

Targeted Products for Cancer Research

Spring Bioscience was founded in 2001 by a team of scientists and achieved early success with their line of IHC-competent rabbit monoclonal antibodies (SP Clones) for clinical immunohistochemistry. Spring Bioscience takes a targeted and focused approach to building its product portfolio. First, they strategically select biomarkers. Second, they invest heavily in leading immunology technologies including rabbit monoclonal antibody development to deliver the highest quality. Lastly, they complement a strong antibody product portfolio with a broad set of immunohistochemistry (IHC) tools including detection systems, antibody arrays, recombinant proteins and more. In addition to their expertise in IHC many of the antibodies are further characterized by Western Blot, ELISA and other applications, as well as multiple host tissues including human and mouse/rat. Mutation specific antibodies are another specialty of Spring Bioscience. Their mission is to build essential tools for cancer researchers so that tomorrow's patients may benefit from today's innovations.

Adipogen International offers all **Spring Bioscience** Antibodies & Reagents in selected territories. Please contact us for further information.

For Product Inquiries:
info@adipogen.com

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AdipoGen[®]

SP Clones

UNIQUE IHC-Competent Antibodies (SP Clones)

- Clean and intense staining
- Lower pre-treatment requirement
- Robust performance for FFPE tissue
- Improved reproducibility

For Selected Antibodies see pages 2-4

Exclusive Novel BRAF V600E Mutation Specific Antibody for Cancer Detection

BRAF V600E Mouse Monoclonal

SPB-E1929-0	0.1 ml
SPB-E1929-2	0.5 ml
SPB-E1929-4	1.0 ml

CLONE: VE1. **ISOTYPE:** Mouse IgG2a. **IMMUNOGEN:** Synthetic peptide representing the BRAF V600E mutated amino acid sequence from amino acid 596 to 606 (GLATEKSRWSG). **REACTIVITY:** Human. **APPLICATION:** IHC-P, WB. **CELLULAR LOCALIZATION:** Cytoplasm.



Human Colon Carcinoma with V600E mutation stained with anti-BRAF V600E antibody

The BRAF protein plays a role in regulating cell signaling and it has been shown to be mutated in many human cancers. The anti-BRAF V600E is the first validated, commercially available IHC antibody capable of specifically detecting BRAF mutations. Today, cancer researchers are evaluating applications of V600E mutation testing in the diagnosis, prognosis and prediction of patient response to therapy in major cancers including colorectal, thyroid, brain and non-Hodgkin lymphoma.

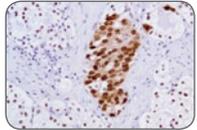


Androgen Receptor (AR) (SP107) Rabbit Monoclonal

SPB-M407-0	0.1 ml
SPB-M407-2	0.5 ml
SPB-M407-4	1.0 ml
SPB-M407-1	7.0 ml

CLONE: SP107. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide derived from near N-terminus of human AR. **REACTIVITY:** Human. **APPLICATION:** IHC-P. **CELLULAR LOCALIZATION:** Nucleus.

The androgen receptor (AR) is a member of the steroid superfamily of ligand-dependent transcription factors. The expression of AR is reportedly inversely correlated with histologic grade, i.e., well differentiated prostate tumors show higher expression than the poorly differentiated tumors.



Human Prostate Carcinoma stained with anti-Androgen Receptor (AR) antibody

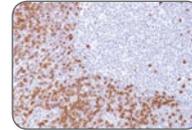
SP Clone

CD8 (SP16) Rabbit Monoclonal

SPB-M316-0	0.1 ml
SPB-M316-2	0.5 ml
SPB-M316-4	1.0 ml
SPB-M316-1	7.0 ml

CLONE: SP16. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide corresponding to the C-terminus of α chain of human CD8. **REACTIVITY:** Human. **APPLICATION:** IHC-P. **CELLULAR LOCALIZATION:** Membrane.

CD8 molecule consists of two chains, termed α and β chain, which are expressed as a disulphide-linked α/β heterodimer or as an α/α homodimer on T cell subset, thymocytes and NK cells. The majority of CD8⁺ T cells express CD8 as α/β heterodimer. CD8 functions as a coreceptor in concert with TCR for binding the MHC class I/peptide complex. The HIV-2 envelope glycoprotein binds CD8 α chain (but not β chain).



