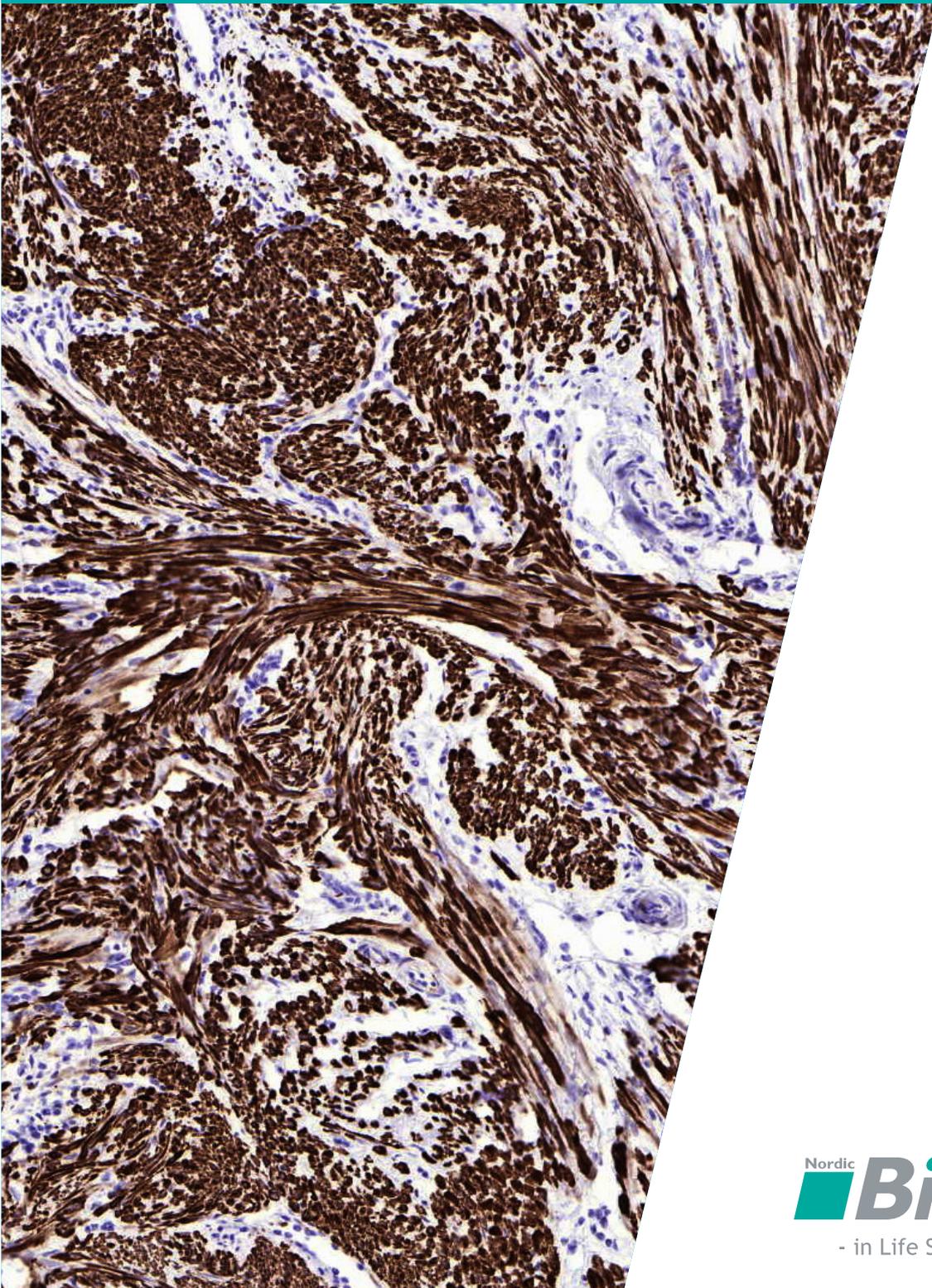


BioSite **Histo**



# Optibodies™



## Ordering

*Orders may be placed by any of the following methods:*

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**Web:** [www.nordicbiosite.com](http://www.nordicbiosite.com)

**E-Mail:** [order@nordicbiosite.com](mailto:order@nordicbiosite.com)

**Phone:** +46 (0)8 5444 33 40

**Other phone numbers:**

**Norway:** 2396 0418

**Denmark:** 8844 8801

**Finland:** 020 7432 007

**Estonia:** +358 20 7432 007

**Latvia:** +358 20 7432 007

**Lithuania:** +358 20 7432 007

**USA:** +1 484 534 3568

**Fax:** +46 (0)8 756 94 90



## Optibodies™ -

### antibodies optimized with high knowledge and dedication

The valued philosophy of Optibodies™ is to offer a series of antibodies that are easy and reliable to use and always offer a perfect staining performance. Our team of devoted scientists has created a range of mouse and rabbit monoclonal antibodies for markers that are clinically and diagnostically significant. One of the key targets for each Optibody™ is also specificity and high affinity towards its target epitopes. They are also tailored to be flexible and reliable in use, with high consistency between lots and excellent stability of the products. To achieve all this, the journey of antibody to be an Optibody™ is long and demanding.

Our Optibody antibodies are carefully optimized and fine-tuned with the needs of today's clinical IHC laboratory. Optibodies™ are optimized using NordiQC recommendations of control tissues and criteria. Antibody optimization refers to a range of tests that an antibody can go through in order to find its optimal staining conditions. Each antigen has a preferred method of antigen retrieval such as Heat Induced Epitope Retrieval (HIER) using acidic citrate or TRIS-EDTA base buffers, as well as an enzymatic retrieval process. However, the majority of antigens need an alkaline antigen retrieval method for optimal staining pattern. Optibodies have been selected to our portfolio according to the performance in alkaline antigen retrieval.

Each antibody has an optimal concentration when it can be used, depending upon the affinity of paratope and epitope as well as expression level of the antigen. Antibodies optimized with tissues that express high levels of antigen expression may prove inadequate when staining tissues with low antigen expression. Therefore, it is necessary to optimize an antibody for a variety of tissue types and antigen levels to show performance of the Optibody.

Never hesitate to contact us if you have any questions about the products we offer. *We are here to help you.*



## PRODUCT LIST

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Optibody	Catalog No.	Clone	Source	CE/IVD
AMACR	BSH-7136	BS2	mouse monoclonal antibody	✓
Androgen receptor	BSH-7360	BS46	mouse monoclonal antibody	✓
Basal cell cocktail	BSH-1001	BSR55 & BSR6	rabbit monoclonal antibody cocktail	✓
Beta-catenin	BSH-2014	BS31	mouse monoclonal antibody	✓
Beta-catenin	BSH-3010	BSR121	rabbit monoclonal antibody	✓
BCL2	BSH-2001	BS94	mouse monoclonal antibody	✓
BCL6	BSH-2011	BS19	mouse monoclonal antibody	✓
Calretinin	BSH-4005	BSR235	rabbit monoclonal antibody	✓
CD2	BSH-9399	BS60	mouse monoclonal antibody	✓
CD3e	BSH-3000	BSR10	rabbit monoclonal antibody	✓
CD3z/CD247	BSH-7370	BS103	mouse monoclonal antibody	✓
CD4	BSH-3008	BSR4	rabbit monoclonal antibody	✓
CD5	BSH-4006	BSR33	rabbit monoclonal antibody	✓
CD7	BSH-2004	BS8	mouse monoclonal antibody	✓
CD7	BSH-3002	BSR9	rabbit monoclonal antibody	✓
CD8	BSH-5001	BSR5	rabbit monoclonal antibody	✓
CD10	BSH-7021	BS1	mouse monoclonal antibody	✓
CD11c	BSH-2016	BS116	mouse monoclonal antibody	✓
CD14	BSH-7019	BS9	mouse monoclonal antibody	✓
CD20	BSH-2006	BS6	mouse monoclonal antibody	✓
CD22	BSH-2009	BS100	mouse monoclonal antibody	✓
CD23	BSH-3004	BS20	mouse monoclonal antibody	✓
CD31	BSH-7112	BS50	mouse monoclonal antibody	✓
CD34	BSH-2008	BS30	mouse monoclonal antibody	✓
CD38	BSH-7347	BS3	mouse monoclonal antibody	✓
CD38	BSH-3009	BSR7	rabbit monoclonal antibody	✓
CD43	BSH-2012	BS62	mouse monoclonal antibody	✓
CD68	BSH-2007	BS79	mouse monoclonal antibody	✓
CD79a	BSH-3007	BSR20	rabbit monoclonal antibody	✓
CD105/Endoglin	BSH-7631	BS71	mouse monoclonal antibody	✓
CEA	BSH-7437	BS33	mouse monoclonal antibody	✓
Cytokeratin PAN	BSH-7124	BS5	mouse monoclonal antibody	✓
CK5	BSH-7123	BS42	mouse monoclonal antibody	✓
CK5	BSH-3011	BSR55	rabbit monoclonal antibody	✓
CK5/CK14	BSH-3012	BSR55 & BSR47	rabbit monoclonal antibody cocktail	✓
CK8	BSH-4000	BSR15	rabbit monoclonal antibody	✓
CK14	BSH-3013	BSR47	rabbit monoclonal antibody	✓
CK17	BSH-7311	BS55	mouse monoclonal antibody	✓
CK18	BSH-7235	BS83	mouse monoclonal antibody	✓
CK19	BSH-7240	BS23	mouse monoclonal antibody	✓
CK20	BSH-2000	BS101	mouse monoclonal antibody	✓
CK20	BSH-5110	BSR11	rabbit monoclonal antibody	✓
Cyclin D	BSH-4002	BSR112	rabbit monoclonal antibody	✓
Desmin	BSH-7082	BS21	mouse monoclonal antibody	✓
E-CAD	BSH-7516	BS38	mouse monoclonal antibody	✓
Ep-CAM	BSH-7402	BS14	mouse monoclonal antibody	✓
Glucagon	BSH-7443	BS71	mouse monoclonal antibody	✓
Glutamine synthetase	BSH-2013	BS51	mouse monoclonal antibody	✓

## PRODUCT LIST

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Optibody	Catalog No.	Clone	Source	CE/IVD
Granzyme B	BSH-3014	BSR150	rabbit monoclonal antibody	✓
HER2	BSH-7182	BS24	mouse monoclonal antibody	✓
HER2	BSH-4004	BSR44	rabbit monoclonal antibody	✓
Insulin	BSH-2010	BS22	mouse monoclonal antibody	✓
Ki-67	BSH-7302	BS4	mouse monoclonal antibody	✓
L1CAM	BSH-3005	BSR3	rabbit monoclonal antibody	✓
Li-Cadherin	BSH-3016	BS26	mouse monoclonal antibody	✓
LEF1	BSH-9277	BS175 & BS190	mouse monoclonal antibody cocktail	✓
Mammaglobin	BSH-7589	BS17	mouse monoclonal antibody	✓
MBP	BSH-7697	BS188	mouse monoclonal antibody	✓
MCM2	BSH-7698	BS18	mouse monoclonal antibody	✓
Melan A	BSH-2003	BS52	mouse monoclonal antibody	✓
MLH1	BSH-7208	BS29	mouse monoclonal antibody	✓
MSH6	BSH-3015	BSR100	rabbit monoclonal antibody	✓
Napsin A	BSH-2002	BS10	mouse monoclonal antibody	✓
P53	BSH-7287	BS12	mouse monoclonal antibody	✓
P63	BSH-7449	BS63	mouse monoclonal antibody	✓
P63	BSH-3006	BSR6	rabbit monoclonal antibody	✓
PAX5	BSH-7833	BS11	mouse monoclonal antibody	✓
PD1	BSH-3001	BSR1	rabbit monoclonal antibody	✓
PDL1	BSH-4003	BSR90	rabbit monoclonal antibody	✓
PHHR (ser10)	BSH-4001	BSR99	rabbit monoclonal antibody	✓
SMA	BSH-7459	BS66	mouse monoclonal antibody	✓
Somastatin	BSH-7849	BS16	mouse monoclonal antibody	✓
SOX2	BSH-2015	BS25	mouse monoclonal antibody	✓
SOX10	BSH-7959	BS7	mouse monoclonal antibody	✓
Synaptophysin	BSH-7385	BS15	mouse monoclonal antibody	✓
Vimentin	BSH-7100	BS13	mouse monoclonal antibody	✓

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Bulk quotations/sample requests available.

Always check our website for the latest and most updated Optibodies™: [www.nordicbiosite.com](http://www.nordicbiosite.com).

## AMACR

Cat#: BSH-7136-100 100ul, BSH-7136-1 1ml

Clonality: Mouse monoclonal antibody

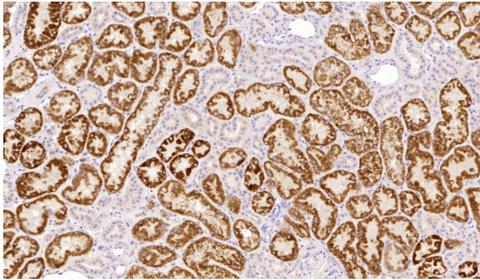
Clone: BS2

Application: IHC-P

S/R: Human, rabbit, rat, mouse, porcine, dog

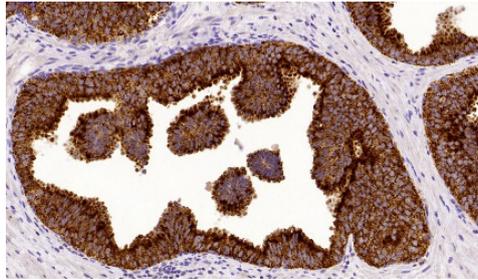
Control tissues: Kidney, PIN, Prostate adenocarcinoma

AMACR (alpha-methylacyl-CoA racemase) is prostate cancer-specific gene that encodes a protein involved in the beta-oxidation of branched chain fatty acids. Expression of AMACR protein is found in prostatic adenocarcinoma, but not in benign prostatic tissue. It stains premalignant lesions of prostate: high-grade prostatic intraepithelial neoplasia (PIN) and a typical adenomatous hyperplasia. AMACR can be used as a positive marker for PIN.



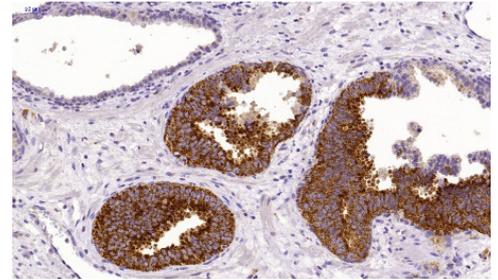
### AMACR - Kidney

Kidney section has been stained using AMACR antibody (BS2) with 1:200 dilution. Tubulus cells in proximal tubules have strong granular staining.



### AMACR - Prostate PIN

Prostate section has been stained using AMACR antibody (BS2) with 1:200 dilution. Neoplastic cells have strong granular staining.



### AMACR - Prostate PIN

Prostate section has been stained using AMACR antibody (BS2) with 1:200 dilution. Neoplastic cells have strong granular staining. Note glands without neoplastic cells.

## Androgen Receptor

Cat#: BSH-7360-100 100ul, BSH-7360-1 1ml

Clonality: Mouse monoclonal antibody

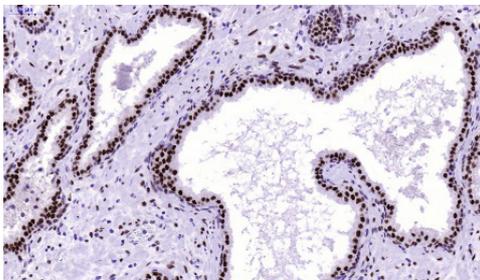
Clone: BS46

Application: IHC-P

S/R: Human, mouse

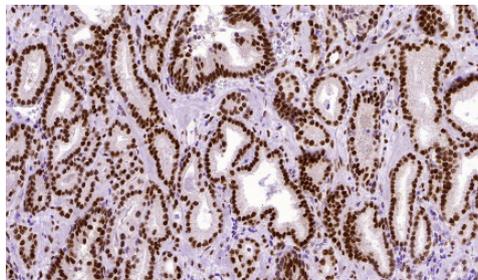
Control tissue: Prostate

The androgen receptor (AR), also known as NR3C4 (nuclear receptor subfamily 3, group C, member 4), is a type of nuclear receptor which is activated by binding of either of the androgenic hormones testosterone or dihydrotestosterone in the cytoplasm and then translocating into the nucleus. The androgen receptor is most closely related to the progesterone receptor. The main function of the androgen receptor is as a DNA binding transcription factor which regulates gene expression.



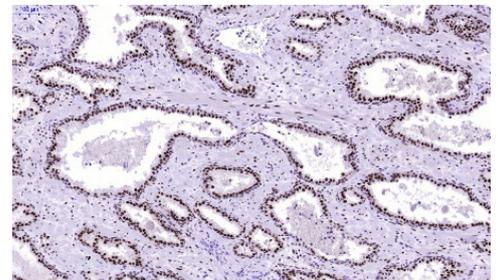
### AR - Prostate

Prostate section has been stained using AR antibody (BS46) with 1:200 dilution. Epithelial cells of prostate glands have strong nuclear staining.



### AR - Prostate adenocarcinoma

Prostate section has been stained using AR antibody (BS46) with 1:200 dilution. Carcinoma cells have strong nuclear staining.



### AR - Prostate

Prostate section has been stained using AR antibody (BS46) with 1:200 dilution. Epithelial cells of prostate glands have strong nuclear staining.

## Basal Cell (CK5 & P63)

Cat#: BSH-1001-100 100ul, BSH-1001-1 1 ml

Clonality: Rabbit monoclonal antibody

Clone: BSR55 & BSR6

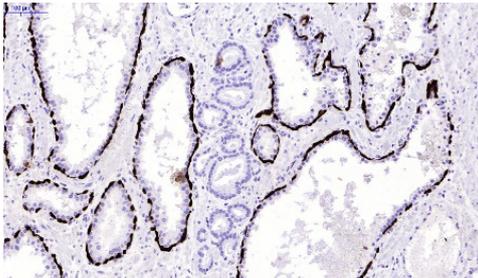
Application: IHC-P

S/R: Human

Control tissues: Appendix, tonsil

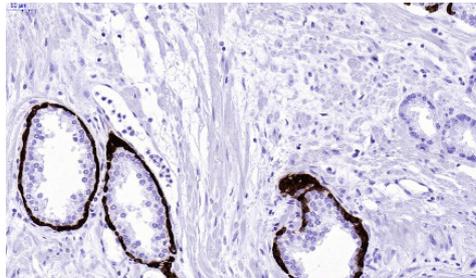


This antibody cocktail consists of cytokeratin 5 and P63 rabbit monoclonal antibodies. It is useful cocktail for demonstrating basal cells or basal cell neoplasia especially in differentiation diagnostics of prostate hyperplasia and prostate adenocarcinoma.



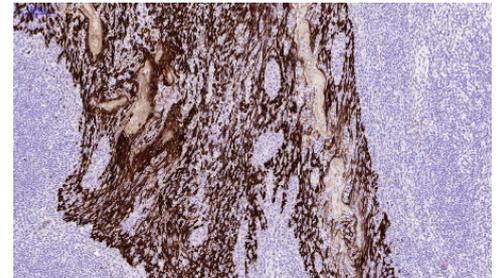
### Basal cell - Prostate adenocarcinoma

Prostate adenocarcinoma section has been stained using Basal cell cocktail antibody with 1:200 dilution. Strong cytoplasmic (CK5) and nuclear (P63) label were observed from prostate glands but prostate adenocarcinoma remains negatively without label.



### Basal cell - Prostate adenocarcinoma

Prostate adenocarcinoma section has been stained using Basal cell cocktail antibody with 1:200 dilution. Strong cytoplasmic (CK5) and nuclear (P63) label were observed from prostate glands but prostate adenocarcinoma remains negatively without label.



### Basal cell - Tonsil

Tonsil section has been stained using Basal cell cocktail antibody with 1:200 dilution. Tonsil epithelia have strong label of CK5 and basal cells have also nuclear P63 label.

## Beta-Catenin

Cat#: BSH-2014-100 100ul, BSH-2014-1 1 ml

Clonality: Mouse monoclonal antibody

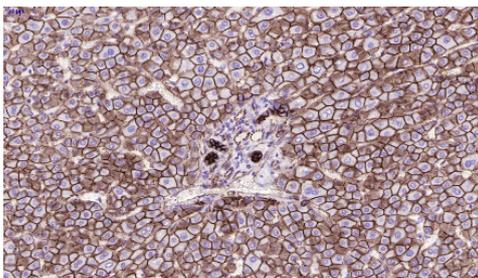
Clone: BS31

Application: IHC-P, IHC-Fro

S/R: Human, mouse, rat, porcine, rabbit, sheep, dog

Control tissues: Tonsil, appendix, liver

Beta-Catenin is a member of catenin family together with alpha and gamma catenin. It mediates cell-cell adhesion with cadherins and it is key regulatory protein in signaling through the WNT pathway. Beta catenin has a role in cellular proliferation, differentiation and development. Mutations in beta catenin gene (CTNNB1) leads accumulation of the beta catenin protein in cytoplasm and nucleus in different type of tumors e.g. endometrial carcinoma and desmoid tumors. This antibody is useful in differentiation diagnostic of tumors.



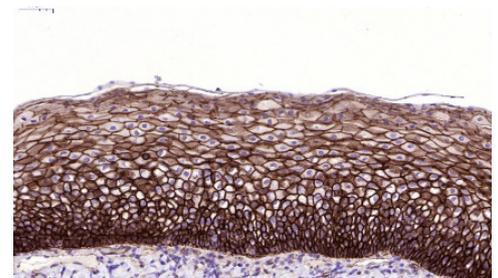
### Beta-catenin - Liver

Liver section has been stained using beta-catenin antibody (BS31) with 1:200 dilution. Membrane of hepatocytes as well as epithelia of bile ducts should be labeled moderately to strongly.



### Beta-catenin - Colon carcinoma

Colon carcinoma section has been stained using Beta-Catenin antibody (Clone: BS31) with 1:200 dilution. Carcinoma cells have strong membranous staining pattern, without nuclear accumulation of beta-catenin.



### Beta-catenin - Tonsil

Tonsil section has been stained using Beta-Catenin antibody (Clone: BS31) with 1:200 dilution. Squamous epithelial cells have strong label.

