e. sickle-cell disease), Multiple Myeloma or Lysosomal Storage Diseases, (i.e. Gaucher's disease), will show moderately increased levels of PSAP. This marker may be helpful in pinpointing the site of origin in cases of metastatic prostate carcinoma.

IVD S100A8/MRP8 RMab (RBT-MRP8)

S100A8 is a calcium- and zinc-binding protein which plays a prominent role in the regulation of inflammatory processes and immune response. S100A8 is expressed in cells with myeloid origin, including granulocytes, monocytes, and macrophages, and it is observed in blood granulocytes and monocytes. It is also expressed in infiltrate macrophages during inflammatory reactions, but not in normal tissue macrophages. In tumors, positive staining of S100A8 has been observed in various cancers including pancreatic cancer, and it has been linked to inflammation-associated cancers. Altered expression of S100A8 is associated with the disease cystic fibrosis.



FFPE normal bone marrow tissue



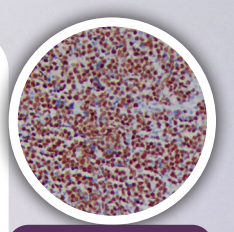
FFPE colon adenocarcinoma tissue

SATB2 RMab (RBT-SATB2) IVD

Special AT-rich sequence-binding protein 2 (SATB2) also known as DNA-binding protein SATB2 is a protein that in humans is encoded by the SATB2 gene. SATB2 has been identified as a tissue-specific protein when screening protein expression patterns in normal human and cancerous tissues, with expression restricted to the lower gastrointestinal tract. SATB2 is a good marker for identifying a carcinoma of colorectal origin when working on a tumor of unknown primary location. Another potential utility of SATB2 is to identify neuroendocrine neoplasms/carcinomas of the colon and rectum because SATB2 is usually negative in other neuroendocrine neoplasms of the GI tract, pancreas, and lung. SATB2 has been also shown to be a sensitive marker of osteoblastic differentiation in benign and malignant mesenchymal tumors.

IVD SOX-11 MMab (BSB-184)

Transcription factor SOX-11 is a member of the group C SOX (SRY-related HMG-box) transcription factor family involved in the regulation of embryonic development and in the determination of the cell fate. SOX-11 is normally expressed in the developing human central nervous system, medulloblastoma, and glioma. Anti-SOX-11 nuclear protein expression is highly associated with both Cyclin D1-positive and negative Mantle Cell Lymphomas (MCL). SOX-11 has also been detected in rare cases of Burkitt lymphoma, lymphoblastic lymphoma, and T cell prolymphocytic leukemia and overexpression can be seen in malignant gliomas.



FFPE mantle cell lymphoma tissue

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