Human Tonsil stained with anti-CD8 antibody

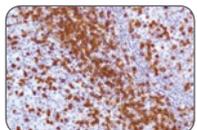
SP Clone

CD3 (SP7) Rabbit Monoclonal

SPB-M307-0	0.1 ml
SPB-M307-2	0.5 ml
SPB-M307-4	1.0 ml
SPB-M307-1	7.0 ml

CLONE: SP7. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide corresponding to the internal region of the ϵ chain of human CD3. **REACTIVITY:** Human, Mouse. **APPLICATION:** IHC-P, WB, FACS. **CELLULAR LOCALIZATION:** Membrane.

This antibody reacts with the intracytoplasmic portion of the CD3 antigen expressed by T cells. It stains human T cells in both the cortex and medulla of the thymus and in peripheral lymphoid tissues. It is suitable for staining normal and neoplastic T cells in formalin-fixed, paraffin-embedded tissues.



Human Tonsil stained with anti-CD3 antibody

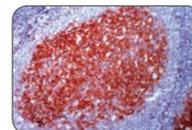
SP Clone

CD23 (SP23) Rabbit Monoclonal

SPB-M323-0	0.1 ml
SPB-M323-2	0.5 ml
SPB-M323-4	1.0 ml
SPB-M323-1	7.0 ml

CLONE: SP23. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Recombinant protein encoding aa 48-248 of human CD23. **REACTIVITY:** Human. **APPLICATION:** IHC-P, WB, FACS. **CELLULAR LOCALIZATION:** Membrane.

CD23 is a 45kDa glycoprotein, which is present on a subpopulation of freshly isolated peripheral blood and tonsil B cells and strongly expressed on EBV-transformed B lymphoblasts. CD23 is identical to the low affinity IgE receptor found on B cells. Expression of CD23 has been detected in neoplastic cells from cases of B cell chronic lymphocytic leukaemia and some cases of centroblastic/centrocytic lymphoma.



Human Tonsil stained with anti-CD23 antibody

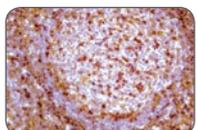
SP Clone

CD4 (SP35) Rabbit Monoclonal

SPB-M335-0	0.1 ml
SPB-M335-2	0.5 ml
SPB-M335-4	1.0 ml
SPB-M335-1	7.0 ml

CLONE: SP35. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide corresponding to the internal region of human CD4. **REACTIVITY:** Human. **APPLICATION:** IHC-P, FACS. **CELLULAR LOCALIZATION:** Membrane.

CD4, a single chain transmembrane glycoprotein, is found on a T cell subset (helper/inducer) representing 45% of peripheral blood lymphocytes. It is also present on 80% of thymocytes and at a lower level on monocytes. It is involved in recognition of antigen presented along with MHC class II by APCs. It serves as receptor for HIV and is expressed in T cell lymphomas.



Human Tonsil stained with anti-CD4 antibody

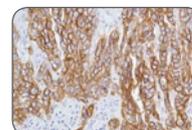
SP Clone

c-erbB-2/HER-2 (SP3) Rabbit Monoclonal

SPB-M303-0	0.1 ml
SPB-M303-2	0.5 ml
SPB-M303-4	1.0 ml
SPB-M303-1	7.0 ml

CLONE: SP3. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Recombinant protein encoding extracellular domain of human c-erbB-2. **REACTIVITY:** Human. **APPLICATION:** IHC-P. **CELLULAR LOCALIZATION:** Membrane.

c-erbB-2 is a receptor tyrosine kinase of the c-erbB family. It is closely related in structure to the epidermal growth factor receptor. c-erbB-2 oncoprotein is detectable in a proportion of breast and other adenocarcinomas, as well as transitional cell carcinomas.