## Beta-Catenin

Cat#: BSH-3010-100 100ul, BSH-3010-1 1 ml

Clonality: Rabbit monoclonal antibody

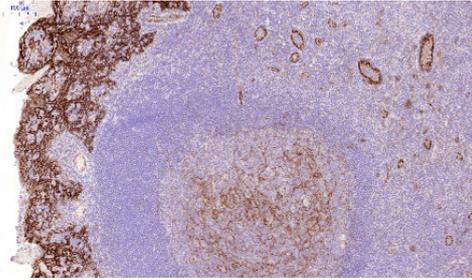
Clone: BSR120

Application: IHC-P, IHC-Fro

S/R: Human, mouse, rat, rabbit, porcine, sheep, dog

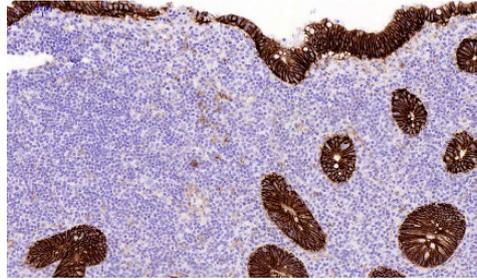
Control tissues: Tonsil, appendix

Beta-Catenin is a member of catenin family together with alpha and gamma catenin. It mediates cell-cell adhesion with cadherins and it is key regulatory protein in signaling through the WNT pathway. Beta catenin has a role in cellular proliferation, differentiation and development. Mutations in beta catenin gene (CTNNB1) leads accumulation of the beta catenin protein in cytoplasm and nucleus in different type of tumors eg. endometrial carcinoma and desmoid tumors. This antibody is useful in differentiation diagnostic of tumors.



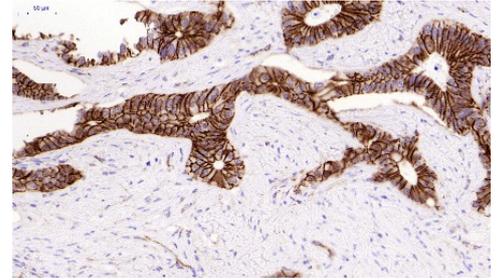
### Beta-catenin - Tonsil

Tonsil section stained using beta catenin antibody (Clone: BSR120) with 1:200 dilution. Squamous epithelial cells, vascular endothelial cells and follicular dendritic cells have strong to moderate staining reaction.



### Beta-catenin - Appendix

Appendix section stained using beta catenin antibody (Clone: BSR120) with 1:200 dilution. Columnar epithelial cells have strong membranous staining reaction.



### Beta-catenin - Colon carcinoma

Colon carcinoma section stained using beta catenin antibody (Clone: BSR120) with 1:200 dilution. Carcinoma cells stained strongly with membranous staining pattern without nuclear staining.

## BCL2

Cat#: BSH-2001-100 100ul, BSH-2001-1 1ml

Clonality: Mouse monoclonal antibody

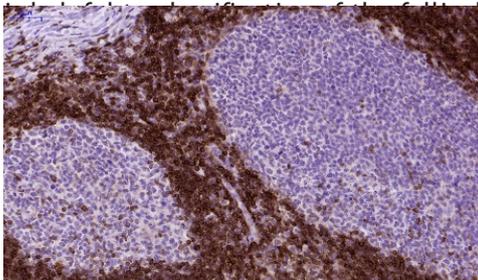
Clone: BS94

Application: IHC-P

S/R: Human

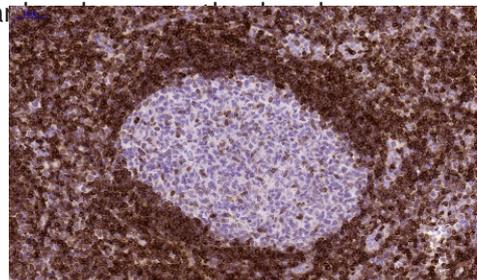
Control tissues: Tonsil, appendix

B-cell lymphoma/leukaemia-2 (Bcl-2) is an inhibitor of apoptosis, and its expression is generally abundant in cells which dividing and differentiating. In lymphatic tissue, Bcl-2 is highly expressed in T cells, maturing B cells as well as mature B cells. However, expression level in germinal center B cells is downregulated. Overexpression of the Bcl-2 is common in leukemia and various carcinomas and sarcomas. Over expression is common especially in non-Hodgkins lymphoma. Bcl-2



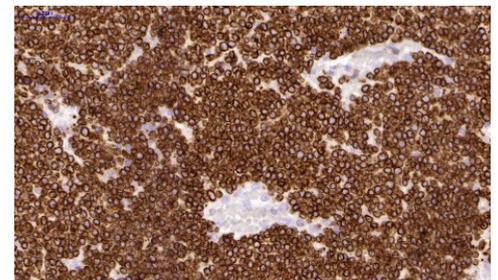
### BCL2 - Tonsil

Tonsil section has been stained using BCL2 antibody (BS94) with 1:200 dilution. All peripheral lymphocytes should be labelled and the most of the germinal center B cells should be negatively stained from tonsil sections.



### BCL2 - Lymph node (CLL)

Lymph node section has been stained using BCL2 antibody (BS94) with 1:200 dilution. Leukemia cells stained strongly with cytoplasmic staining pattern.



### BCL2 - Mantle cell lymphoma

Lymph node section has been stained using BCL2 antibody (BS94) with 1:200 dilution. Mantle cell lymphoma cells stained strongly.

## BCL6

Cat#: BSH-2011-100 100ul, BSH-2011-1 1 ml

Clonality: Mouse monoclonal antibody

Clone: BS19

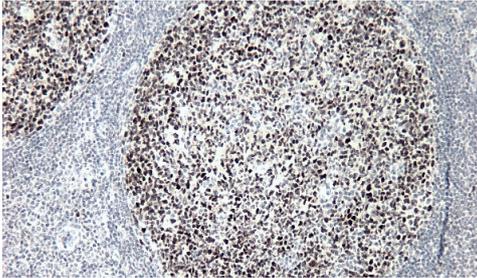
Application: IHC-P

S/R: Human

Control tissues: Tonsil, appendix

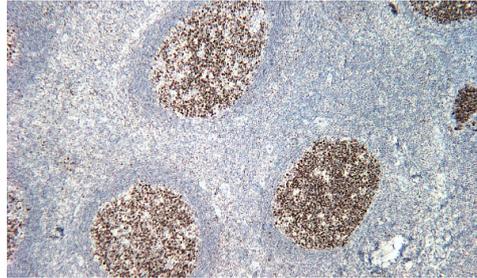


The BCL6 protein is a nuclear zinc finger transcription factor with a N-terminal POZ domain. BCL6 protein is a transcriptional repressor and is necessary for germinal center formation. BCL6 protein is a sequence-specific repressor of transcription and in germinal centers it inhibits differentiation of germinal center B cells to plasma cells. In lymphatic tissues, BCL6 is expressed mostly in germinal center B cells in dark and light zones of germinal centers. BCL6 is useful especially for germinal center neoplasms including eg. follicular lymphoma, DLBCL, Burkitt lymphoma and lymphocyte predominant Hodgkin's lymphoma as well.



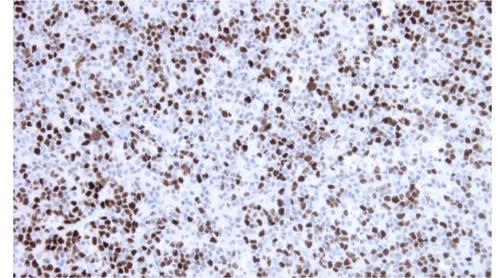
### BCL6 - Tonsil

Tonsil section has been stained using BCL6 antibody (BS19) with 1:200 dilution. Interfollicular B-cells stained strongly with nuclear staining pattern



### BCL6 - Tonsil

Tonsil section has been stained using BCL6 antibody (BS19) with 1:200 dilution. Interfollicular B-cells stained strongly with nuclear staining pattern



### BCL6 - DLBCL

DLBCL section has been stained using BCL6 antibody (BS19) with 1:200 dilution. Lymphoma cells stained strongly with nuclear staining pattern.

## Calretinin

Cat#: BSH-4005-100 100ul, BSH-4005-1 1 ml

Clonality: Rabbit monoclonal antibody

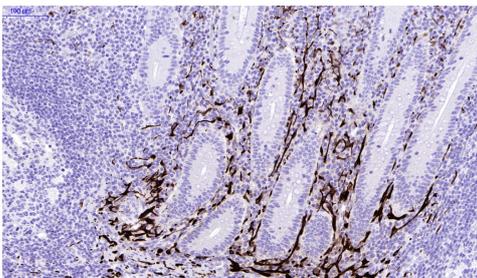
Clone: BSR235

Application: IHC

S/R: human

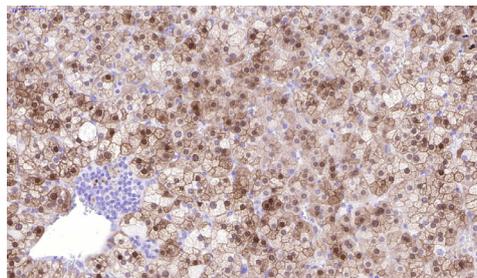
Control tissues: Appendix, adrenal gland

Calretinin is a calcium-binding protein and it is expressed in neurons and in nervous system. Calretinin is also expressed in mesothelial cells and steroid producing cells eg. Leydig cells and adrenal cortical cells as well as fat cells and some neuroendocrine cells. Calretinin is located in the cells to nucleus and cytoplasm. Calretinin is useful for mesothelioma diagnostic (differentiate diagnostic between mesothelioma from carcinoma) and it is expressed in most malignant mesothelioma.



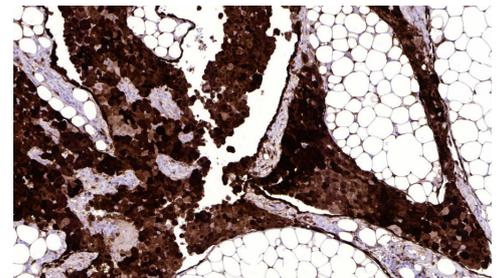
### Calretinin - Appendix

Appendix have been stained using calretinin antibody (Clone: BSR235) with 1:100 dilution. Neuronal cells have strong label in stroma of appendix as well as in muscular layer of appendix (ganglion cells and axons of neuronal cells).



### Calretinin - Adrenal gland

Adrenal gland have been stained using calretinin antibody (Clone: BSR235) with 1:100 dilution. Adrenal gland is low-antigen containing tissue and weak to moderate nuclear and cytoplasmic staining reaction must be detected.



### Calretinin - Mesotheliomas

Mesotheliomas have been stained using calretinin antibody (Clone: BSR235) with 1:100 dilution. Strong staining reaction in malignant mesothelioma was observed (c and d). Weak staining reaction in nucleus of fat cells were detected.

## CD2

Cat#: [BSH-9399-100](#) 100ul, [BSH-9399-1](#) 1 ml

Clonality: Mouse monoclonal antibody

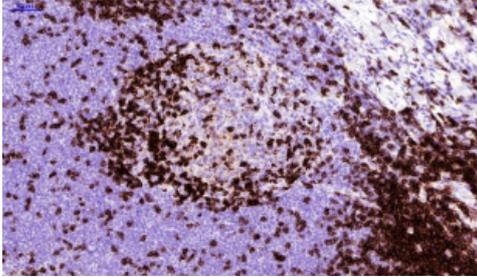
Clone: BS60

Application: IHC-P

S/R: Human

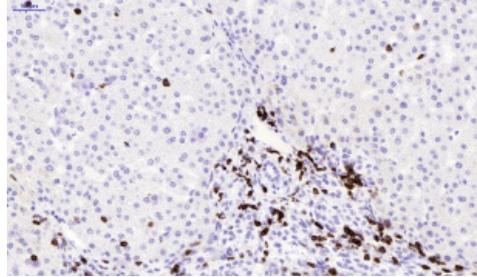
Control tissues: Tonsil, appendix

CD2 is a surface antigen of the human T-lymphocyte lineage that is expressed on all peripheral blood T-lymphocytes. It is one of the earliest T-cell markers, being present on more than 95% of thymocytes; it is also found on some natural killer cells but not on B lymphocytes. CD2 antibody is useful for lymphoma diagnostic.



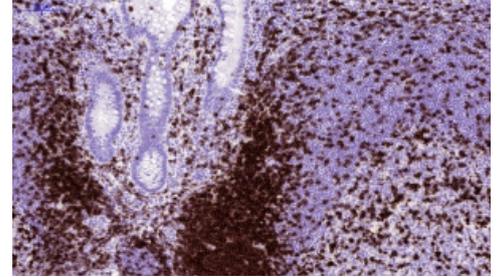
**CD2 - Tonsil**

Tonsil section has been stained using CD2 antibody (BS60) with 1:200 dilution. T-cells have strong membranous label.



**CD2 - Liver**

Liver section has been stained using CD2 antibody (BS60) with 1:200 dilution. T-cells have strong membranous label.



**CD2 - Appendix**

Appendix section has been stained using CD2 antibody (BS60) with 1:200 dilution. T-cells have strong membranous label.

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## CD3e

Cat#: [BSH-3000-100](#) 100ul, [BSH-3000-1](#) 1 ml

Clonality: Rabbit monoclonal antibody

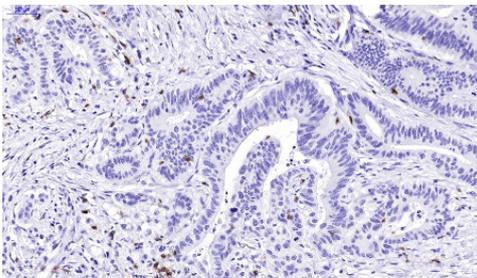
Clone: BSR10

Application: IHC-P, IHC-Fro

S/R: Human (Others not tested)

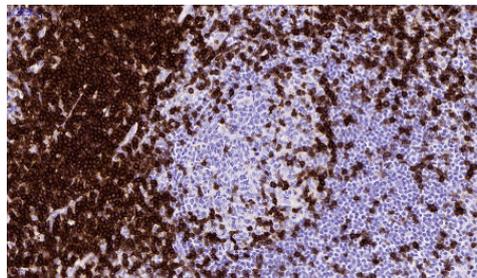
Control tissues: Tonsil, appendix

The protein encoded by this gene is the CD3-epsilon polypeptide, which together with CD3-gamma, -delta and -zeta, and the T-cell receptor alpha/beta and gamma/delta heterodimers, forms the T-cell receptor-CD3 complex. This complex plays an important role in coupling antigen recognition to several intracellular signal-transduction pathways. The genes encoding the epsilon, gamma and delta polypeptides are located in the same cluster on chromosome 11. The epsilon polypeptide plays an essential role in T-cell development. CD3e is an important pan T-cell marker for the classification of malignant lymphomas and lymphoid leukaemias.



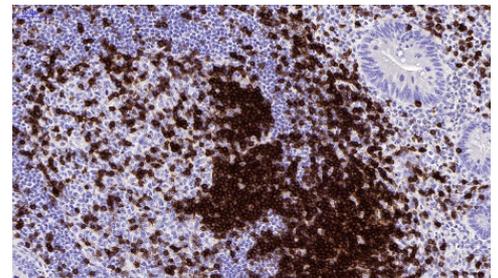
**CD3e - Colon carcinoma**

Colon carcinoma section has been stained using CD3 antibody with 1:200 dilution. Tumor-infiltrating lymphocytes have strong membranous staining reaction.



**CD3e - Tonsil**

Tonsil section has been stained using CD3 antibody (BSR10) with 1:200 dilution. All T-cells have strongly membranous staining pattern.



**CD3e - Appendix**

Appendix section has been stained using CD3 antibody (BSR10) with 1:200 dilution. T-cells and intraepithelial T-cells stained strongly.

## CD3z/CD247

Cat#: BSH-7370-100 100ul, BSH-7370-1 1ml

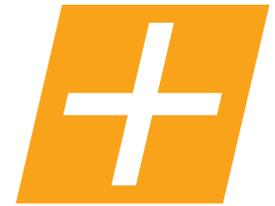
Clonality: Mouse monoclonal antibody

Clone: BS103

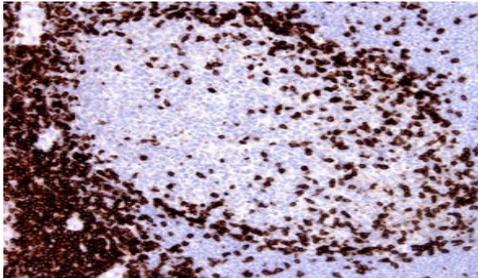
Application: IHC-P

S/R: Human, rabbit, rat, mouse, pig

Control tissues: Tonsil, appendix

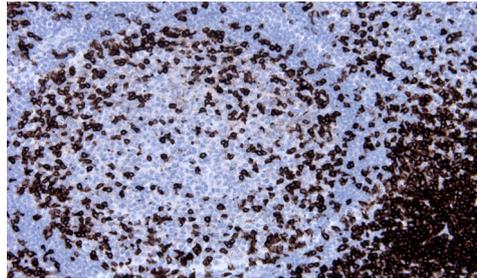


The protein encoded by this gene is T-cell receptor zeta, which together with T-cell receptor alpha/beta and gamma/delta heterodimers, and with CD3-gamma, -delta and -epsilon, forms the T-cell receptor-CD3 complex. The zeta chain plays an important role in coupling antigen recognition to several intracellular signal-transduction pathways. Low expression of the antigen results in impaired immune response. Two alternatively spliced transcript variants encoding distinct isoforms have been found for this gene.



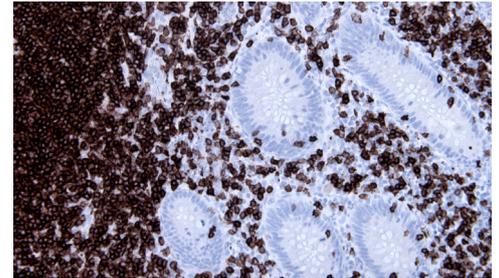
### CD3z - Tonsil

Tonsil section has been stained using CD3z antibody (BS103) with 1:300 dilution. All T cells should be labelled and scattered T cells should be stained from germinal center.



### CD3z - Tonsil

Tonsil section has been stained using CD3z antibody (BS103) with 1:300 dilution. All T cells should be labelled and scattered T cells should be stained from germinal center.



### CD3z - Appendix

Appendix section has been stained using CD3z antibody (BS103) with 1:300 dilution. T cells and intraepithelial T cells stained strongly.

## CD4

Cat#: BSH-3008-100 100ul, BSH-3008-1 1 ml

Clonality: Rabbit monoclonal antibody

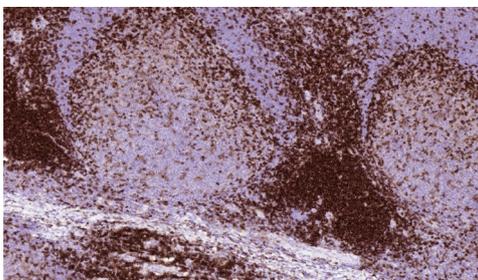
Clone: BSR4

Application: IHC-P, IHC-Fro

S/R: Human

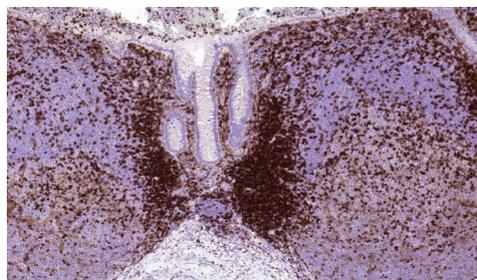
Control tissues: Tonsil, appendix, liver

The CD4 is membrane glycoprotein (58kDa) and it is highly expressed on human T-helper lymphocytes and thymocytes, as well as at lower levels on cells from monocyte lineage. CD4 is useful marker for recognition of different subtypes of lymphocytes and in diagnostic for T-lymphoblastic lymphomas and histiocytic neoplasia.



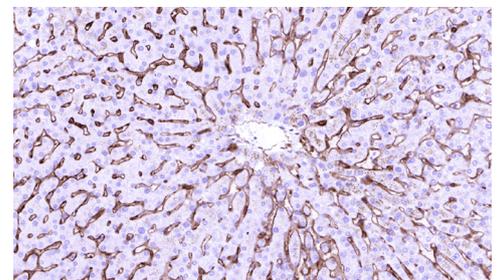
### CD4 - Tonsil

Tonsil section has been stained using CD4 antibody (BSR4) with 1:200 dilution. T-cells have strong membranous label and faint to moderate label was observed from germinal center macrophages.



### CD4 - Tonsil

Tonsil section has been stained using CD4 antibody (BSR4) with 1:200 dilution. T-cells have strong membranous label and faint to moderate label was observed from germinal center macrophages.



### CD4 - Liver

Liver section has been stained using CD4 antibody (BSR4) with 1:200 dilution. Sinusoids of liver and Kupffer cells have moderate to strong staining reaction.

## CD5

Cat#: [BSH-4006-100](#) 100ul, [BSH-4006-1](#) 1 ml

Clonality: Rabbit monoclonal antibody

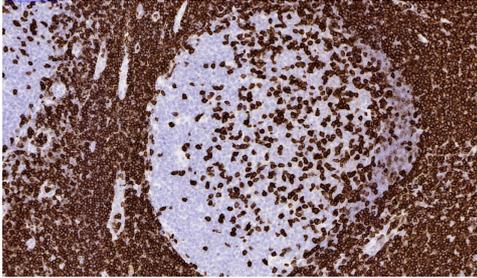
Clone: BSR33

Application: IHC

S/R: human

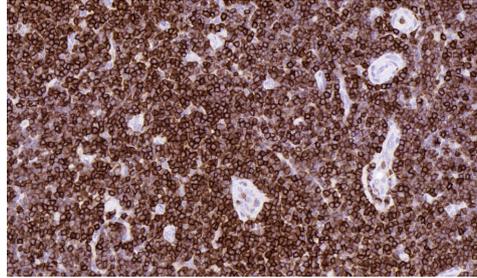
Control tissues: Tonsil, appendix

The CD5 antigen is a transmembrane glycoprotein which is expressed on the most mature human T-cells and expression level of CD5 will be increased during T-cell maturation. CD5 is also expressed in a small subset of normal human B-cells as well. CD5 is expressed in most T-cell lymphomas and leukemias and negative expression of the CD5 in T-cell lymphoma indicates a worse prognosis. In B-cell lymphomas eg. small lymphocytic lymphoma, small-cell lymphoma (CD20+), and mantle cell lymphoma are typically CD5 positive and marginal zone lymphoma and follicular lymphoma, are CD5 negative.