Human Breast Carcinoma stained with anti-c-erbB-2/HER-2 antibody

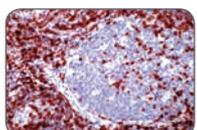
SP Clone

CD5 (SP19) Rabbit Monoclonal

SPB-M319-0	0.1 ml
SPB-M319-2	0.5 ml
SPB-M319-4	1.0 ml
SPB-M319-1	7.0 ml

CLONE: SP19. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide corresponding to the intracellular region of human CD5. **REACTIVITY:** Human. **APPLICATION:** IHC-P. **CELLULAR LOCALIZATION:** Membrane.

CD5 is a transmembrane protein found on 95% of thymocytes and 72% of peripheral blood lymphocytes. In lymph nodes, the main reactivity is observed in T cell areas. CD5 is expressed by many T cell leukemia, lymphomas and activated T cells. Occasionally, CD5 antigen is also expressed on a subset of B cells. Mantle cell lymphomas (same as diffuse centrocytic lymphomas) are CD5⁺ while the follicle center cell lymphoma are CD5⁻.



Human Tonsil stained with anti-CD5 antibody

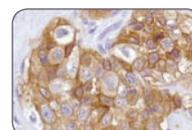
SP Clone

c-Met (SP44) Rabbit Monoclonal

SPB-M344-0	0.1 ml
SPB-M344-2	0.5 ml
SPB-M344-4	1.0 ml
SPB-M344-1	7.0 ml

CLONE: SP44. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide corresponding to the C-terminus of human c-Met. **REACTIVITY:** Human. **APPLICATION:** IHC-P, FACS. **CELLULAR LOCALIZATION:** Membrane.

The Met proto-oncogene product was identified as a transmembrane receptor-like protein with tyrosine kinase activity that is expressed in many tissues and is the cell surface receptor for hepatocyte growth factor, a plasminogen-like protein thought to be a humoral mediator of liver regeneration.



Human Colon Adenocarcinoma stained with anti-c-Met antibody

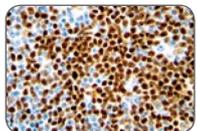
SP Clone

Cyclin D1 (SP4) Rabbit Monoclonal

SPB-M304-0	0.1 ml
SPB-M304-2	0.5 ml
SPB-M304-4	1.0 ml
SPB-M304-1	7.0 ml

CLONE: SP4. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide corresponding to the C-terminus of human cyclin D1. **REACTIVITY:** Human. **APPLICATION:** IHC-P, WB. **CELLULAR LOCALIZATION:** Nucleus.

Cyclin D1 [PRAD-1; bcl-1] is one of the key cell cycle regulators and functions in association with cdk4 and/or cdk6 by phosphorylating the Rb protein. It is a putative proto-oncogene over-expressed in a wide variety of human neoplasms including mantle cell lymphomas (MCL).



Human Mantle Cell Lymphoma stained with anti-Cyclin D1 antibody

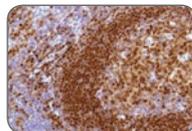
SP Clone

PAX-5 (SP34) Rabbit Monoclonal

SPB-M334-0	0.1 ml
SPB-M334-2	0.5 ml
SPB-M334-4	1.0 ml
SPB-M334-1	7.0 ml

CLONE: SP34. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide derived from C-terminus of human PAX-5. **REACTIVITY:** Human. **APPLICATION:** IHC-P, FACS. **CELLULAR LOCALIZATION:** Nucleus.

PAX-5 is a B cell specific activator protein (BSAP). In the early stages of B cell development, PAX-5 influences the expression of several B cell-specific genes, such as CD19 and CD20. PAX-5 is expressed primarily in pro-, pre- and mature B cells, but not in plasma cells. PAX-5 is important in B cell development, but may also have a role in proper neuronal development.



Human Tonsil stained with anti-PAX-5 antibody

SP Clone

DOG-1 (SP31) Rabbit Monoclonal

SPB-M331-0	0.1 ml
SPB-M331-2	0.5 ml
SPB-M331-4	1.0 ml
SPB-M331-1	7.0 ml

CLONE: SP31. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptides of human DOG-1. **REACTIVITY:** Human. **APPLICATION:** IHC-P. **CELLULAR LOCALIZATION:** Cytoplasm, Membrane.

DOG-1 is a novel marker expressed ubiquitously in gastrointestinal stromal tumors irrespective of kit or PDGFR α mutation status.



Human Gastrointestinal Stromal Tumor stained with anti-DOG-1 antibody

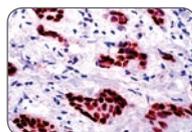
SP Clone

Progesterone Receptor (PR) (SP2) Rabbit Monoclonal

SPB-M302-0	0.1 ml
SPB-M302-2	0.5 ml
SPB-M302-4	1.0 ml
SPB-M302-1	7.0 ml

CLONE: SP2. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Recombinant protein encoding aa 412-526 of human progesterone receptor. **REACTIVITY:** Human. **APPLICATION:** IHC-P. **CELLULAR LOCALIZATION:** Nucleus.

The progesterone receptor (PR) is an estrogen-regulated protein. It has been proposed that expression of PR determination indicates a responsive estrogen receptor (ER) pathway. A number of studies have shown that PR determination provides supplementary information to ER.



Human Breast Carcinoma stained with anti-Progesterone Receptor

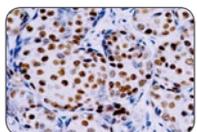
SP Clone

Estrogen Receptor (ER) (SP1) Rabbit Monoclonal

SPB-M301-0	0.1 ml
SPB-M301-2	0.5 ml
SPB-M301-4	1.0 ml
SPB-M301-1	7.0 ml

CLONE: SP1. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide derived from C-terminus of human estrogen receptor α . **REACTIVITY:** Human. **APPLICATION:** IHC-P, WB. **CELLULAR LOCALIZATION:** Nucleus.

This antibody recognizes a protein of 67kDa, which is identified as estrogen receptor (ER). It strongly stains the nucleus of epithelial cells in breast carcinomas. The ER is an important regulator of growth and differentiation in the mammary gland.



Human Breast Carcinoma stained with anti-Estrogen Receptor (ER) antibody

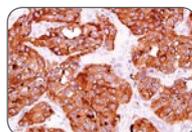
SP Clone

Synaptophysin (SP11) Rabbit Monoclonal

SPB-M311-0	0.1 ml
SPB-M311-2	0.5 ml
SPB-M311-4	1.0 ml
SPB-M311-1	7.0 ml

CLONE: SP11. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide corresponding to the C-terminus of human synaptophysin. **REACTIVITY:** Human. **APPLICATION:** IHC-P, WB. **CELLULAR LOCALIZATION:** Cytoplasm.

This antibody labels normal neuroendocrine cells of human adrenal medulla, carotid body, skin, pituitary gland, thyroid, lung, pancreas and gastrointestinal mucosa. Neurons in the brain, spinal cord and retina are also labeled. Anti-synaptophysin antibody reacts with neuroendocrine neoplasms of neural as well as epithelial types.



Human Neuroendocrine Tumor stained with anti-Synaptophysin antibody

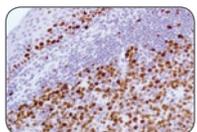
SP Clone

Ki-67 (SP6) Rabbit Monoclonal

SPB-M306-0	0.1 ml
SPB-M306-2	0.5 ml
SPB-M306-4	1.0 ml
SPB-M306-1	7.0 ml

CLONE: SP6. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide corresponding to the C-terminus of human Ki-67. **REACTIVITY:** Human, Mouse. **APPLICATION:** IHC-P. **CELLULAR LOCALIZATION:** Nucleus.

Ki-67 is a nuclear protein, which is expressed in the proliferating cells. Ki-67 is preferentially expressed during late G₁-, S-, M- and G₂-phases of the cell cycle, while cells in the G₀ (quiescent) phase are negative for this protein.



Human Tonsil stained with anti-Ki-67 antibody

SP Clone

SP Clone

SP = Spring Proprietary

While you may not be familiar with Spring Bioscience Corporation, you are probably quite familiar with rabbit monoclonal "SP Clones". All SP antibody clone products were designed and manufactured by Spring Bioscience. *It all started with SP1, the now gold standard Estrogen Receptor marker.* SP clones continue to emerge as best-in-class immunohistochemistry markers for their high affinity, sensitivity, and specificity.

Available in 0.1 ml, 0.5 ml and 1.0 ml concentrated sizes as well as a 7.0 ml prediluted Ready-to-Use configuration.