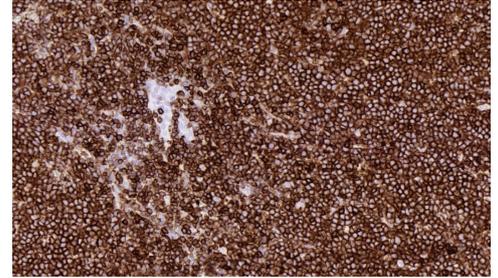
### CD5 - Tonsil

Tonsil have been stained using CD5 antibody (Clone: BSR33) with 1:200 dilution. T-cells have strong membranous label in tonsil and B-cells in the mantle zone show moderate staining reaction. Scattered T-cells in germinal center have strong label.



### CD5 - SLL

Mantle cell lymphoma have been stained using CD5 antibody (Clone: BSR33) with 1:200 dilution. T-cells have strong membranous label in tonsil and B-cells in the mantle zone show moderate staining reaction. SLL have strong membranous label.



### CD5 - Mantle cell lymphoma

Mantle cell lymphoma have been stained using CD5 antibody (Clone: BSR33) with 1:200 dilution. T-cells have strong membranous label in tonsil and B-cells in the mantle zone show moderate staining reaction. MCL have strong membranous label.

## CD7

Cat#: [BSH-2004-100](#) 100ul, [BSH-2004-1](#) 1ml

Clonality: Mouse monoclonal antibody

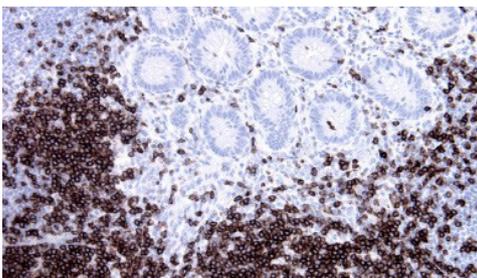
Clone: BS8

Application: IHC-P

S/R: Human

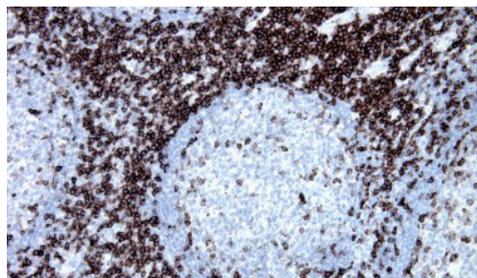
Control tissues: Tonsil, appendix

CD7 transmembrane protein is a member of the immunoglobulin superfamily. This protein is found on thymocytes, mature T cells and NK cells. It plays an essential role in T-cell interactions and also in T-cell/B-cell interaction during early lymphoid development.



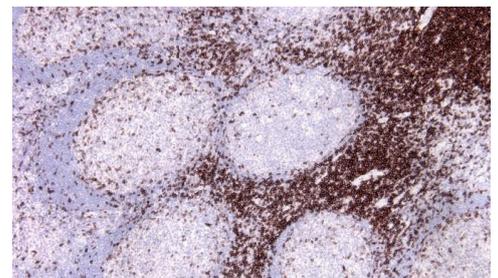
### CD7 - Appendix

Appendix section has been stained using CD7 antibody (Clone: BS8) with 1:250 dilution. CD7 positive T cells have strong membranous label.



### CD7 - Tonsil

Tonsil section has been stained using CD7 antibody (Clone: BS8) with 1:250 dilution. CD7 positive T cells have strong membranous label.



### CD7 - Tonsil

Tonsil section has been stained using CD7 antibody (Clone: BS8) with 1:250 dilution. CD7 positive T cells have strong membranous label.

## CD7

Cat#: BSH-3002-100 100ul, BSH-3002-1 1ml

Clonality: Rabbit monoclonal antibody

Clone: BSR9

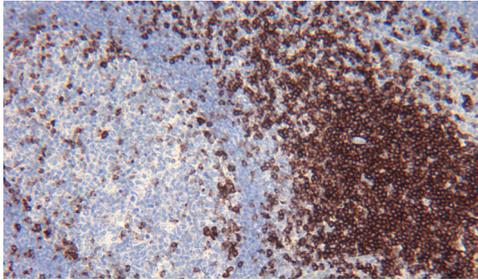
Application: IHC-P

S/R: Human

Control tissues: Tonsil, appendix

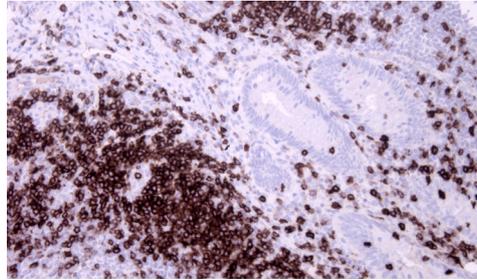


CD7 transmembrane protein is a member of the immunoglobulin superfamily. This protein is found on thymocytes, mature T cells and NK cells. It plays an essential role in T-cell interactions and also in T-cell/B-cell interaction during early lymphoid development.



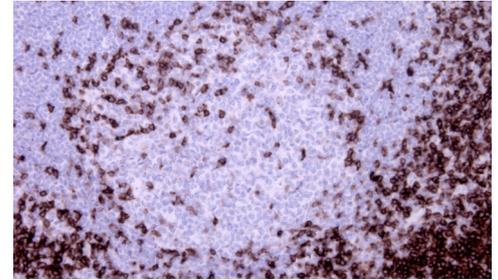
### CD7 - Tonsil

Tonsil section has been stained using CD7 optibody (Clone: BSR9) with 1:250 dilution. CD7 positive T cells have strong membranous label.



### CD7 - Appendix

Appendix section has been stained using CD7 optibody (Clone: BSR9) with 1:250 dilution. CD7 positive T cells and intraepithelial T cells have strong membranous label.



### CD7 - Tonsil

Tonsil section has been stained using CD7 optibody (Clone: BSR9) with 1:250 dilution. CD7 positive T cells have strong membranous label.

## CD8

Cat#: BSH-5001-100 100ul, BSH-5001-1 1ml

Clonality: Rabbit monoclonal antibody

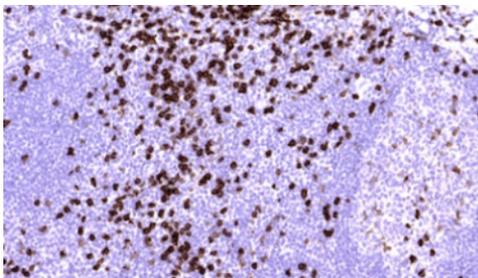
Clone: BSR5

Application: IHC-P, IHC-Fro

S/R: Human

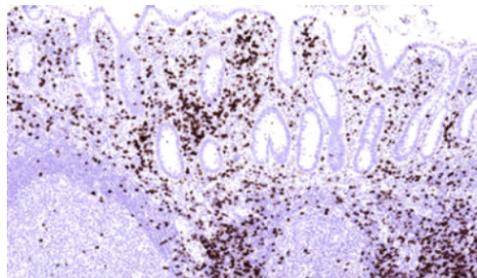
Control tissues: Tonsil, appendix

CD8 T cell surface antigen belongs to the type I membrane protein and it is heterodimer of an alpha and a beta chain linked by two disulfide bonds. CD8 positive T-lymphocytes are cytotoxic cells and it thought to play a role in the process of T-cell mediated killing. CD8 antibody is useful for classification of lymphocytes and malignant lymphomas.



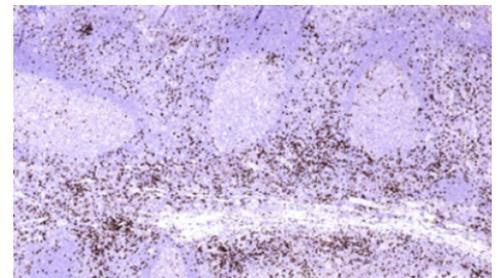
### CD8 - Tonsil

Tonsil section has been stained using CD8 optibody (BSR5) with 1:100 dilution. Cytotoxic T-cells have strong membranous label.



### CD8 - Appendix

Appendix section has been stained using CD8 optibody (BSR5) with 1:100 dilution. Cytotoxic T-cells have strong membranous label.



### CD8 - Tonsil

Tonsil section has been stained using CD8 optibody (BSR5) with 1:100 dilution. Cytotoxic T-cells have strong membranous label.

## CD10

Cat#: [BSH-7021-100](#) 100ul, [BSH-7021-1](#) 1ml

Clonality: Mouse monoclonal antibody

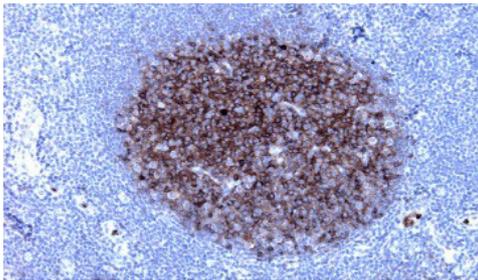
Clone: BS1

Application: IHC-P

S/R: Human, rabbit, mouse, pig, sheep

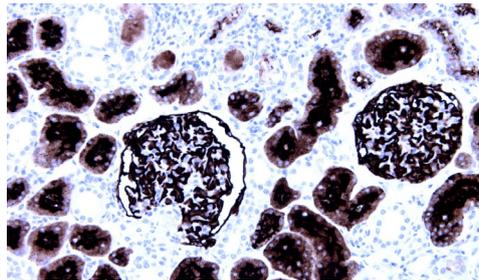
Control tissues: Tonsil, liver and kidney

CD10 is a 100kDa glycoprotein, also designated Common Acute Lymphocytic Leukemia Antigen (CALLA). It is a cell surface enzyme with neutral metalloendopeptidase activity which inactivates a variety of biologically active peptides. CD10 is expressed on the cells of lymphoblastic, Burkitt's, and follicular germinal center lymphomas, and on cells from patients with chronic myelocytic leukemia (CML). It is also expressed on the surface of normal early lymphoid progenitor cells, immature B cells within adult bone marrow and germinal center B cells within lymphoid tissue. CD10 is also present on breast myoepithelial cells, bile canaliculi, fibroblasts, with especially high expression on the brush border of kidney and gut epithelial cells. CD10 is useful especially in the classification of B-cell leukemias and lymphomas.



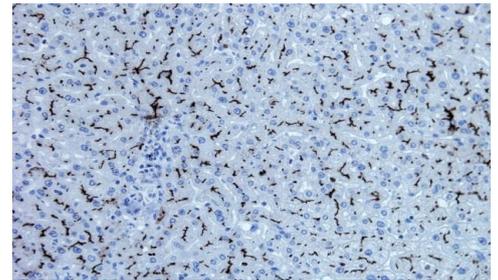
**CD10 - Tonsil**

Tonsil section have been stained using CD10 optibody (Clone: BS1) with 1:300 dilution. Follicular B cells have moderate to strong membranous staining pattern.



**CD10 - Kidney**

Kidney section have been stained using CD10 optibody (Clone: BS1) with 1:300 dilution. Proximal tubules and glomerulus have strong staining.



**CD10 - Liver**

Liver section have been stained using CD10 optibody (Clone: BS1) with 1:300 dilution. Bile canaliculi have strong label without staining in hepatocytes.

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## CD11c

Cat#: [BSH-2016-100](#) 100ul, [BSH-2016-1](#) 1ml

Clonality: Mouse monoclonal antibody

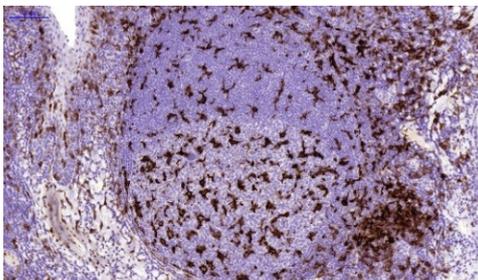
Clone: BS116

Application: IHC-P

S/R: Human,

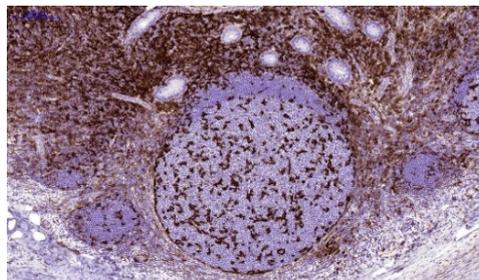
Control tissues: Tonsil, appendix

CD11c is cell surface transmembrane receptor which is mostly expressed on granulocytes, macrophages, monocytes, NK-cells, and some of T- and B-lymphocytes. CD11c is useful especially for diagnosis of hairy cell leukemia (HCL). CD11c can offer great value for detection panel of HCL with DBA.44, CD103 and other HCL markers.



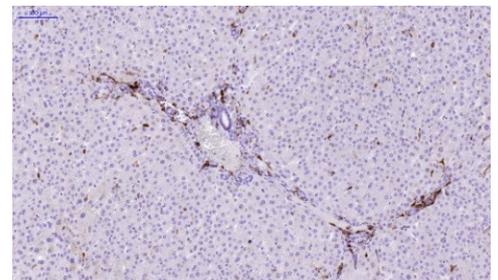
**CD11c - Tonsil**

Tonsil section has been stained using CD11c optibody with 1:200 dilution. Macrophages and monocytes have strong staining reaction.



**CD11c - Appendix**

Appendix section has been stained using CD11c optibody with 1:200 dilution. Macrophages and monocytes have strong staining reaction.



**CD11c - Liver**

Liver section has been stained using CD11c optibody with 1:200 dilution. Macrophages and Kupffer cells have strong staining reaction.

## CD14

Cat#: [BSH-7019-100](#) 100ul, [BSH-7019-1](#) 1ml

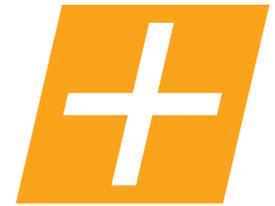
Clonality: Mouse monoclonal antibody

Clone: BS9

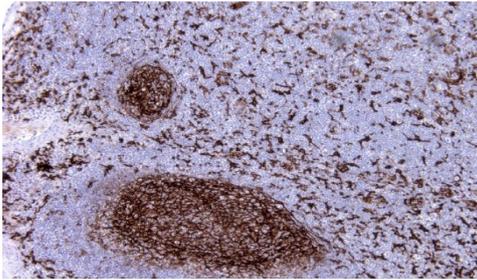
Application: IHC-P

S/R: Human

Control tissues: Tonsil, liver and appendix

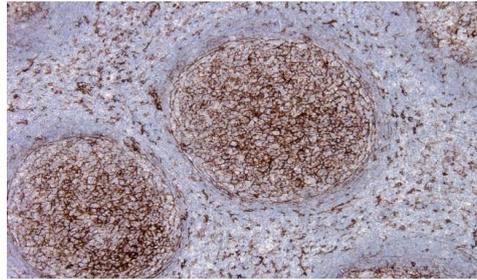


CD14 antigen is a GPI-linked glycoprotein with a molecular weight of 55kD. The CD14 antigen is expressed on cells of the myelomonocytic lineage including monocytes, macrophages, follicular dendritic cells and Langerhans cells. Low expression is observed on neutrophils and on human B cells. CD14 antigen is a receptor for bacterial lipopolysaccharide (LPS, endotoxin) and the lipopolysaccharide binding protein (LBP). LBP and CD14 antigen serves two physiological roles. These proteins act as opsonin and opsonic receptor, respectively, to promote the phagocytic uptake of bacteria or LPS coated particles by macrophages.



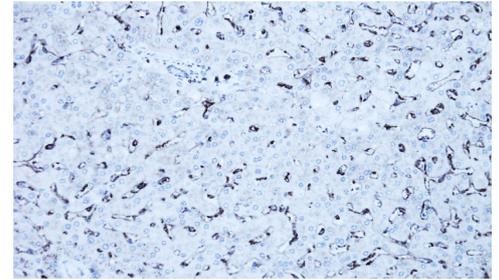
**CD14 - Tonsil**

Tonsil section have been stained using CD14 optibody (Clone: BS9) with 1:200 dilution. Follicular dendritic cells have strong label as well as macrophages in perifollicular area.



**CD14 - Tonsil**

Tonsil section have been stained using CD14 optibody (Clone: BS9) with 1:200 dilution. Follicular dendritic cells have strong label as well as macrophages in perifollicular area.



**CD14 - Liver**

Liver section has been stained using CD14 optibody (Clone: BS9) with 1:200 dilution. Kupffer cells have strong to moderate label.

## CD20

Cat#: [BSH-2006-100](#) 100ul, [BSH-2006-1](#) 1ml

Clonality: Mouse monoclonal antibody

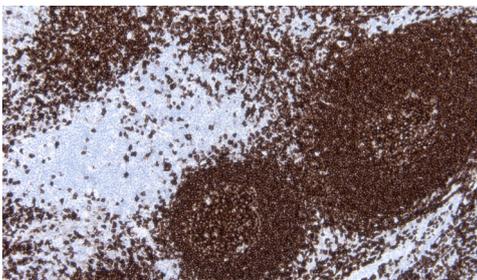
Clone: BS6

Application: IHC-P

S/R: Human

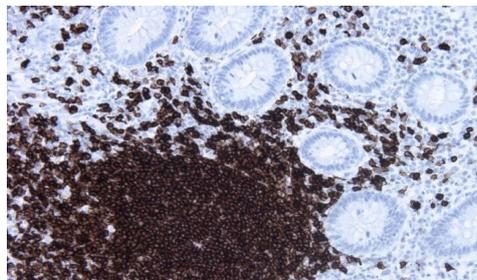
Control tissues: Tonsil and appendix

The CD20 antigen is present on human pre B-lymphocytes and on B-lymphocytes at all stages of maturation, except on plasma cells. Low level expression of the CD20 antigen has been detected on subpopulation of T-lymphocytes. CD20 is expressed widely in the large majority of cases of B-cell leukemia and lymphoma. The CD20 molecule is involved in regulation of B-cell differentiation, presumably via its reported function as a Ca<sup>++</sup> channel subunit. Together with CD79a, CD20 is one of the most important markers for the identification and classification of B-cell neoplasms.



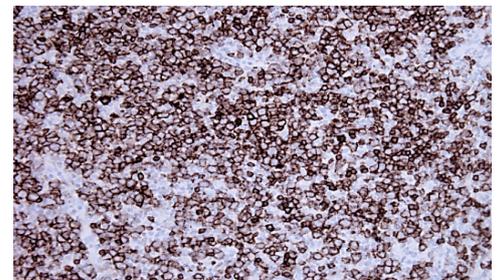
**CD20 - Tonsil**

Tonsil section has been stained using CD20 optibody (Clone: BS6) with 1:250 dilution. B cells have strong membranous label. Mantle zone B cells and follicular B cells have strongly stained with membranous staining pattern.



**CD20 - Appendix**

Appendix section has been stained using CD20 optibody (Clone: BS6) with 1:250 dilution. B cells have strong membranous label.



**CD20 - DLBCL**

Lymph node tissue with DLBCL has been stained using CD20 optibody (Clone: BS6) with 1:250 dilution. Neoplastic cells have strong membranous label.

## CD22

Cat#: [BSH-2009-100](#) 100ul, [BSH-2009-1](#) 1ml

Clonality: Mouse monoclonal antibody

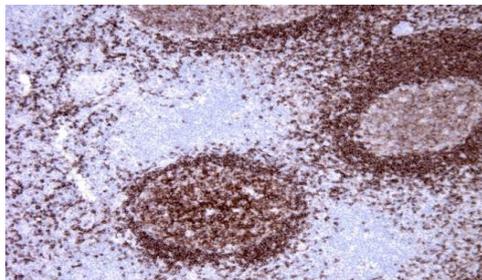
Clone: BS100

Application: IHC-P

S/R: Human

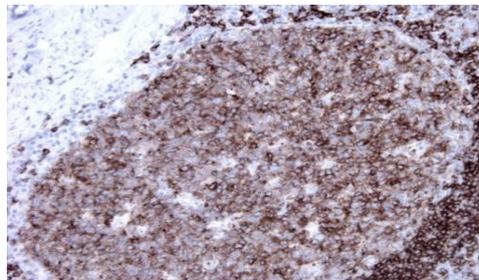
Control tissues: Tonsil and appendix

CD22 protein may be involved in the localization of B cells in lymphoid tissues. CD22 is expressed in the cytoplasm and cell membrane of B cells. CD22 is especially useful in diagnostics of hairy cell leukemia and classification of the B-cell lymphomas.



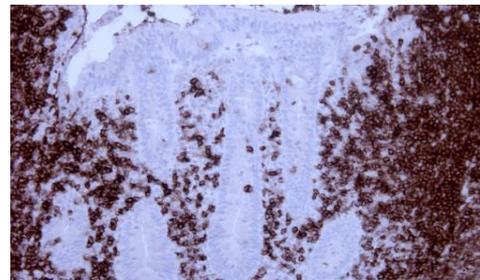
### CD22 - Tonsil

Tonsil section have been stained using CD22 optibody (Clone: BS100) with 1:200 dilution. Mantle zone B cells have strong membranous label and maturing B cells in germinal center have moderate cytoplasmic and membranous label.



### CD22 - Tonsil

Tonsil section has been stained using CD22 optibody (Clone: BS100) with 1:200 dilution. Mantle zone B cells have strong membranous label.



### CD22 - Appendix

Appendix section have been stained using CD22 optibody (Clone: BS100) with 1:200 dilution. B cells have strong membranous label.

## CD23

Cat#: [BSH-3004-100](#) 100ul, [BSH-3004-1](#) 1ml

Clonality: Mouse monoclonal antibody

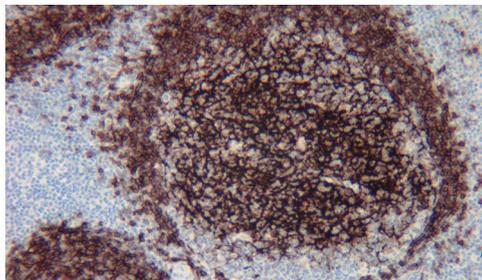
Clone: BS20

Application: IHC-P

S/R: Human

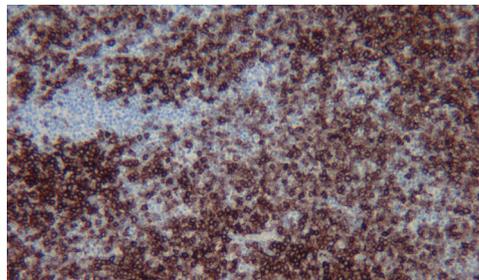
Control tissues: Tonsil and appendix

The human leukocyte differentiation antigen CD23 (FCER2) is a key molecule for B-cell activation and growth. It is expressed on most mature B cells and can also be found on the surface of T cells, macrophages, platelets and EBV transformed B-lymphoblasts. Expression of CD23 has been detected in neoplastic cells from cases of B-cell chronic lymphocytic leukemia. CD23 is expressed by B cells in the follicular mantle zone B cells and follicular dendritic cells. CD23 is distinct from the high affinity IgE receptors found on basophils and mast cells, which mediate allergic reactions.



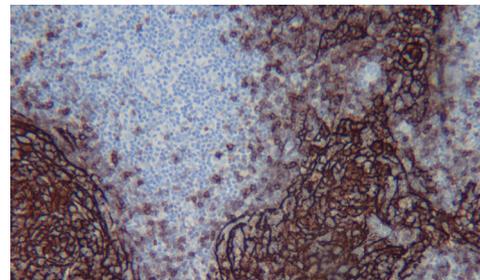
### CD23 - Tonsil

Tonsil section have been stained using CD23 optibody (Clone: BS20) with 1:200 dilution. B cells of mantle zone have strong or moderate membranous label and follicular dendritic cells stained strongly.



### CD23 - B-cell CLL

Tumor section have been stained using CD23 optibody (Clone: BS20) with 1:200 dilution. Neoplastic cells have strong to moderate label.



### CD23 - Follicular lymphoma

Follicular lymphoma section have been stained using CD23 optibody (Clone: BS20) with 1:200 dilution. Dendritic cells have strong label.

## CD31

Cat#: [BSH-7112-100](#) 100ul, [BSH-7112-1](#) 1ml

Clonality: Mouse monoclonal antibody

Clone: BS50

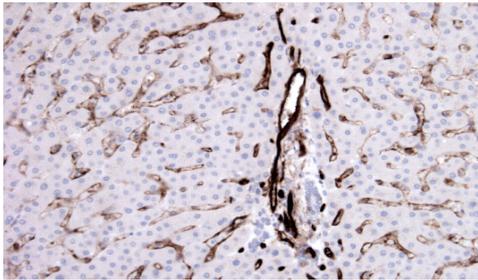
Application: IHC-P

S/R: Human

Control tissues: Tonsil and liver

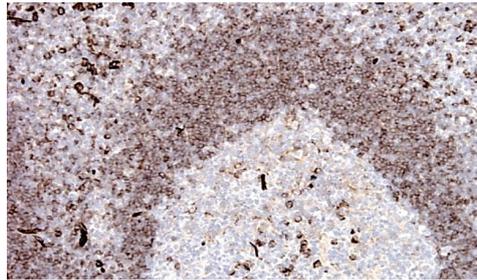


CD31, also known as platelet endothelial cell adhesion molecule 1 (PECAM1), is a type I integral membrane glycoprotein and a member of the immunoglobulin superfamily of cell surface receptors. It is constitutively expressed on the surface of endothelial cells, and concentrated at the junction between them. The antibody reacts with the murine form of the Platelet-Endothelial Cell Adhesion Molecule. The reactivity of the antibody is restricted to the isoform of the molecule that is electively expressed by endothelial cells. The antigen is predominantly present at the lateral borders of endothelial cells as described for human PECAM-1. It is also weakly expressed on many peripheral lymphoid cells and platelets. CD31 has been used to measure angiogenesis in association with tumor recurrence.



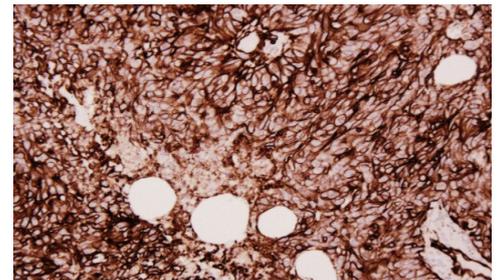
### CD31 - Liver

Liver section has been stained using CD31 antibody (Clone: BS50) with 1:200 dilution. Sinusoids of liver have been stained moderate and portal veins.strong intensity.



### CD31 - Tonsil

Tonsil section has been stained using CD31 antibody (Clone: BS50) with 1:200 dilution. Mantle zone lymphocytes have moderate label.



### CD31 - Angiosarcoma

Angiosarcoma section has been stained using CD31 antibody (Clone: BS50) with 1:200 dilution. Neoplastic cells have strong label.

## CD34

Cat#: [BSH-2008-100](#) 100ul, [BSH-2008-1](#) 1ml

Clonality: Mouse monoclonal antibody

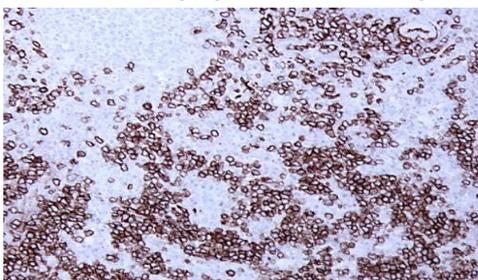
Clone: BS72

Application: IHC-P

S/R: Human

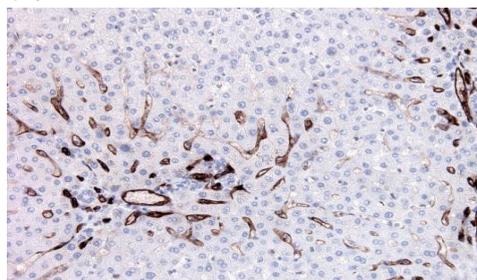
Control tissues: Tonsil, liver and appendix

CD34 is a transmembrane glycoprotein with a molecular mass of approximately 110 kD that is selectively expressed on human hematopoietic progenitor cells, endothelial cells and some fibroblasts. It could act as a scaffold for the attachment of lineage specific glycans, allowing stem cells to bind to lectins expressed by stromal cells or other marrow components. CD34 is highly expressed on hematopoietic progenitors, as well as on endothelial cells. CD34 has been used to measure angiogenesis, which reportedly predicts tumor recurrence.



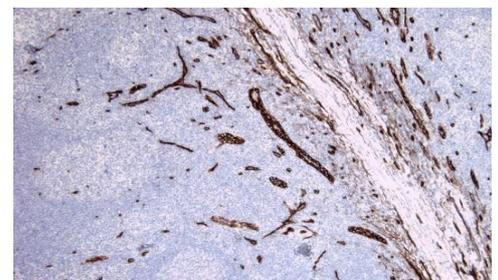
### CD34 - Acute lymphoblastic leukaemia

Spleen section has been stained using CD34 antibody (Clone: BS72) with 1:200 dilution. Neoplastic cells have a strong label.



### CD34 - Liver

Liver section has been stained using CD34 antibody (Clone: BS72) with 1:200 dilution. Sinusoids of liver have been stained moderate in near of the portal veins. Portal veins stained with strong intensity.



### CD34 - Tonsil

Tonsil section has been stained using CD34 antibody (Clone: BS72) with 1:200 dilution. Vascular endothelia have been stained strongly.

## CD38

Cat#: [BSH-7347-100](#) 100ul, [BSH-7347-1](#) 1ml

Clonality: Mouse monoclonal antibody

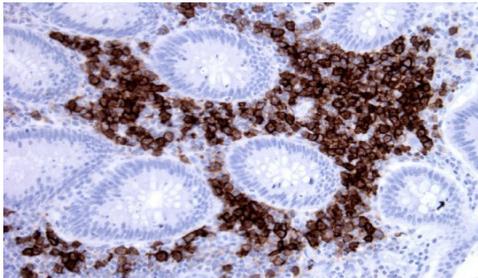
Clone: BS3

Application: IHC-P

S/R: Human

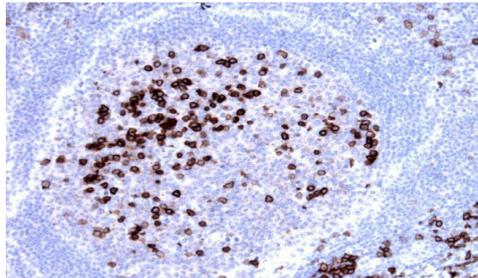
Control tissues: Tonsil and appendix

CD38 is a type II integral membrane glycoprotein which is present on early B- and T-cell lineages and activated B and T cells but is absent from most mature resting peripheral lymphocytes. CD38 is also found on thymocytes, pre-B cells, germinal center B cells, mitogen-activated T cells, monocytes and Ig-secreting plasma cells. CD38 acts as a NAD glycohydrolase in T lymphocytes. On hematopoietic cells CD38 induces activation, proliferation, and differentiation of mature T and B cells and mediates apoptosis of myeloid and lymphoid progenitor cells. CD38 also plays a role in maintaining survival of an invariant NK T (iNKT) cell subset that preferentially contributes to the maintenance of immunological tolerance.



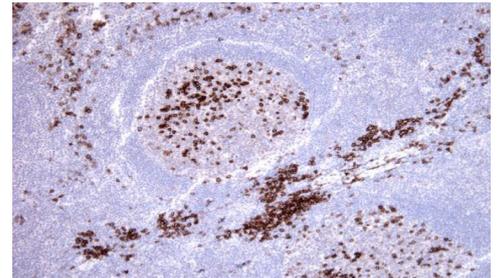
### CD38 - Appendix

Appendix section has been stained using CD38 optibody (Clone: BS3) with 1:200 dilution. Strong membranous staining observed from plasma cells.



### CD38 - Tonsil

Tonsil section have been stained using CD38 optibody (Clone: BS3) with 1:200 dilution. Strong membranous staining observed from scattered B cells in germinal center and plasma cells.



### CD38 - Tonsil

Tonsil section have been stained using CD38 optibody (Clone: BS3) with 1:200 dilution. Strong membranous staining observed from scattered B cells in germinal center and plasma cells.

## CD38

Cat#: [BSH-3009-100](#) 100ul, [BSH-3009-1](#) 1ml

Clonality: Rabbit monoclonal antibody

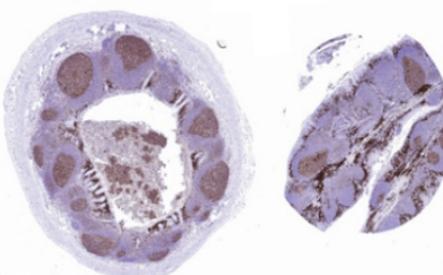
Clone: BSR7

Application: IHC-P, IHC-Fro

S/R: Human

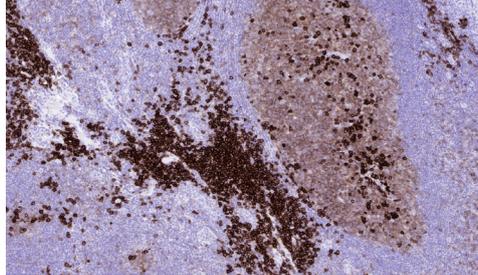
Control tissues: Tonsil and appendix

CD38 is a type II integral membrane glycoprotein which is present on early B and T cell lineages and activated B and T cells but is absent from most mature resting peripheral lymphocytes. CD38 is also found on thymocytes, pre-B cells, germinal center B cells, mitogen-activated T cells, monocytes and Ig-secreting plasma cells. On hematopoietic cells CD38 induces activation, proliferation, and differentiation of mature T and B cells and mediates apoptosis of myeloid and lymphoid progenitor cells. CD38 marker is useful for lymphoma diagnostic eg. using in plasmacytoma diagnostic.



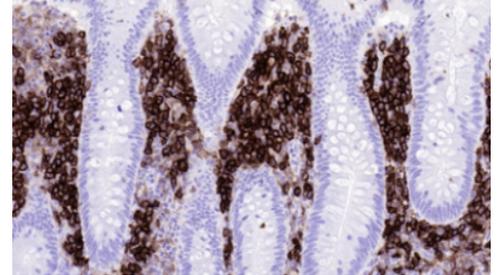
### CD38 - Appendix

Appendix section has been stained using CD38 optibody (BSR7) with 1:200 dilution. Plasma cells have strong membranous label. Maturing B-cells in germinal center stained with moderate membranous staining pattern.



### CD38 - Tonsil

Tonsil section has been stained using CD38 optibody (BSR7) with 1:200 dilution. Plasma cells have strong membranous label. Maturing B-cells in germinal center stained with moderate membranous staining pattern.



### CD38 - Appendix

Appendix section has been stained using CD38 optibody (BSR7) with 1:200 dilution. Plasma cells have strong membranous label. Maturing B-cells in germinal center stained with moderate membranous staining pattern.

## CD43

Cat#: [BSH-2012-100](#) 100ul, [BSH-2012-1](#) 1ml

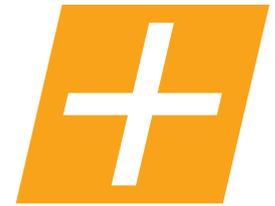
Clonality: Mouse monoclonal antibody

Clone: BS62

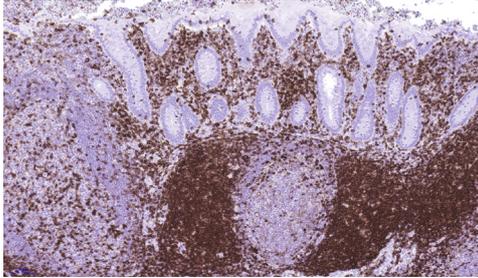
Application: IHC-P

S/R: Human

Control tissues: Tonsil and appendix

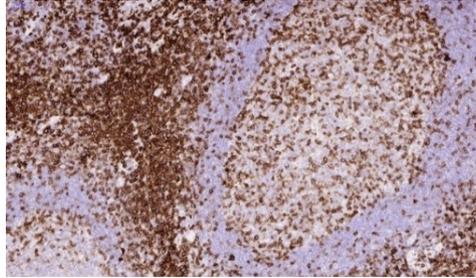


CD43 (leukosialin, sialophorin) is a transmembrane mucin-like glycoprotein which expressed in plasma membrane especially in T-lymphocytes, some B-cells and cells from myelomonolneage. It is useful for lymphoma diagnostic and it expressed in most T-cell lymphomas and some B-cell lymphomas.



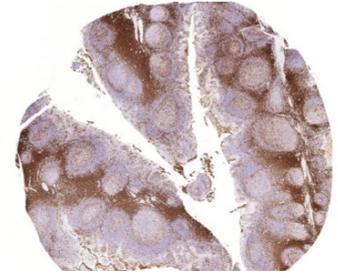
### CD43 -Appendix

Appendix section has been stained using CD43 optibody (BS62) with 1:200 dilution. T-cells have strong membranous label.



### CD43 - Tonsil

Tonsil section has been stained using CD43 optibody (BS62) with 1:200 dilution. T-cells have strong membranous label.



### CD43 - Tonsil

Tonsil section has been stained using CD43 optibody (BS62) with 1:200 dilution. T-cells have strong membranous label.

## CD68

Cat#: [BSH-2007-100](#) 100ul, [BSH-2007-1](#) 1ml

Clonality: Mouse monoclonal antibody

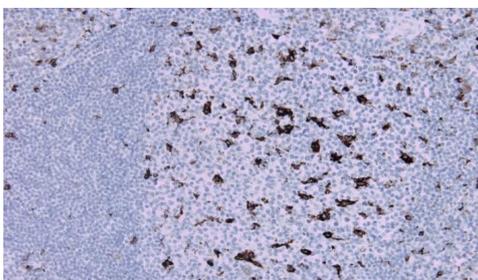
Clone: BS79

Application: IHC-P

S/R: Human

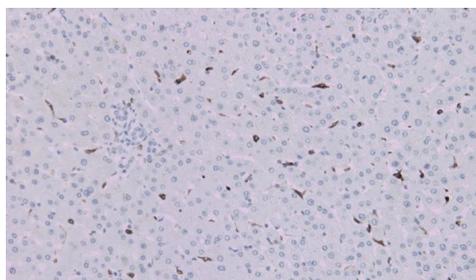
Control tissues: Tonsil and liver

This gene encodes a 110-kD transmembrane glycoprotein that is highly expressed by human monocytes and tissue macrophages. It is a member of the lysosomal/endosomal-associated membrane glycoprotein (LAMP) family. The protein primarily localizes to lysosomes and endosomes with a smaller fraction circulating to the cell surface. It is a type I integral membrane protein with a heavily glycosylated extracellular domain and binds to tissue- and organ-specific lectins or selectins. The protein is also a member of the scavenger receptor family. Scavenger receptors typically function to clear cellular debris, promote phagocytosis, and mediate the recruitment and activation of macrophages. Alternative splicing results in multiple transcripts encoding different isoforms.



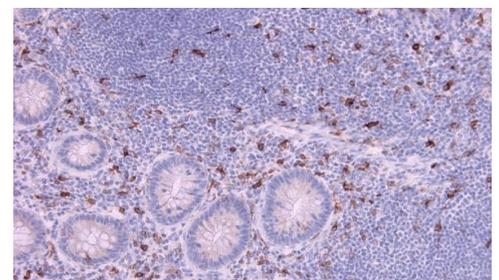
### CD68 -Tonsil

Tonsil section has been stained using CD68 optibody (Clone: BS79) with 1:200 dilution. Magrophages have a strong label.



### CD68 - Liver

Liver section has been stained using CD68 optibody (Clone: BS79) with 1:200 dilution. Kupffer cells have a strong label.



### CD68 - Appendix

Appendix section has been stained using CD68 optibody (Clone: BS79) with 1:200 dilution. Scattered magrophages have a strong label.

## CD79a

Cat#: BSH-3007-100 100ul, BSH-3007-1 1ml

Clonality: Rabbit monoclonal antibody

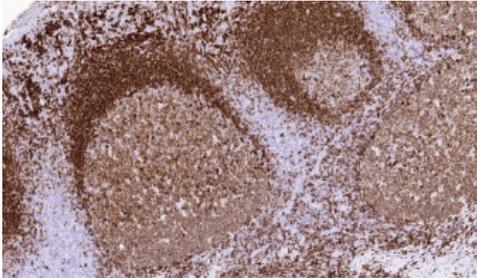
Clone: BSR20

Application: IHC-P, IHC-Fro

S/R: Human

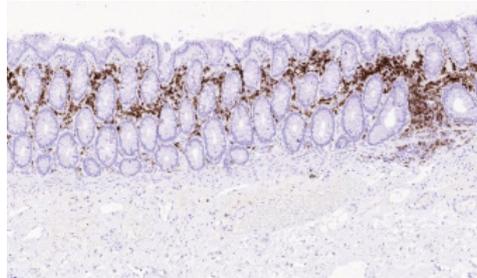
Control tissues: Tonsil and appendix

The CD79 protein is a heterodimer with two CD79a and CD79b phosphoproteins. CD79a is specific for B-cells. The antigen appearing before the pre-B cell stage and it is still expressed at the plasma cell stage. Together with CD20, CD79a is one of the most important markers for B-cell neoplasms.



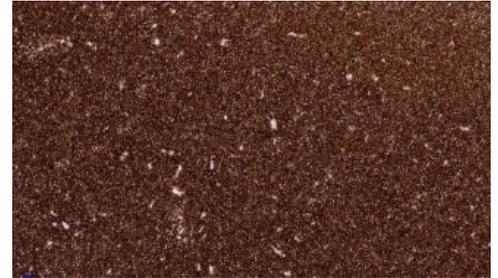
### CD79a - Tonsil

Tonsil section has been stained using CD79a antibody (BSR20) with 1:200 dilution. B-cells have strong membranous label in tonsil marginal zone and subset of maturing B-cells in germinal center.



### CD79a - Colon

Colon section has been stained using CD79a antibody (BSR20) with 1:200 dilution. Plasma cells have strong membranous staining pattern.



### CD79a - DLBCL

DLBCL section has been stained using CD79a antibody (BSR20) with 1:200 dilution. DLBCL cells have strong and intensive label.

## CD105/Endoglin

Cat#: BSH-7631-100 100ul, BSH-7631-1 1ml

Clonality: Mouse monoclonal antibody

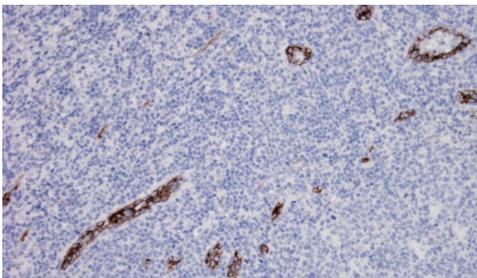
Clone: BS71

Application: IHC-P

S/R: Human

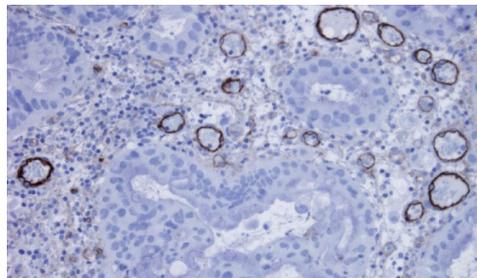
Control tissues: Tonsil and appendix

This gene encodes a homodimeric transmembrane protein which is a major glycoprotein of the vascular endothelium. This protein is a component of the transforming growth factor beta receptor complex and it binds TGFB1 and TGFB3 with high affinity. Mutations in this gene cause hereditary hemorrhagic telangiectasia, also known as Osler-Rendu-Weber syndrome 1, an autosomal dominant multisystemic vascular dysplasia. Endoglin is highly expressed especially in vascular tumor endothelia.



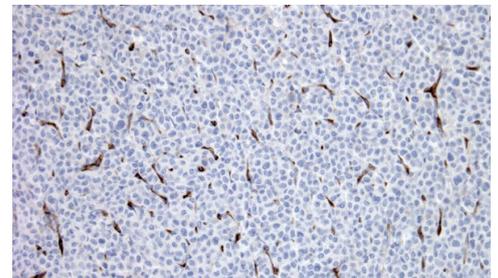
### Endoglin - Tonsil

Tonsil section has been stained using endoglin antibody (Clone: BS71) with 1:200 dilution. Endoglin stains vascular endothelia with moderate to strong intensity.



### Endoglin - Urinary bladder carcinoma

Urinary bladder carcinoma section has been stained using endoglin antibody (Clone: BS71) with 1:200 dilution. Endoglin stains vascular endothelia with moderate to strong intensity.



### Endoglin - Ductal breast adenocarcinoma

Ductal breast adenocarcinoma section has been stained with endoglin antibody (Clone: BS71) with 1:200 dilution. Vascular endothelia are strongly stained in the intratumoral area.