NEW PTEN (SP218) -

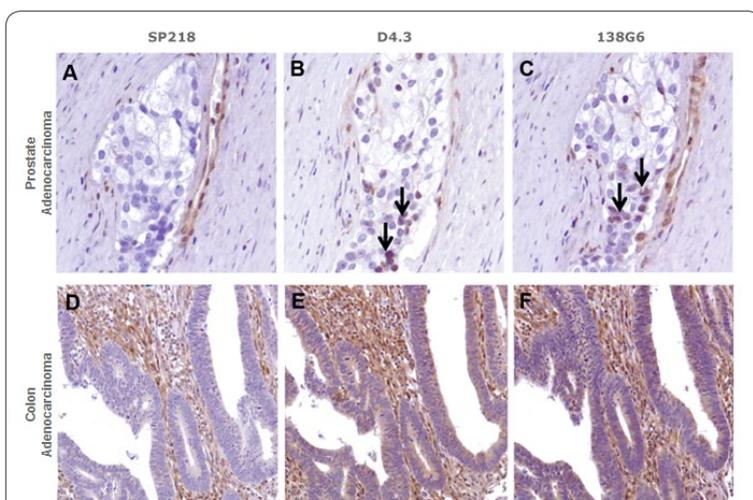
High-quality Rabbit Monoclonal Antibody optimized for IHC

PTEN (SP218) Rabbit Monoclonal

SPB-M518-0	0.1 ml
SPB-M518-2	0.5 ml
SPB-M518-4	1.0 ml
SPB-M518-1	7.0 ml

CLONE: SP218. **ISOTYPE:** Rabbit IgG. **IMMUNOGEN:** Synthetic peptide derived from the C-terminus of human PTEN. **REACTIVITY:** Human. **APPLICATION:** IHC-P, WB, FACS. **CELLULAR LOCALIZATION:** Cytoplasm, Nucleus.

Phosphatidylinositol-3, 4, 5-trisphosphate 3-phosphatase and dual-specificity protein phosphatase (PTEN) is a tumor suppressor and a member in the PI3K/PTEN/Akt pathway. The defects of PTEN have been implicated in human cancers from breast, prostate, thyroid, skin, endometrium, head and neck, and brain. Up to 50-60% of advanced prostate cancers show abnormal PTEN gene expression or loss of protein expression.



Overview of comparison testing, showing variations in specificity and sensitivity among SP218 and competitive anti-PTEN antibodies on prostate and colon samples. Cancer cells from prostate adenocarcinoma (panel A) and colon adenocarcinoma (panel D) show total loss or diminished expression of PTEN when SP218 is used. In contrast, nuclear staining (panel B and C, arrows) in cancer cells is present for clones D4.3 and 138G6. Diffuse cytoplasmic and stromal staining are prominent for clones D4.3 and 138G6. But interestingly, the stromal cell components (fibroblasts, lymphocytes, and endothelial cells) are stained with similar intensities across all images. This suggests that there is non-specific staining in stromal and cancer area with the CST clones (D4.3 and 138G6) when compared with the Spring clone.

APPLICATIONS:

FACS: Flow Cytometry; **IHC-P:** Immunohistochemistry (Paraffin); **WB:** Western blot.

Advantages of Rabbit Monoclonal anti-PTEN (SP218) from Spring Bioscience:

- Highly sensitive and specific monoclonal antibody
- Robust performance for FFPE tissue
- Minimized background and non-specific staining
- Increased accuracy for PTEN status interpretation

Also available

Recombinant Proteins

Ready to use recombinant proteins expressed in *E. coli*.

Antibody Microarray Portfolio

Spring Bioscience's industry-leading portfolio of antibodies spans a broad field in protein-based research enabling expansive series of arrays. The various formats of these microarrays provide researchers the convenience and flexibility of detecting and analyzing multiple proteins simultaneously on a single slide.

Detection and Ancillary Portfolio

Spring Bioscience's complete line of detection systems is optimized for immunohistochemistry (IHC) and is designed to meet the complex needs of any laboratory. The detection systems were developed to improve signal to noise ratios, decrease incubation time, providing clean and crisp staining while working with mouse and rabbit antibodies.