## CEA

Cat#: [BSH-7437-100](#) 100ul, [BSH-7437-1](#) 1ml

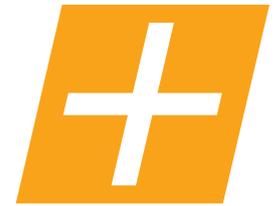
Clonality: Mouse monoclonal antibody

Clone: BS33

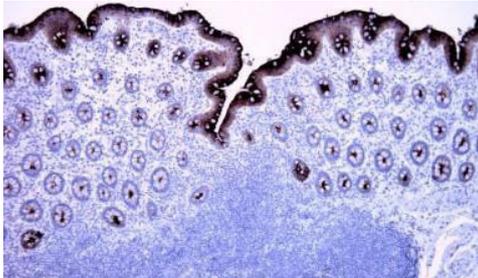
Application: IHC-P

S/R: Human

Control tissues: Appendix, colon and liver (negative)

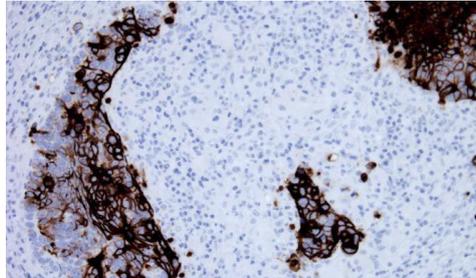


CEA are useful in identifying the origin of various metastatic adenocarcinomas and in distinguishing pulmonary adenocarcinomas (60 to 70% are CEA+) from pleural mesotheliomas (rarely or weakly CEA+). The carcinoembryonic antigen (CEA) is a member of a large family of glycoproteins and a useful tumor marker for adenocarcinoma. It is found in adenocarcinomas of endodermally derived digestive system epithelium and fetal colon.



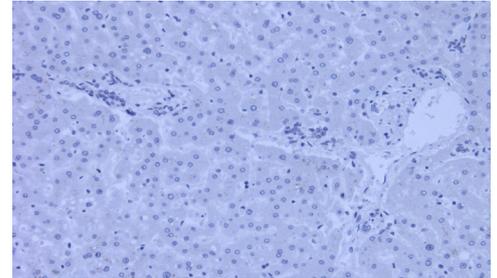
### CEA - Appendix

Appendix section has been stained using CEA optibody (Clone: BS33) with 1:250 dilution. Luminal part of columnar epithelia stained strongly.



### CEA - Colon carcinoma metastase

Colon carcinoma section have been stained using CEA optibody (Clone: BS33) with 1:250 dilution. Metastase of colon carcinoma in lymph node stained strongly with CEA optibody.



### CEA - Liver (Negative)

Liver section have been stained using CEA optibody (Clone: BS33) with 1:250 dilution. No staining of the liver bile ducts (negative control).

## Cytokeratin PAN

Cat#: [BSH-7124-100](#) 100ul, [BSH-7124-1](#) 1ml

Clonality: Mouse monoclonal antibody

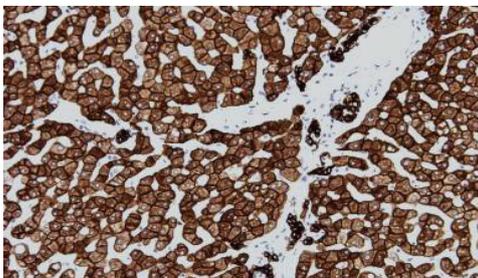
Clone: BS5

Application: IHC-P

S/R: Human, sheep, pig, dog

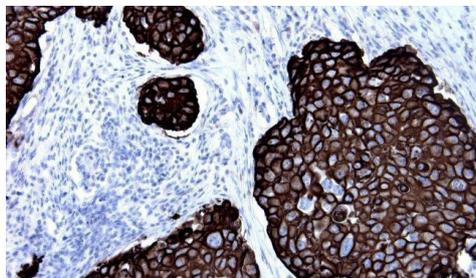
Control tissues: Appendix and liver

Cytokeratins are classified into one of two classes, type I (acidic polypeptides) and type II (basic polypeptides). Cytokeratins play a critical role in differentiation and tissue specialization and function to maintain the overall structural integrity of epithelial cells. Cytokeratins have been found to be useful markers of tissue differentiation which is directly applicable to the characterization of malignant tumors.



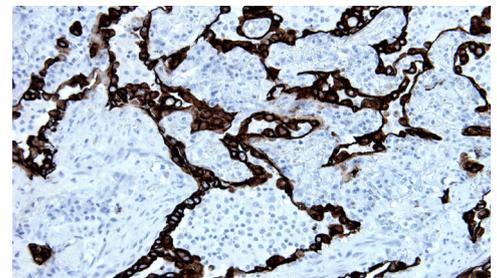
### CKpan - Liver

Liver section has been stained using CKpan optibody (Clone: BS5) with 1:200 dilution. Hepatocytes have membranous staining pattern with moderate label. Bile ducts have strong label.



### CKpan - Ductal breast adenocarcinoma

Ductal breast adenocarcinoma section has been stained using CKpan optibody (Clone: BS5) with 1:200 dilution. CKpan stains carcinoma cells intensively.



### CKpan - Lung adenocarcinoma

Lung adenocarcinoma section has been stained using CKpan optibody (Clone: BS5) with 1:200 dilution. CKpan stains neoplastic cells strongly.

## CK5 (CK-HMW)

Cat#: BSH-7123-100 100ul, BSH-7123-1 1ml

Clonality: Mouse monoclonal antibody

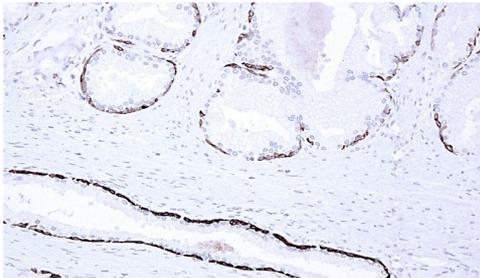
Clone: BS42

Application: IHC-P

S/R: Human

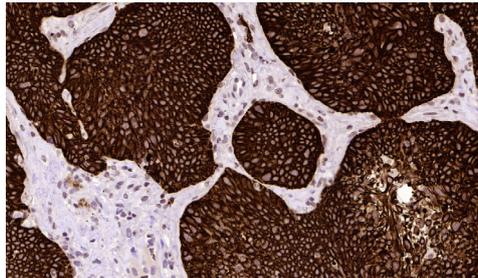
Control tissues: Esophagus, prostate and tonsil

CK5 (cytokeratin 5) is a member of the keratin gene family. Biochemically, most members of the CK family fall into one of two classes, type I (acidic polypeptides) and type II (basic polypeptides). The type II cytokeratins consist of basic or neutral proteins which are arranged in pairs of heterotypic keratin chains coexpressed during differentiation of simple and stratified epithelial tissues. This type II cytokeratin is specifically expressed in the basal layer of the epidermis with family member KRT14. The type II cytokeratins are clustered in a region of chromosome 12q12-q13. At least one member of the acidic family and one member of the basic family is expressed in all epithelial cells. Cytokeratin 5 is expressed in normal basal cells.



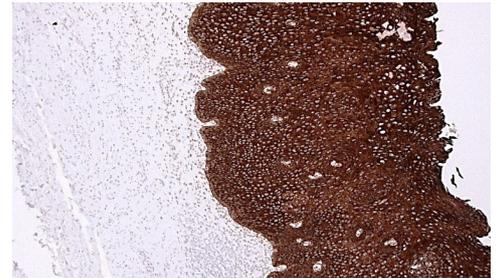
### CK5 - Prostate hyperplasia

Prostate section has been stained using CK5 antibody (Clone: BS42) with 1:200 dilution. Prostate basal cells stained strongly.



### CK5 - Lung squamous cell carcinoma

Lung squamous cell carcinoma section has been stained using CK5 antibody (Clone: BS42) with 1:200 dilution. Lung squamous cell carcinoma stained intensively.



### CK5 - Esophagus

Esophagus section has been stained using CK5 antibody (Clone: BS42) with 1:200 dilution. All layers of squamous epithelium have strong label.

## CK5 (CK-HMW)

Cat#: BSH-3011-100 100ul, BSH-3011-1 1ml

Clonality: Rabbit monoclonal antibody

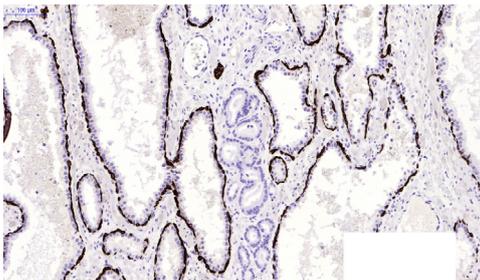
Clone: BSR55

Application: IHC-P, IHC-Fro

S/R: Human

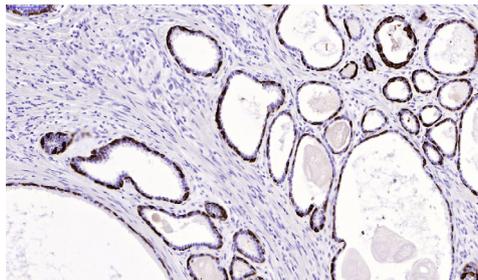
Control tissues: Esophagus, prostate and tonsil

CK5 (cytokeratin 5) is a member of the keratin gene family. Biochemically, most members of the CK family fall into one of two classes, type I (acidic polypeptides) and type II (basic polypeptides). The type II cytokeratins consist of basic or neutral proteins which are arranged in pairs of heterotypic keratin chains coexpressed during differentiation of simple and stratified epithelial tissues. This type II cytokeratin is specifically expressed in the basal layer of the epidermis with family member KRT14. The type II cytokeratins are clustered in a region of chromosome 12q12-q13. At least one member of the acidic family and one member of the basic family is expressed in all epithelial cells. Cytokeratin 5 is expressed in normal basal cells.



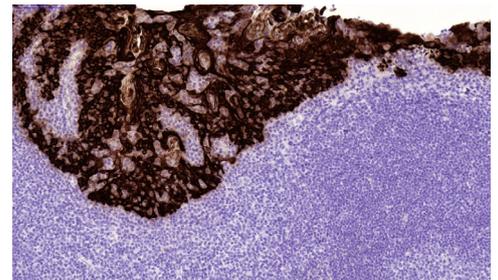
### CK5 - Prostate adenocarcinoma

Prostate adenocarcinoma section has been stained using CK5 antibody (BSR55) with 1:200 dilution. Strong cytoplasmic label were observed from prostate glands but prostate adenocarcinoma are without label.



### CK5 - Prostate adenocarcinoma

Prostate adenocarcinoma section has been stained using CK5 antibody (BSR55) with 1:200 dilution. Strong cytoplasmic label were observed from prostate glands.



### CK5 - Tonsil

Tonsil section has been stained using CK5 antibody (BSR55) with 1:200 dilution. Tonsil epithelia have strong label.

## CK5 / CK14 cocktail

Cat#: BSH-3012-100 100ul, BSH-3012-1 1ml

Clonality: Rabbit monoclonal antibody cocktail

Clone: BSR55 & BSR47

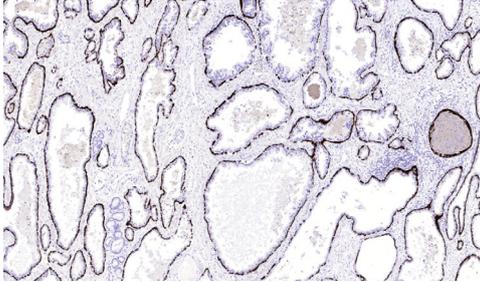
Application: IHC-P

S/R: Human

Control tissues: Appendix and tonsil

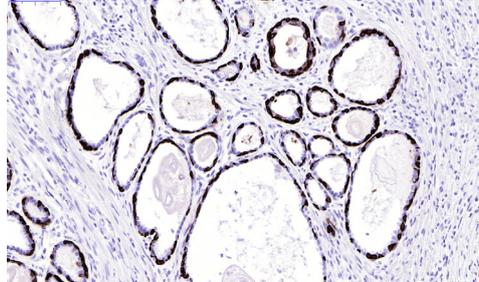


This antibody cocktail consists of cytokeratin 5 and cytokeratin 14 rabbit monoclonal antibodies. It is useful cocktail for demonstrating basal cells or basal cell neoplasia especially in differentiation diagnostics of prostate hyperplasia and prostate adenocarcinoma. It is also useful for example diagnostics of lung squamous cell carcinoma.



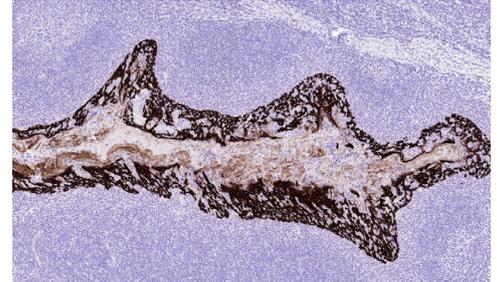
### CK5/CK14 - Prostate adenocarcinoma

Prostate adenocarcinoma section has been stained using CK5/CK14 antibody (BSR55 & BSR47) with 1:200 dilution. Strong cytoplasmic label were observed from prostate glands but prostate adenocarcinoma are without label.



### CK5/CK14 - Prostate adenocarcinoma

Prostate adenocarcinoma section has been stained using CK5/CK14 antibody (BSR55 & BSR47) with 1:200 dilution. Strong cytoplasmic label were observed from prostate glands.



### CK5/CK14 - Tonsil

Tonsil section has been stained using CK5/CK14 antibody (BSR55 & BSR47) with 1:200 dilution. Tonsil epithelia have strong label.

## CK8 (CK-HMW)

Cat#: BSH-4000-100 100ul, BSH-4000-1 1ml

Clonality: Rabbit monoclonal antibody

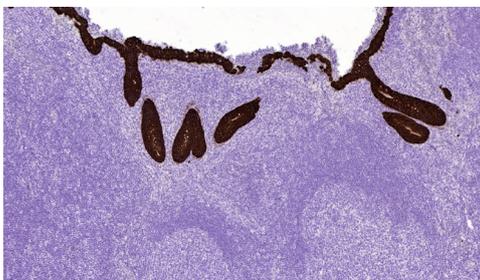
Clone: BSR15

Application: IHC-P

S/R: Human, mouse, porcine, sheep

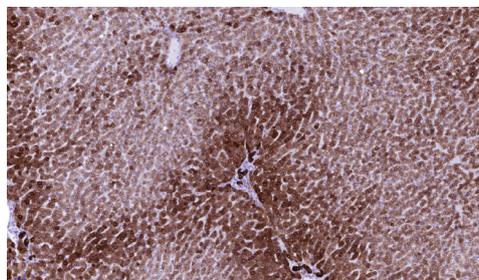
Control tissues: Liver, appendix and tonsil

Cytokeratin 8, also known as CK8, is a member of the low molecular weight type II keratin family. Type I and type II keratins heteropolymerize to form intermediate-sized filaments in the cytoplasm of epithelial cells. CK8 typically dimerizes with CK18 to form an intermediate filament in simple single-layered epithelial cells. It is useful for especially diagnostic of most non-squamous epithelial tumors. squamous tumors are negative for this antibody as a rule.



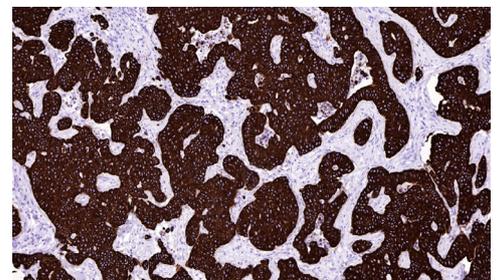
### CK8 - Tonsil

Tonsil section has been stained using CK8 antibody (Clone: BSR15) with 1:200 dilution. Epithelia have strong cytoplasmic label.



### CK8 - Liver

Liver section has been stained using CK8 antibody (Clone: BSR15) with 1:200 dilution. Hepatocytes and bile ducts have strong cytoplasmic label.



### CK8 - Ductal breast carcinoma

Ductal breast carcinoma section has been stained using CK8 antibody (Clone: BSR15) with 1:200 dilution. Ductal breast carcinoma cells stained intensively.

## CK14 (CK-HMW)

Cat#: BSH-3013-100 100ul, BSH-3013-1 1ml

Clonality: Rabbit monoclonal antibody

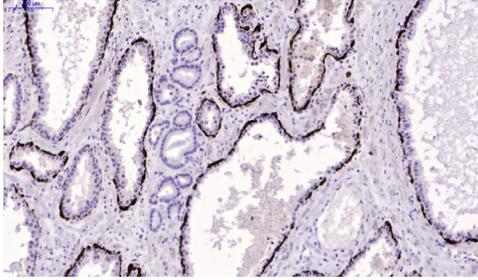
Clone: BSR47

Application: IHC-P

S/R: Human

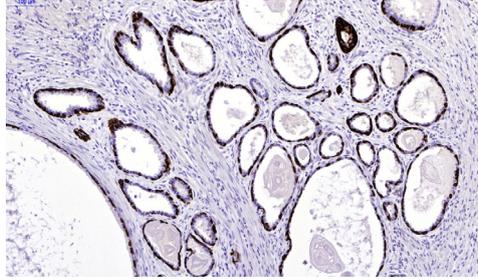
Control tissues: Esophagus, prostate and tonsil

Cytokeratin 14 (CK14) is an acidic type I human intermediate filament protein. It is mostly found in basal cells of squamous epithelia, myoepithelium, some glandular epithelia and mesothelial cells. Molecular weight of CK14 is 50 kDa, and it usually pairs with CK5, which is a type II (basic) cytokeratin. In neoplastic cells, CK14 is a useful marker especially in identification of basal cell epithelium in prostate and myoepithelium in breast. It is also useful for detecting squamous cell carcinomas. CK5 and CK14 antibodies can be used as a cocktail as well.



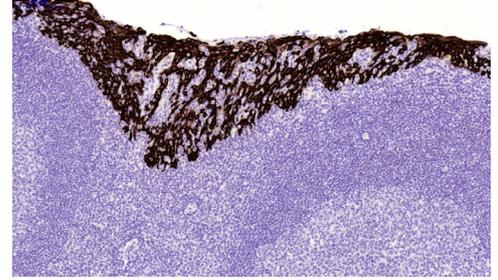
**CK14 - Prostate adenocarcinoma**

Prostate adenocarcinoma section has been stained using CK14 antibody (Clone: BSR47) with 1:200 dilution. Strong cytoplasmic labeling was observed from normal prostate glands but prostate adenocarcinoma is without labeling.



**CK14 - Prostate adenocarcinoma**

Prostate adenocarcinoma section has been stained using CK14 antibody (Clone: BSR47) with 1:200 dilution. Strong cytoplasmic labeling was observed from normal prostate glands.



**CK14 - Tonsil**

Tonsil section has been stained using CK14 antibody (Clone: BSR47) with 1:200 dilution. Tonsil epithelium has strong labeling.

## CK17

Cat#: BSH-7311-100 100ul, BSH-7311-1 1ml

Clonality: Mouse monoclonal antibody

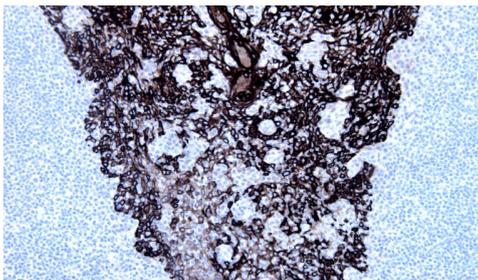
Clone: BS55

Application: IHC-P

S/R: Human

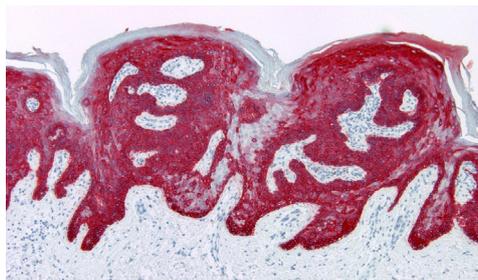
Control tissues: Skin and tonsil

CK17, also known as KRT17, is the type I intermediate filament chain keratin 17. It is found in nail beds, hair follicles, sebaceous glands, and other epidermal appendages. Mutations in this gene lead to Jackson-Lawler type pachynychia congenita and steatocystoma multiplex. It may play a role in the formation and maintenance of various skin appendages, specifically in determining shape and orientation of hair. It may be a marker of basal cell differentiation in complex epithelia and therefore indicative of a certain type of epithelial "stem cells". It may act as an autoantigen in the immunopathogenesis of psoriasis, with certain peptide regions being a major target for autoreactive T cells and hence causing their proliferation. It is involved in tissue repair.



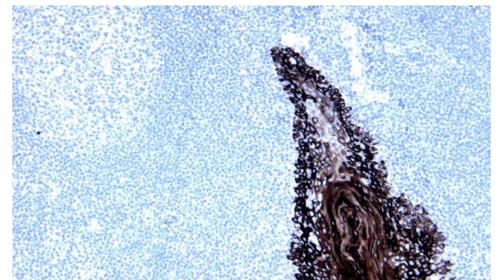
**CK17 - Tonsil**

Tonsil section has been stained using CK17 antibody (Clone: BS55) with 1:200 dilution. Epithelium of tonsil is stained intensively.



**CK17 - Skin**

Skin section has been stained using CK17 antibody (Clone: BS55) with 1:200 dilution. Epidermis of the skin is stained with permanent red chromogen.



**CK17 - Tonsil**

Tonsil section has been stained using CK17 antibody (Clone: BS55) with 1:200 dilution. Epithelium of tonsil is stained intensively.

## CK18 (CK-LMW)

Cat#: BSH-7235-100 100ul, BSH-7235-1 1ml

Clonality: Mouse monoclonal antibody

Clone: BS83

Application: IHC-P

S/R: Human, rabbit, pig, sheep

Control tissues: Liver and appendix

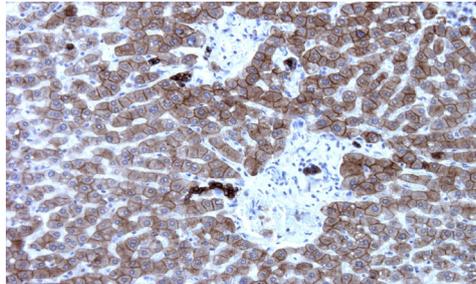


Cytokeratin 18 encodes the type I intermediate filament chain keratin 18. Keratin 18, together with its filament partner keratin 8, are perhaps the most commonly found members of the intermediate filament gene family. They are expressed in single layer epithelial tissues of the body. Mutations in this gene have been linked to cryptogenic cirrhosis. Two transcript variants encoding the same protein have been found for this gene.



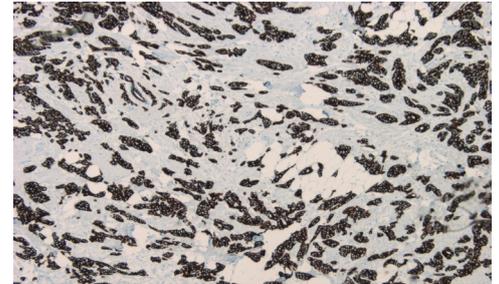
### CK18 - Appendix

Appendix section has been stained using CK18 optibody (Clone: BS83) with 1:250 dilution. Columnar epithelium of appendix is strongly stained.



### CK18 - Liver

Liver section has been stained using CK18 optibody (Clone: BS83) with 1:250 dilution. Hepatocytes and bile ducts have moderate and strong label.



### CK18 - Ductal breast adenocarcinoma

Ductal breast adenocarcinoma section has been stained using CK18 optibody (Clone: BS83) with 1:250 dilution. Carcinoma cells have stained strongly.

## CK19

Cat#: BSH-7240-100 100ul, BSH-7240-1 1ml

Clonality: Mouse monoclonal antibody

Clone: BS23

Application: IHC-P

S/R: Human, rabbit, pig, sheep, dog

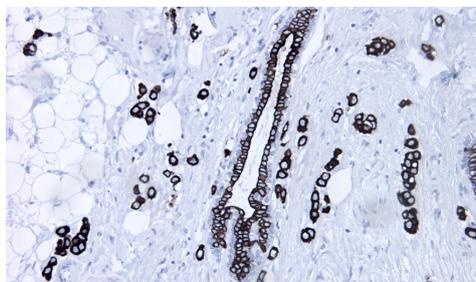
Control tissues: Tonsil, liver and appendix

Cytokeratin 19 is a member of the keratin family. The keratins are intermediate filament proteins responsible for the structural integrity of epithelial cells and are subdivided into cytokeratins and hair keratins. The type I cytokeratins consist of acidic proteins which are arranged in pairs of heterotypic keratin chains. Unlike its related family members, this smallest known acidic cytokeratin is not paired with a basic cytokeratin in epithelial cells. It is specifically expressed in the periderm, the transiently superficial layer that envelops the developing epidermis.



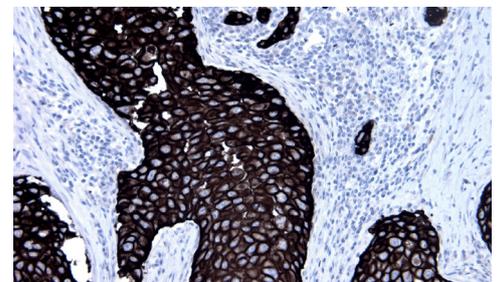
### CK19 - Appendix

Appendix section has been stained using CK19 optibody (Clone: BS23) with 1:200 dilution. Columnar epithelia of appendix is strongly stained.



### CK19 - Lobular breast carcinoma

Lobular breast carcinoma section has been stained using CK19 optibody (Clone: BS23) with 1:200 dilution. CK19 stains breast lobular carcinoma cells with strong intensity.



### CK19 - Ductal breast carcinoma

Ductal breast carcinoma section has been stained using CK19 optibody (Clone: BS23) with 1:200 dilution. Carcinoma cells are strongly stained.

## CK20

Cat#: [BSH-2000-100](#) 100ul, [BSH-2000-1](#) 1ml

Clonality: Mouse monoclonal antibody

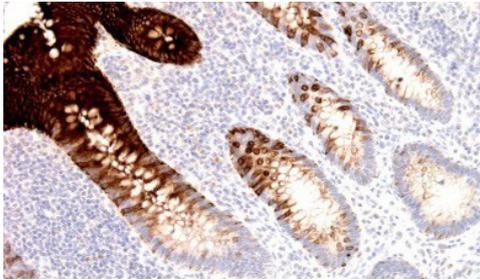
Clone: BS101

Application: IHC-P

S/R: Human, sheep

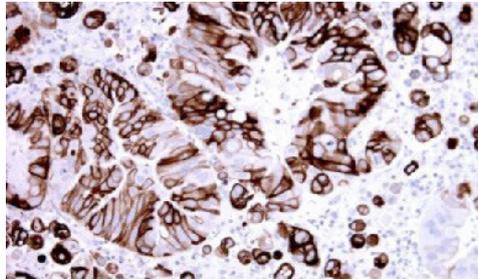
Control tissues: Appendix, colon

Cytokeratin 20 (CK20) is expressed in enterocytes and goblet cells of the gastrointestinal (GI) tract. It is also expressed in specific types of simple epithelial cells of the urinary tract. CK20 is useful marker of colorectal carcinoma, gastric, pancreas, urothelium, merkel and biliary system carcinomas.



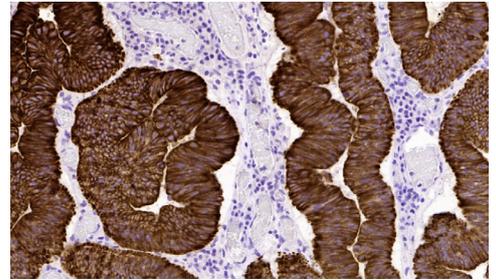
**CK20 - Appendix**

Appendix section has been stained using CK20 optibody (Clone: BS101) with 1:250 dilution. Columnar epithelia of appendix is strongly stained without any background.



**CK20 - Urinary bladder carcinoma**

Urinary bladder carcinoma section has been stained using CK20 optibody (Clone: BS101) with 1:250 dilution. Urinary bladder carcinoma cells have strong and intensive staining reaction.



**CK20 - Colon carcinoma**

Colon carcinoma section has been stained using CK20 optibody (Clone: BS101) with 1:250 dilution. Neoplastic cells have strong cytoplasmic staining reaction.

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## CK20

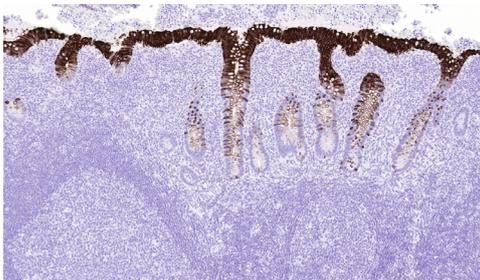
Cat#: [BSH-5110-100](#) 100ul, [BSH-5110-1](#) 1ml

Clonality: Rabbit monoclonal antibody Clone: BSR11

Application: IHC-P S/R: Human, sheep

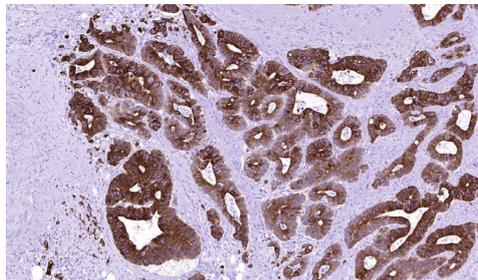
Control tissues: Appendix, colon

Cytokeratin 20 (CK20) is expressed in enterocytes and goblet cells of the gastrointestinal (GI) tract. It is also expressed in specific types of simple epithelial cells of the urinary tract. CK20 is useful marker of colorectal carcinoma, gastric, pancreas, urothelium, merkel and biliary system carcinomas.



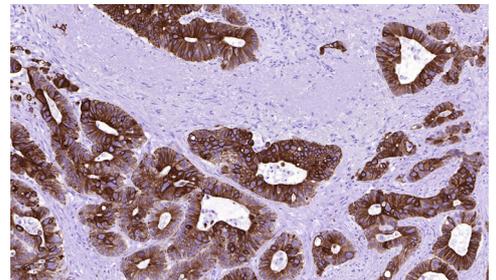
**CK20 - Appendix**

Appendix section has been stained using CK20 optibody (Clone: BSR11) with 1:200 dilution. Columnar epithelia of appendix have strong cytoplasmic label.



**CK20 - Colon carcinoma**

Colon carcinoma section has been stained using CK20 optibody (Clone: BSR11) with 1:200 dilution. Colon carcinoma cells have strong and intensive label.



**CK20 - Colon carcinoma**

Colon carcinoma section has been stained using CK20 optibody (Clone: BSR11) with 1:200 dilution. Colon carcinoma cells have strong and intensive label.

## Cyclin D1

Cat#: BSH-4002-100 100ul, BSH-4002-1 1ml

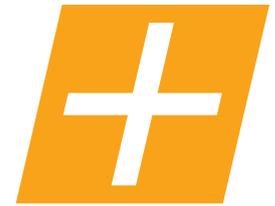
Clonality: Rabbit monoclonal antibody

Clone: BSR112

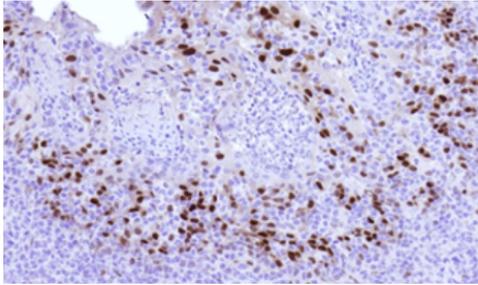
Application: IHC-P

S/R: Human

Control tissues: Tonsil, mantle cell lymphoma

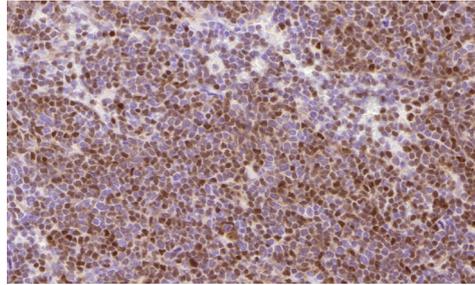


Cyclin D1, is cell cycle regulator and it is over expressed in a wide variety of human neoplasms. Cyclin D1 forms a complex with regulatory subunit of CDK4 or CDK6 kinases and it is required for cell cycle G1/S transition. The expression is maximal in G1 and minimal in S phase of cell cycle. Cyclin D1 expression is located mainly to the proliferative zone of normal epithelial tissues. Localization of the cyclin D1 is mainly nuclear. Cyclin D is useful for lymphoma diagnostic, especially diagnosis of mantle cell lymphoma.



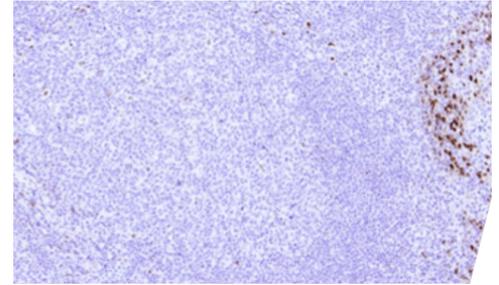
### Cyclin D1 - Tonsil

Tonsil section has been stained using Cyclin D1 antibody (Clone: BSR112) with 1:200 dilution. Weak to moderate nuclear label in germinal center macrophages.



### Cyclin D1 - Mantel cell lymphoma

Mantel cell lymphoma section has been stained using Cyclin D1 antibody (Clone: BSR112) with 1:200 dilution. Weak to moderate nuclear label in germinal center macrophages.



### Cyclin D1 - Tonsil

Tonsil section has been stained using Cyclin D1 antibody (Clone: BSR112) with 1:200 dilution. Weak to moderate nuclear label in germinal center macrophages.

## Desmin

Cat#: BSH-7082-100 100ul, BSH-7082-1 1ml

Clonality: Mouse monoclonal antibody

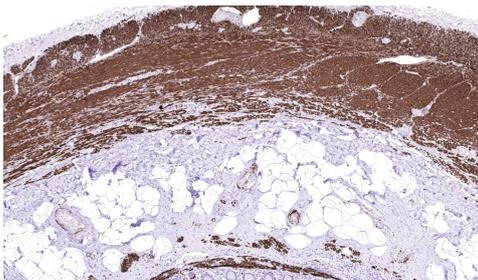
Clone: BS21

Application: IHC-P

S/R: Human, rabbit, rat, sheep, pig

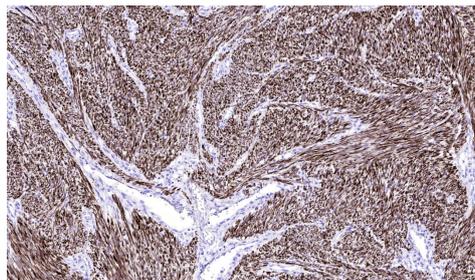
Control tissues: Appendix and placenta

Desmin (DES), with 470-amino acid protein (about 52kDa), belongs to the intermediate filament family and Desmin is class III intermediate filaments found in muscle cells. Homopolymers of Desmin form a stable intracytoplasmic filamentous network connecting myofibrils to each other and to the plasma membrane. Mutations in Desmin are associated with desmin-related myopathy, a familial cardiac and skeletal myopathy (CSM), and with distal myopathies. Desmin is also expressed in smooth muscle cells of both airways and alveolar ducts. Desmin is a load-bearing protein that stiffens the airways and consequently the lung and modulates airway contractile response. Desmin is especially useful for identification of leiomyosarcoma and rhabdomyosarcoma and other myogenic and mesenchymal neoplasms.



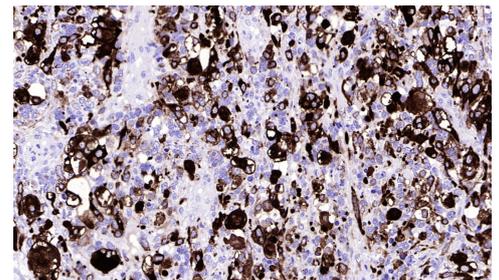
### Desmin - Appendix

Appendix section has been stained using Desmin antibody (Clone: BS21) with 1:200 dilution. Muscularis propria of appendix stained strongly



### Desmin - Leiomyoma

Leiomyoma section has been stained using Desmin antibody (Clone: BS21) with 1:200 dilution. Smooth muscle cells have strong to moderate staining reaction.



### Desmin - Rhabdomyosarcoma

Rhabdomyosarcoma section has been stained using Desmin antibody (Clone: BS21) with 1:200 dilution. Neoplastic cells have strong label.

## E-cadherin

Cat#: [BSH-7516-100](#) 100ul, [BSH-7516-1](#) 1ml

Clonality: Mouse monoclonal antibody

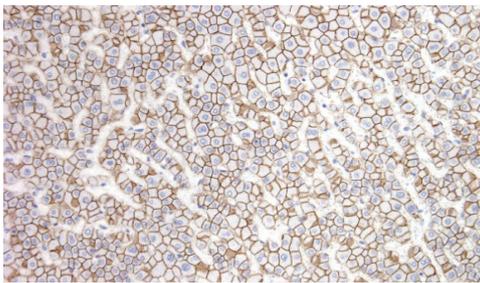
Clone: BS38

Application: IHC-P

S/R: Human, dog, rabbit, rat, mouse, sheep, pig

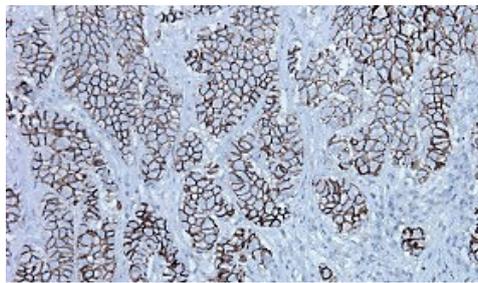
Control tissues: Ductal breast carcinoma (+), lobular breast carcinoma (-), liver

E-Cadherin is a 120 kDa transmembrane glycoprotein that is localized in the adherens junctions of epithelial cells. There, it interacts with the cytoskeleton through the associated cytoplasmic catenin proteins. E-Cadherin is a critical regulator of epithelial junction formation. Its association with catenins is necessary for cell-cell adhesion. These E-cadherin/catenin complexes associate with cortical actin bundles at both the zonula adherens and the lateral adhesion plaques. E-Cadherin expression is often down-regulated in highly invasive, poorly differentiated carcinomas. Increased expression of E-Cadherin in these cells reduces invasiveness. Thus, loss of expression or function of E-Cadherin appears to be an important step in tumorigenic progression. E-cadherin used for differential diagnosis between ductal and lobular breast carcinoma.



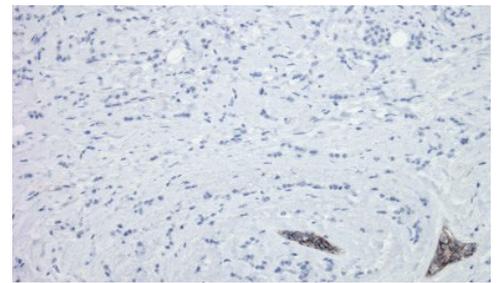
### E-cadherin - Liver

Liver section has been stained using E-cadherin antibody (Clone: BS38) with 1:250 dilution. Membranes of hepatocytes and bile ducts have strong label.



### E-cadherin - Ductal breast carcinoma

Ductal breast carcinoma section has been stained using E-cadherin antibody (Clone: BS38) with 1:250 dilution. Carcinoma cells have strong membranous label.



### E-cadherin - Lobular breast carcinoma

Lobular breast carcinoma section has been stained using E-cadherin antibody (Clone: BS38) with 1:250 dilution. No staining in the lobular breast carcinoma.

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## EpCAM/CD326

Cat#: [BSH-7402-100](#) 100ul, [BSH-7402-1](#) 1ml

Clonality: Mouse monoclonal antibody

Clone: BS14

Application: IHC-P

S/R: Human, rat, sheep, pig

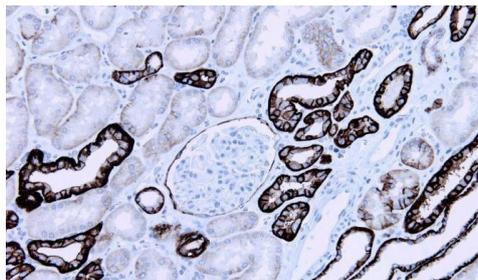
Control tissues: Kidney and appendix

Epithelial Cell Adhesion Molecule (EpCAM) is a 40 kDa cell surface antigen and this protein is expressed in almost all epithelial cell membranes but not on mesodermal or neural cell membranes. EpCAM is a Type 1 transmembrane glycoprotein and it is expressed on the basolateral membrane of cells by the majority of epithelial tissues, with the exception of adult squamous epithelium and some specific epithelial cell types including hepatocytes and gastric epithelial cells. EpCAM expression has been reported to be a possible marker of early malignancy, with expression being increased in tumor cells, and de novo expression being seen in dysplastic squamous epithelium. This cell surface, glycosylated 40kD protein is highly expressed in the bone marrow, colon, lung, and most normal epithelial cells and is expressed on carcinomas of gastrointestinal origin.



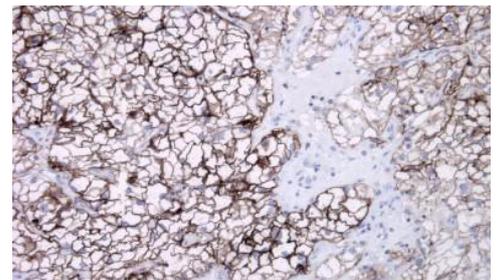
### EpCAM - Appendix

Appendix section has been stained using EpCAM antibody (Clone: BS14) with 1:200 dilution. Columnal epithelial cells of appendix have strong membranous label.



### EpCAM - Kidney

Kidney section has been stained using EpCAM antibody (Clone: BS14) with 1:200 dilution. Strong staining in epithelia of collecting tubules and moderate and weak staining in epithelia of proximal tubules and Bowman's capsule.



### EpCAM - Renal clear cell carcinoma

Renal clear cell carcinoma section has been stained using EpCAM antibody (Clone: BS14) with 1:200 dilution. Neoplastic cells have strong to moderate membranous label.

## Glucagon

Cat#: BSH-7443-100 100ul, BSH-7443-1 1ml

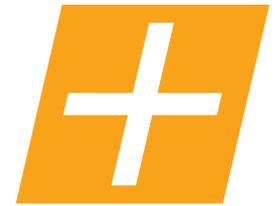
Clonality: Mouse monoclonal antibody

Clone: BS71

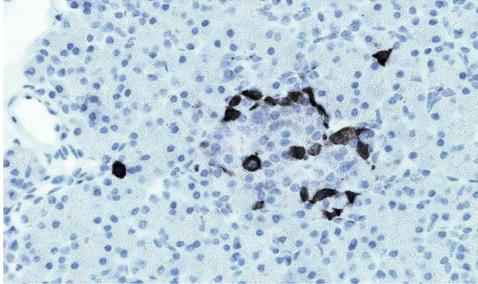
Application: IHC-P

S/R: Human

Control tissues: Pancreas

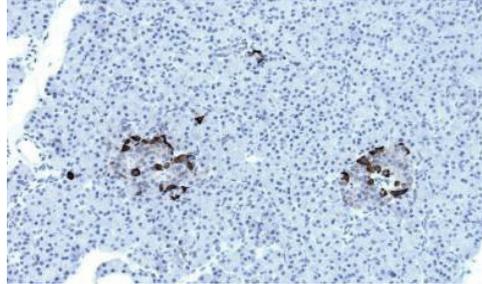


Glucagon, is a pancreatic hormone that counteracts the glucose-lowering action of insulin by stimulating glycogenolysis and gluconeogenesis. Glucagon is a ligand for a specific G-protein linked receptor whose signaling pathway controls cell proliferation. Two of the other peptides are secreted from gut endocrine cells and promote nutrient absorption through distinct mechanisms. Finally, the fourth peptide is similar to glicentin, an active enteroglucagon. Glucagon is secreted in the alpha cells of the islets of Langerhans. GLP-1, GLP-2, oxyntomodulin and glicentin are secreted from enteroendocrine cells throughout the gastrointestinal tract. GLP1 and GLP2 are also secreted in selected neurons in the brain.



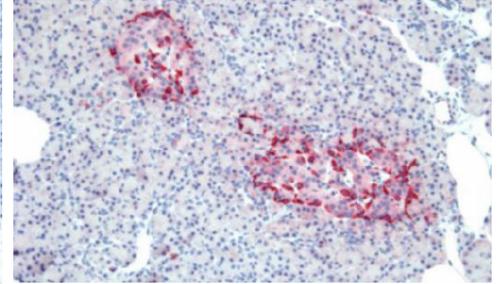
### Glucagon - Pancreas

Pancreas section has been stained using glucagon antibody (Clone: BS71) with 1:200 dilution. Glucagon secreted alpha cells of pancreas have strong cytoplasmic label.



### Glucagon - Pancreas

Pancreas section has been stained using glucagon antibody (Clone: BS71) with 1:200 dilution. Glucagon secreted alpha cells of pancreas have strong cytoplasmic label.



### Glucagon - Pancreas

Pancreas section has been stained using glucagon antibody (Clone: BS71) with 1:200 dilution. Glucagon secreted alpha cells of pancreas have strong cytoplasmic label.

## Glutamine synthetase

Cat#: BSH-2013-100 100ul, BSH-2013-1 1ml

Clonality: Mouse monoclonal antibody

Clone: BS51

Application: IHC-P

S/R: Human

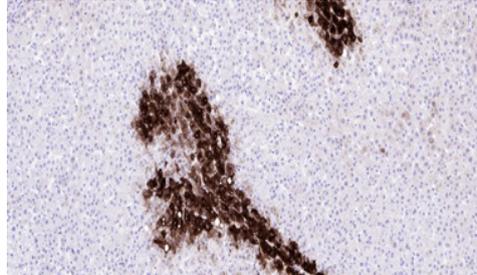
Control tissues: Liver

Glutamine synthetase is enzyme which catalyzes the synthesis of glutamine from glutamate and ammonia in the liver tissue. In normal liver glutamine synthetase expressed in pericentral hepatocytes. Glutamine synthetase can be useful marker in hepatocellular carcinoma diagnostic with panel of other hepatocellular carcinoma markers.



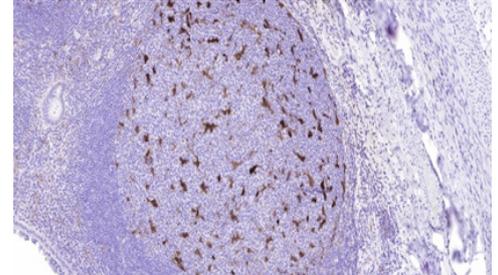
### Glutamine synthetase - Liver

Liver section has been stained using glutamine synthetase antibody (Clone: BS51) with 1:200 dilution. Pericentral hepatocytes have strong granular cytoplasmic label.



### Glutamine synthetase - Liver

Liver section has been stained using glutamine synthetase antibody (Clone: BS51) with 1:200 dilution. Pericentral hepatocytes have strong granular cytoplasmic label.



### Glutamine synthetase - Appendix

Appendix section has been stained using glutamine synthetase antibody (Clone: BS51) with 1:200 dilution. Faint cytoplasmic label was observed from follicular macrophages.

## Granzyme B

Cat#: [BSH-3014-100](#) 100ul, [BSH-3014-1](#) 1ml

Clonality: Rabbit monoclonal antibody

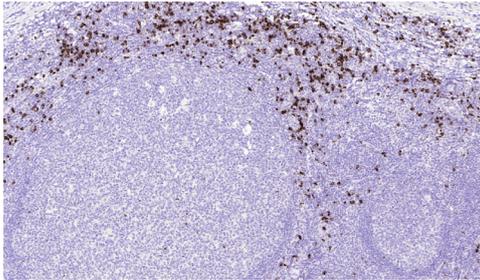
Clone: BSR150

Application: IHC-P

S/R: Human

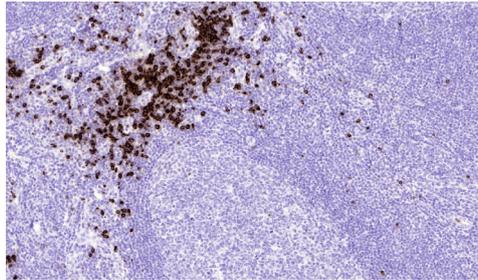
Control tissues: Appendix and tonsil

Granzyme B (GZMB), is the cell death-inducing serine protease, which expressed in the cytotoxic T lymphocytes and natural killer (NK) cells. Granzyme B is crucial for the rapid induction of target cell apoptosis and it has essential role in immunosurveillance. Granzyme B enters in the target cells with perforin, and results in the activation of apoptosis through caspase-dependent and -independent pathways. Granzyme B is the useful marker especially in NK/T-cell lymphomas.



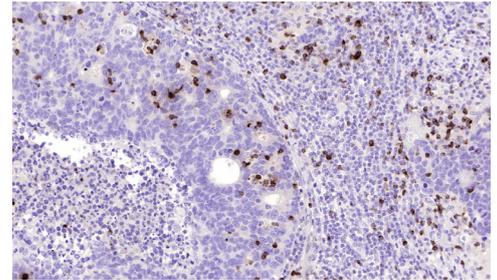
### Granzyme B - Tonsil

Tonsil section has been stained using granzyme b optibody (Clone: BSR150) with 1:200 dilution. Cytotoxic T lymphocytes and NK cells have strong cytoplasmic granular label.



### Granzyme B - Tonsil

Tonsil section has been stained using granzyme b optibody (Clone: BSR150) with 1:200 dilution. Cytotoxic T lymphocytes and NK cells have strong cytoplasmic granular label.



### Granzyme B - Lymph node

Metastasis of colorectal carcinoma in lymph node section has been stained using granzyme b optibody (Clone: BSR150) with 1:200 dilution. Cytotoxic T lymphocytes and NK cells have strong cytoplasmic granular label. Granzyme B positive tumor-infiltrating lymphocytes in colorectal carcinoma metastasis.

## HER2

Cat#: [BSH-4004-100](#) 100ul, [BSH-4004-1](#) 1ml

Clonality: Rabbit monoclonal antibody

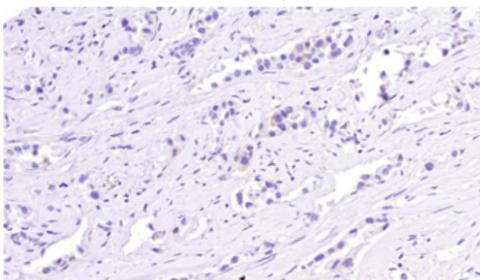
Clone: BSR44

Application: IHC-P

S/R: Human

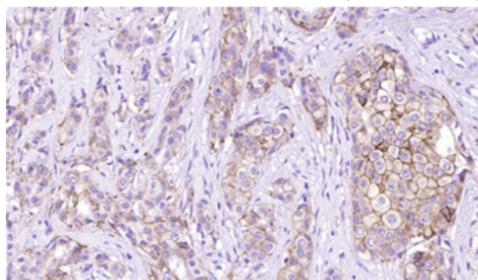
Control tissues: HER2 positive breast cancer cases with different graduses

HER2/ERBB2, is a member of the epidermal growth factor (EGF) receptor family of receptor tyrosine kinases. Amplification and/or overexpression of this gene has been reported in numerous cancers, including breast and gastric tumors. Alternative splicing results in several additional transcript variants, some encoding different isoforms and others that have not been fully characterized. Immunohistochemical staining of HER-2 protein is graded as 0/1+, 2+ and 3+.



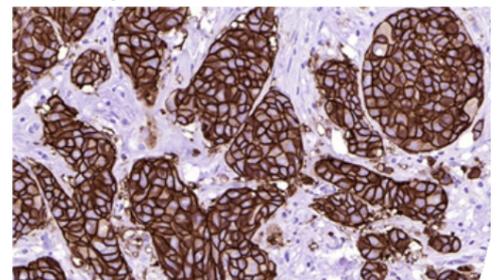
### HER2 - Ductal breast cancer, 0/1+

Breast carcinoma section has been stained using HER2 optibody (Clone: BSR44) with 1:200 dilution. Carcinoma cells are HER2 negative without label.



### HER2 - Ductal breast cancer, 2+

Breast carcinoma section has been stained using HER2 optibody (Clone: BSR44) with 1:200 dilution. Carcinoma cells are HER2 positive with strong to moderate membranous label.



### HER2 - Ductal breast cancer, 3+

Breast carcinoma section has been stained using HER2 optibody (Clone: BSR44) with 1:200 dilution. Carcinoma cells are HER2 positive with strong membranous label.

## HER2

Cat#: [BSH-7182-100](#) 100ul, [BSH-7182-1](#) 1ml

Clonality: Mouse monoclonal antibody

Clone: BS24

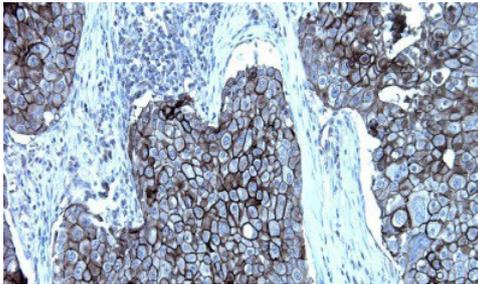
Application: IHC-P

S/R: Human

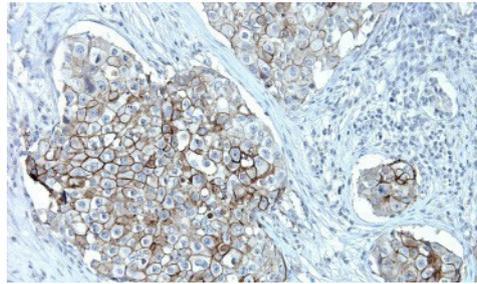
Control tissues: HER2 positive breast cancer cases with different graduses



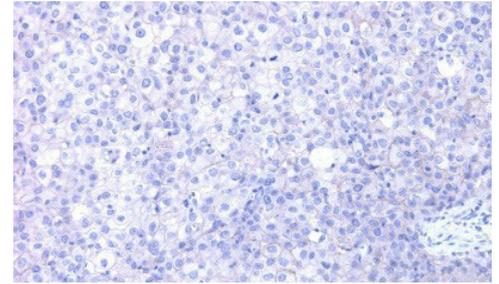
HER2/ERBB2, is a member of the epidermal growth factor (EGF) receptor family of receptor tyrosine kinases. This protein has no ligand binding domain of its own and therefore cannot bind growth factors. However, it does bind tightly to other ligand- bound EGF receptor family members to form a heterodimer, stabilizing ligand binding and enhancing kinase-mediated activation of downstream signalling pathways, such as those involving mitogen-activated protein kinase and phosphatidylinositol-3 kinase. Amplification and/or overexpression of this gene has been reported in numerous cancers, including breast and gastric tumors. Alternative splicing results in several additional transcript variants, some encoding different isoforms and others that have not been fully characterized. Immunohistochemical staining of HER 2 protein is graded as 0/1+, 2+ and 3+.



**HER2 - Ductal breast cancer, 3+**  
Breast carcinoma section has been stained using HER2 optibody (Clone: BS24) with 1:200 dilution. Carcinoma cells are HER2 positive with strong membranous label.



**HER2 - Ductal breast cancer, 3+**  
Breast carcinoma section has been stained using HER2 optibody (Clone: BS24) with 1:200 dilution. Carcinoma cells are HER2 positive with strong to moderate membranous label.



**HER2 - Ductal breast cancer, 0/1+**  
Breast carcinoma section has been stained using HER2 optibody (Clone: BS24) with 1:200 dilution. Carcinoma cells are HER2 negative without label.

## Insulin

Cat#: [BSH-2010-100](#) 100ul, [BSH-2010-1](#) 1ml

Clonality: Mouse monoclonal antibody

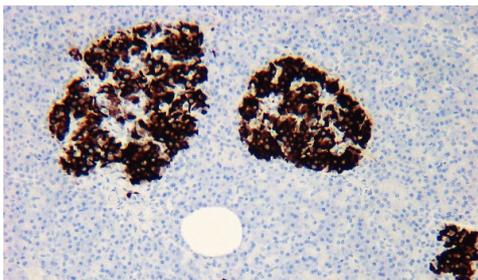
Clone: BS22

Application: IHC-P

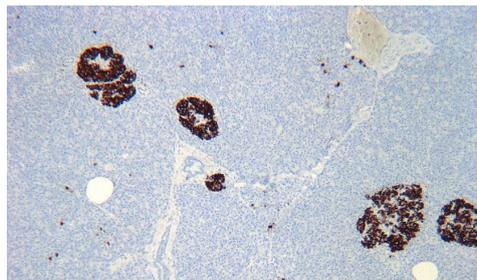
S/R: Human

Control tissues: Pancreas

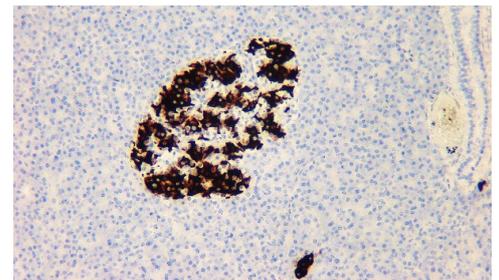
Insulin is a pancreatic hormone that regulates glucose level in blood and it is involved in the synthesis of proteins and fat. Insulin increases cell permeability to monosaccharides, amino acids, and fatty acids. It accelerates glycolysis, the pentose phosphate cycle, and glycogen synthesis in liver. Insulin is a heterodimer of a B chain and A chain linked by two disulfide bonds. Defects in insulin are the cause of familial hyperproinsulinemia. Insulin is present on the insulin secreted beta cells in islets of Langerhans.



**Insulin - Pancreas**  
Pancreas section has been stained using insulin optibody (Clone: BS22) with 1:200 dilution. Insulin secreted beta cells have strong label in islets of Langerhans.



**Insulin - Pancreas**  
Pancreas section has been stained using insulin optibody (Clone: BS22) with 1:200 dilution. Insulin secreted beta cells have strong label in islets of Langerhans.



**Insulin - Pancreas**  
Pancreas section has been stained using insulin optibody (Clone: BS22) with 1:200 dilution. Insulin secreted beta cells have strong label in islets of Langerhans.

## Ki67

Cat#: [BSH-7302-100](#) 100ul, [BSH-7302-1](#) 1ml

Clonality: Mouse monoclonal antibody

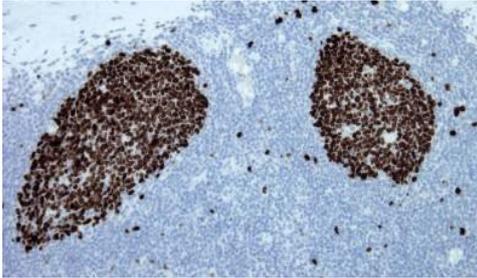
Clone: BS4

Application: IHC-P

S/R: Human, sheep, dog

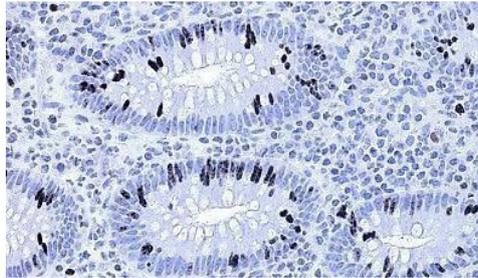
Control tissues: Tonsil, colon/appendix

Ki67, also known as MKI67, is a prototypic cell cycle related nuclear protein, expressed by proliferating cells in all phases of the active cell cycle (G1, S, G2 and M phase). It is absent in resting (G0) cells. Ki67 staining are useful in establishing the cell growing fraction in neoplasms (immunohistochemically quantified by determining the number of Ki67 positive cells among the total number of resting cells = Ki67 index). The correlation between low Ki67 index and histologically low grade tumors is strong. Ki67 is routinely used in breast cancer diagnostics and as a neuronal marker of cell cycling and proliferation.



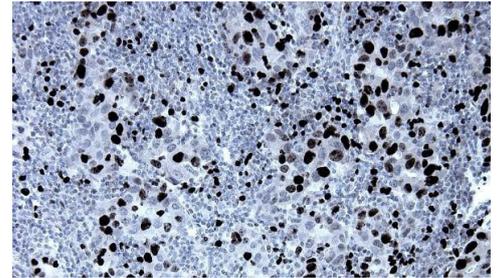
**Ki67 - Tonsil**

Tonsil section has been stained using Ki67 antibody (Clone: BS4) with 1:200 dilution. Majority of the germinal center B cells have strong nuclear label.



**Ki67 - Appendix**

Appendix section has been stained using Ki67 antibody (Clone: BS4) with 1:200 dilution. Strong nuclear staining in proliferating cells of intestinal crypts.



**Ki67 - Breast ductal adenocarcinoma**

Breast carcinoma section has been stained using Ki67 antibody (Clone: BS4) with 1:200 dilution. Proliferating neoplastic cells have strong to moderate nuclear label.

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## L1CAM

Cat#: [BSH-3005-100](#) 100ul, [BSH-3005-1](#) 1ml

Clonality: Rabbit monoclonal antibody

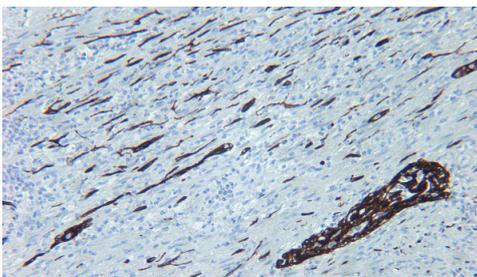
Clone: BSR3

Application: IHC-P

S/R: Human

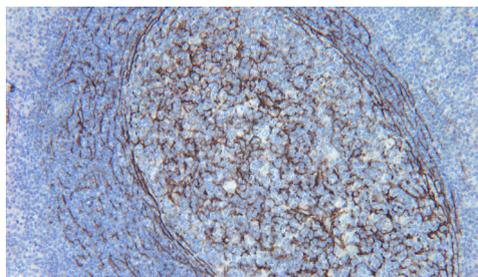
Control tissues: Tonsil, appendix

Cell adhesion molecule with an important role in the development of the nervous system. The L1, neural cell adhesion molecule (L1CAM) plays an important role in axon growth, fasciculation, neural migration and in mediating neuronal differentiation. L1 protein is expressed to tissues arising from neuroectoderm. L1CAM plays also an important role in the malignancy of human tumors and according to several studies, L1CAM positive carcinomas have a bad prognosis. L1CAM is overexpressed in many human carcinomas but it is useful especially in endometrium carcinoma diagnostic.



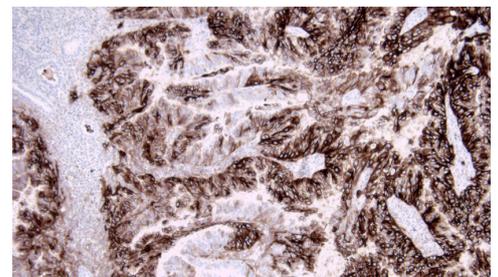
**L1CAM - Appendix**

Appendix section has been stained using L1CAM antibody (Clone: BSR3) with 1:200 dilution. Neuronal plexuses and axons of muscular propria have strong label.



**L1CAM - Tonsil**

Tonsil section has been stained using L1CAM antibody (Clone: BSR3) with 1:200 dilution. Germinal center of tonsil has moderate to strong label.



**L1CAM - Endometrium carcinoma**

Endometrium carcinoma section has been stained using L1CAM antibody (Clone: BSR3) with 1:200 dilution. L1CAM positive carcinoma cells have strong label.

## Li-Cadherin

Cat#: BSH-3016-100 100ul, BSH-3016-1 1ml

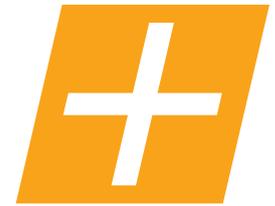
Clonality: Mouse monoclonal antibody

Clone: BS26

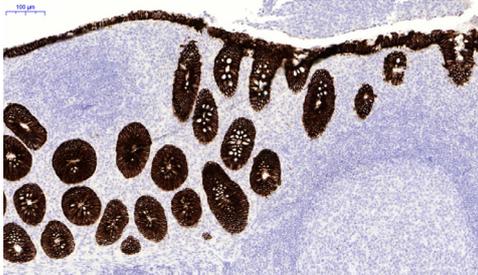
Application: IHC

S/R: human

Control tissues: Appendix, colon

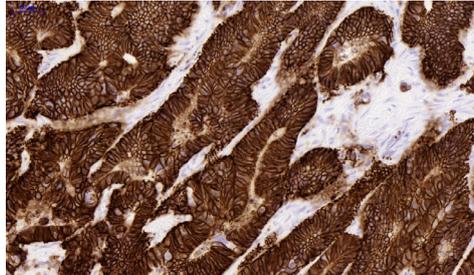


LI-Cadherin (Cadherin-17, CDH17), is liver-intestinal cadherin and it belongs to the cadherin superfamily. Structure and cellular locations of LI-Cadherin differs from other cadherins like E-CAD, N-CAD or P-CAD. LI-Cadherin is expressed in epithelium of appendix, colon, and intestine and it is not expressed in other normal tissues. LI-Cadherin is positive in carcinomas of colorectal carcinomas and some cases of gastric and pancreas adenocarcinoma.



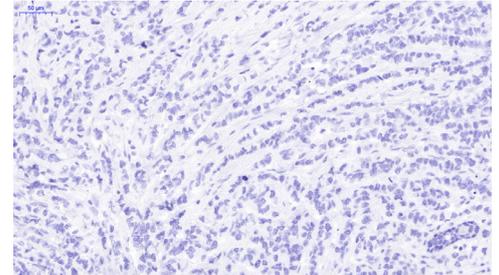
### Li-Cadherin - Appendix

Appendix have been stained using LI-Cadherin optibody (Clone: BS26) with 1:200 dilution. Columnar epithelial cells of appendix and colon carcinoma have strong membranous staining reaction.



### Li-Cadherin - Colon carcinoma

Colon carcinoma have been stained using LI-Cadherin optibody (Clone: BS26) with 1:200 dilution. Columnar epithelial cells of appendix and colon carcinoma have strong membranous staining reaction.



### Li-Cadherin - Ductal breast carcinoma

Ductal breast carcinoma have been stained using LI-Cadherin optibody (Clone: BS26) with 1:200 dilution. No staining reaction in ductal breast carcinoma was observed.

## LEF1

Cat#: BSH-9277-100 100ul, BSH-9277-1 1ml

Clonality: Mouse monoclonal antibody cocktail

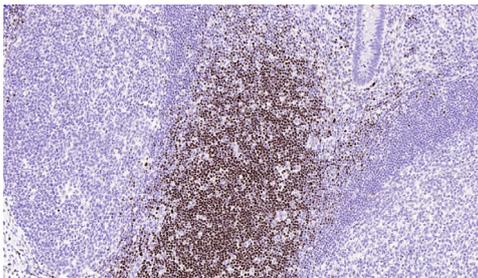
Clone: BS175 & BS190

Application: IHC-P

S/R: Human, mouse, rabbit, rat, porcine, sheep

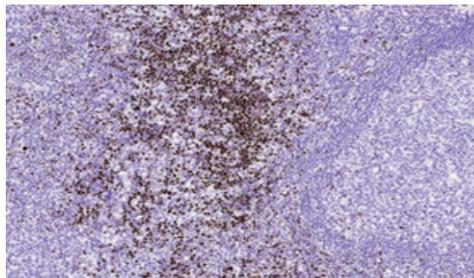
Control tissues: Tonsil, appendix

Lymphoid Enhancing Factor 1 (LEF1) is a transcription factor belonging to a family of proteins that share homology with the high mobility group protein-1. The protein encoded by this gene can bind to a functionally important site in the T-cell receptor-alpha enhancer, thereby conferring maximal enhancer activity. This transcription factor is involved in the Wnt-signaling pathway, and it may function in hair cell differentiation and follicle morphogenesis. LEF1 has a role in lymphopoietic and it is expressed normally in nucleus of T and pre-mature B-lymphocytes. LEF1 is a useful marker of subtyping of lymphomas especially for differentiation diagnostic of CLL and small lymphocytic lymphoma from other B-cell neoplasia.



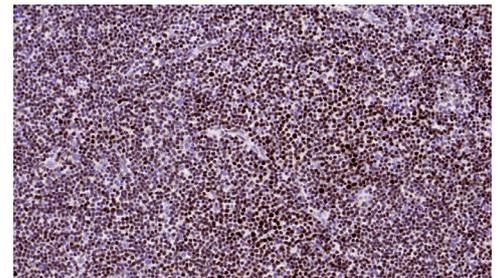
### LEF1 - Appendix

Appendix section has been stained using LEF1 optibody (Clone: BS175&BS190) with 1:200 dilution. T-cells have strong nuclear label.



### LEF1 - Tonsil

Tonsil section has been stained using LEF1 optibody (Clone: BS175&BS190) with 1:200 dilution. T-cells have strong nuclear label.



### LEF1 - Tonsil

CLL section has been stained using LEF1 optibody (Clone: BS175&BS190) with 1:200 dilution. T-cells have strong nuclear label.

## Mammaglobin

Cat#: [BSH-7589-100](#) 100ul, [BSH-7589-1](#) 1ml

Clonality: Mouse monoclonal antibody

Clone: BS17

Application: IHC-P

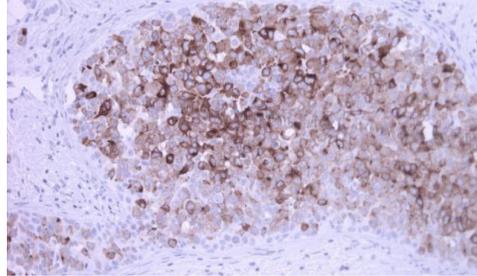
S/R: Human

Control tissues: Skin (sweat glands), breast cancer

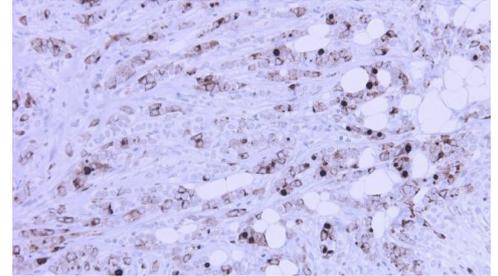
Mammaglobin is a gene that is expressed almost exclusively in the normal breast epithelium and human breast cancer. It is a member of the secretoglobulin gene family and forms a heterodimer with lipophilin B. It has been suggested that mammaglobin may be a useful marker for breast cancer clinical research. Studies investigating the detection of mRNA by RT PCR from circulating carcinoma cells in the peripheral blood of breast cancer patients have shown that mammaglobin is a highly specific marker and correlates with several prognostic factors. Mammaglobin is mammary gland specific and it over expressed in breast cancer.



**Mammaglobin - Skin (Sweat glands)**  
Skin section has been stained using mammaglobin optibody (Clone: BS17) with 1:200 dilution. Sweat glands and lumen of sweat glands have strong label.



**Mammaglobin - Ductal breast cancer**  
Breast carcinoma section has been stained using mammaglobin optibody (Clone: BS17) with 1:200 dilution. Most of the carcinoma cells have strong to moderate staining reaction.



**Mammaglobin - Ductal breast cancer**  
Breast carcinoma section has been stained using mammaglobin optibody (Clone: BS17) with 1:200 dilution. Most of the carcinoma cells have strong to moderate staining reaction.

## MBP

Cat#: [BSH-7697-100](#) 100ul, [BSH-7697-1](#) 1ml

Clonality: Mouse monoclonal antibody

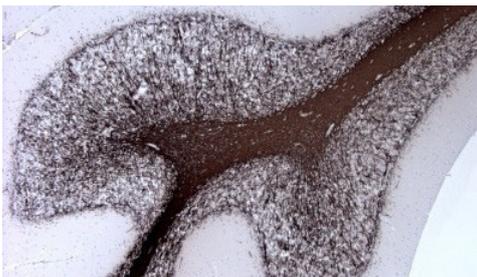
Clone: BS188

Application: IHC-P

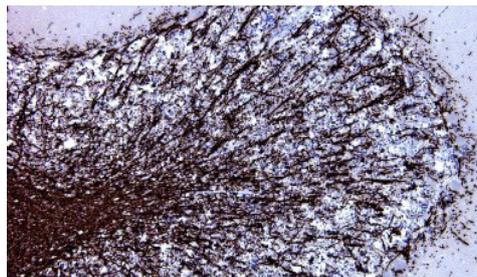
S/R: Human, rat, mouse

Control tissues: Brain, spine cord

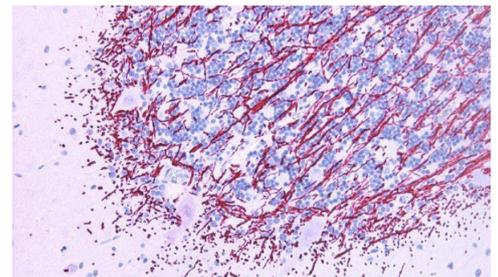
The protein encoded by the classic MBP gene is a major constituent of the myelin sheath of oligodendrocytes and Schwann cells in the nervous system. However, MBP-related transcripts are also present in the bone marrow and the immune system. MBP gene encode hybrid proteins that have N-terminal Golli aa sequence linked to MBP aa sequence. The second family of transcripts contain only MBP exons and produce the well characterized myelin basic proteins. This complex gene structure is conserved among species suggesting that the MBP transcription unit is an integral part of the Golli transcription unit and that this arrangement is important for the function and/or regulation of these genes.



**MBP - Brain (Cerebellum)**  
Brain section has been stained using MBP optibody (Clone: BS188) with 1:200 dilution. Myelinin in granular cell layer has strong label.



**MBP - Brain (Cerebellum)**  
Brain section has been stained using MBP optibody (Clone: BS188) with 1:200 dilution. Myelinin in granular cell layer has strong label.



**MBP - Brain (Cerebellum)**  
Brain section has been stained using MBP optibody (Clone: BS188) with 1:200 dilution. Myelinin in granular cell layer has strong label. AP-polymer with Permanent red have been used as visualization.

## MCM2

Cat#: BSH-7698-100 100ul, BSH-7698-1 1ml

Clonality: Mouse monoclonal antibody

Clone: BS18

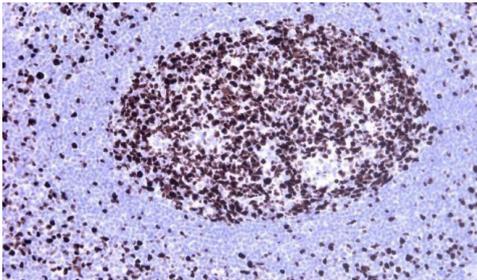
Application: IHC-P

S/R: Human

Control tissues: Tonsil, appendix

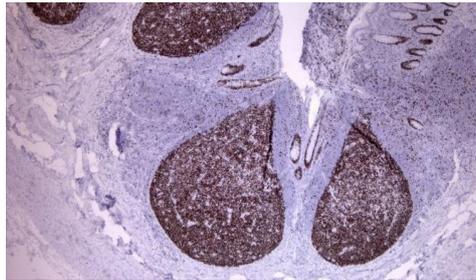


The protein encoded by this gene is one of the highly conserved mini-chromosome maintenance proteins (MCM) that are involved in the initiation of eukaryotic genome replication. The hexameric protein complex formed by MCM proteins is a key component of the pre-replication complex (pre\_RC) and may be involved in the formation of replication forks and in the recruitment of other DNA replication related proteins. This protein forms a complex with MCM4, 6, and 7, and has been shown to regulate the helicase activity of the complex. MCM2 is localized in the nucleus and it is expressed during interphase. MCM2 is essential protein in cell cycle and it is needed for entry into the S phase and cell division. MCM2 is a proliferation marker and it is useful for identification of premalignant lesions and evaluation of proliferation indexes.



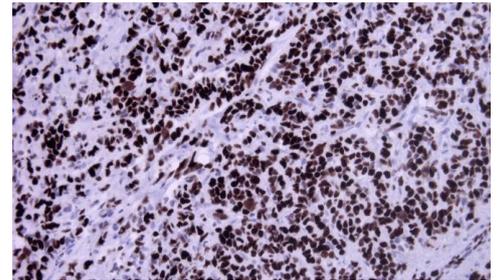
### MCM2 - Tonsil

Tonsil section has been stained using MCM2 antibody (Clone: BS18) with 1:200 dilution. Proliferating cells have strong label in the germinal center.



### MCM2 - Appendix

Appendix section has been stained using MCM2 antibody (Clone: BS18) with 1:200 dilution. Proliferating cells have strong label in the germinal center of appendix. Also basal cells of intestinal crypts have strong nuclear label.



### MCM2 - Ductal breast cancer

Ductal breast cancer section has been stained using MCM2 antibody (Clone: BS18) with 1:200 dilution. Proliferate carcinoma cells have strong nuclear label.

## Melan A

Cat#: BSH-2003-100 100ul, BSH-2003-1 1ml

Clonality: Mouse monoclonal antibody

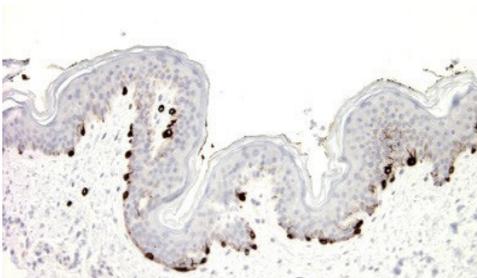
Clone: BS52

Application: IHC-P

S/R: Human

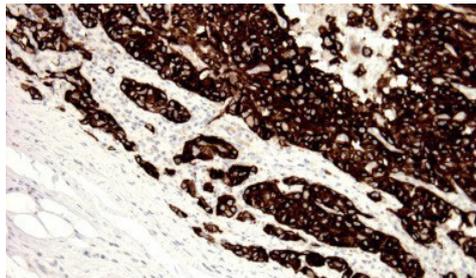
Control tissues: Skin, melanoma, nevus

Melan-A (MART-1) is a transmembrane protein which is recognized by autologous cytotoxic T lymphocytes. MelanA is expressed in skin melanocytes and melanocyte lineages. This antibody is useful for the identification of melanomas and it should be included into standard melanoma panel for diagnostic. This antibody not cross react with cells of adrenal cortex.



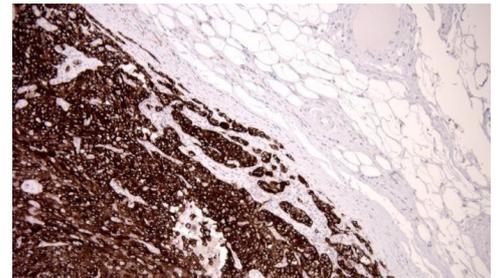
### Melan A - Skin

Normal skin section has been stained using Melan A antibody (Clone: BS52) with 1:250 dilution. Melanocytes have strong cytoplasmic label.



### Melan A - Melanoma

Melanoma section has been stained using Melan A antibody (Clone: BS52) with 1:250 dilution. Melanoma cells stained with strong staining intensity without background staining in normal cells.



### Melan A - Melanoma

Melanoma section has been stained using Melan A antibody (Clone: BS52) with 1:250 dilution. Melanoma cells stained with strong staining intensity without background staining in normal cells.

## MLH1

Cat#: [BSH-7208-100](#) 100ul, [BSH-7208-1](#) 1ml

Clonality: Mouse monoclonal antibody

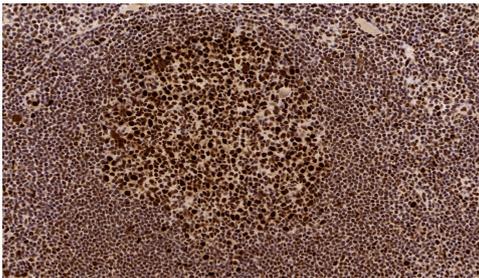
Clone: BS29

Application: IHC-P

S/R: Human

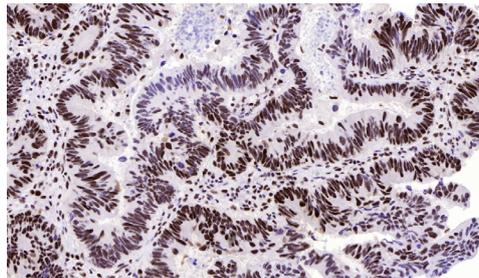
Control tissues: Tonsil, colon carcinoma, MLH1 mutated colon carcinoma

DNA-mismatch repair (MMR), a conserved process that involves correcting errors made during DNA synthesis, is crucial to the maintenance of genomic integrity. Lack of a functional DNA-mismatch repair pathway is a common characteristic of several different types of human cancers, either due to an MMR gene mutation or promoter-methylation gene silencing. Loss of MLH1 protein expression is associated with a mutated phenotype, microsatellite instability and a predisposition to cancer. In hereditary nonpolyposis colorectal cancer (HNPCC), an autosomal dominant inherited cancer syndrome that signifies a high risk of colorectal and various other types of cancer, the MLH1 gene exhibits a pathogenic mutation. Inactivation of the MLH1 gene causes genome instability and predisposition to cancer.



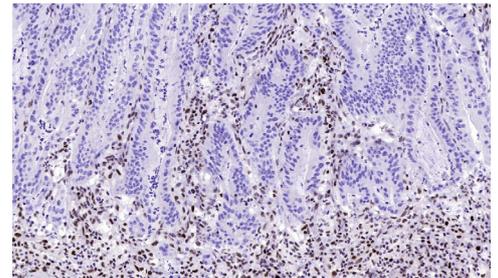
### MLH1 - Tonsil

Tonsil section has been stained using MLH1 antibody (Clone: BS29) with 1:250 dilution. Strong to moderate nuclear staining reaction was observed from lymphatic tissue.



### MLH1 - Colon carcinoma

Colon carcinoma section has been stained using MLH1 antibody (Clone: BS29) with 1:250 dilution. Strong to moderate nuclear staining reaction was observed from stromal and neoplastic cells.



### MLH1 - Colon carcinoma with loss of MLH1

Colon carcinoma section has been stained using MLH1 antibody (Clone: BS29) with 1:250 dilution. Strong nuclear staining reaction was observed from stromal cells only.

## MSH6

Cat#: [BSH-3015-100](#) 100ul, [BSH-3015-1](#) 1ml

Clonality: Rabbit monoclonal antibody

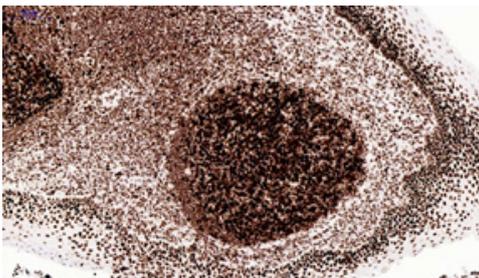
Clone: BSR100

Application: IHC

S/R: Human

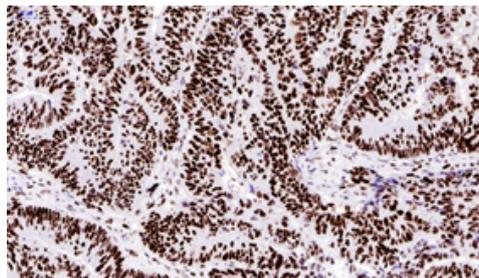
Control tissues: Tonsil, colon carcinoma with and without mutation

Mismatch repair proteins are nuclear enzymes which participate in repair of mismatch errors during DNA replication. Loss of Mismatch repair proteins increases the number of DNA replication errors in the proliferating cells. Errors occur especially in areas of the genome with short repetitive nucleotide sequences - causing microsatellite instability (MSI). MSH6 is a mismatch repair protein which is not expressed in a high proportion of patients with MSI-H. MSH6 antibody can be useful for immunohistochemical analyses of MSH6 protein in neoplastic tissues and identification of loss of MSH6. Immunohistochemical analysis of MSH6 should be performed in IHC panel together with MLH1, MSH2 and PMS2.



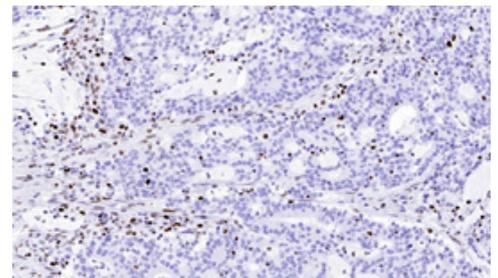
### MSH6 - Tonsil

Tonsil section has been stained using MSH6 antibody (Clone: BSR100) with 1:200 dilution. Moderate distinct nuclear staining reaction of mantle zone B-cells and strong nuclear staining reaction of the germinal center B-cells were observed in the tonsil (a) with 1:200 dilution.



### MSH6 - Colon carcinoma

Colon carcinoma section has been stained using MSH6 antibody (Clone: BSR100) with 1:200 dilution. Strong and distinct nuclear staining reaction of colon carcinoma cells as well as normal stromal cells were observed in colon carcinoma w/o loss of MSH expression (b).



### MSH6 - Colon carcinoma

Colon carcinoma section has been stained using MSH6 antibody (Clone: BSR100) with 1:200 dilution. Colon carcinoma with loss of MSH6 expression, remains negative with strong nuclear staining of normal stromal cells (c).

## Napsin A

Cat#: [BSH-2002-100](#) 100ul, [BSH-2002-1](#) 1ml

Clonality: Mouse monoclonal antibody

Clone: BS10

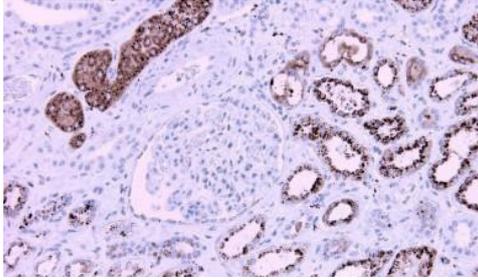
Application: IHC-P

S/R: Human

Control tissues: Kidney, lung

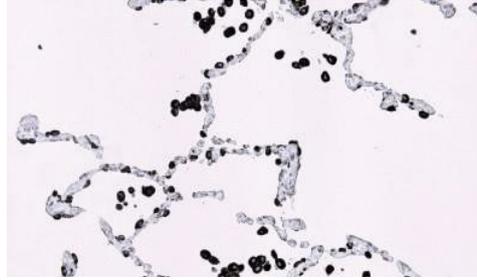


Napsin A is an aspartic proteinase that is expressed predominantly in lung (type II pneumocytes) and kidney and lower levels in spleen and blood leukocytes. Alveolar macrophages contains also Napsin A due phagocytosis of pneumocytes. Napsin A is useful especially in the differential diagnosis of lung adenocarcinoma between squamous cell carcinoma.



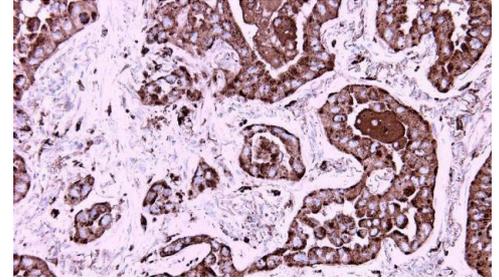
### Napsin A - Kidney

Kidney section has been stained using Napsin A antibody (Clone: BS10) with 1:300 dilution. Proximal tubule cells have stained strongly with granular cytoplasmic staining reaction.



### Napsin A - Lung

Lung section has been stained using Napsin A antibody (Clone: BS10) with 1:300 dilution. Pneumocytes and alveolar macrophages have cytoplasmic label.



### Napsin A - Lung adenocarcinoma

Lung adenocarcinoma section has been stained using Napsin A antibody (Clone: BS10) with 1:300 dilution. Carcinoma cells have strong cytoplasmic label.

## P53

Cat#: [BSH-7287-100](#) 100ul, [BSH-7287-1](#) 1ml

Clonality: Mouse monoclonal antibody

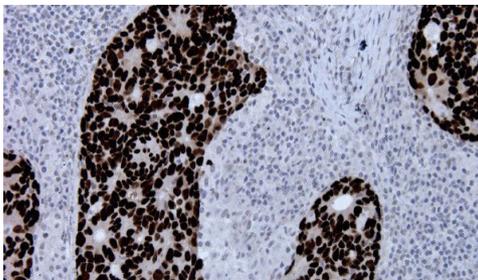
Clone: BS12

Application: IHC-P

S/R: Human

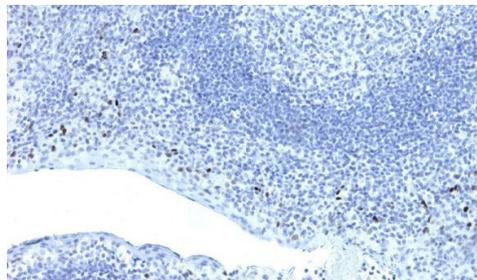
Control tissues: Tonsil

P53 is a DNA-binding protein containing transcription activation, DNA-binding, and oligomerization domains. P53 protein is expressed at low level in normal cells and at a high level in a variety of transformed cell lines, where it's believed to contribute to transformation and malignancy. Mutants of p53 that frequently occur in a number of different human cancers fail to bind the consensus DNA binding site, and hence cause the loss of tumor suppressor activity. P53 is especially useful for differential diagnosis of dysplastic and neoplastic tissues.



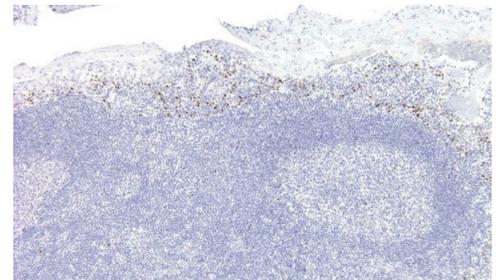
### P53 - Metastase of colon carcinoma in lymph node

Metastase section has been stained using P53 antibody (BS12) with 1:200 dilution. Carcinoma cells have strong staining reaction with nuclear staining pattern.



### P53 - Tonsil

Tonsil section has been stained using P53 antibody (BS12) with 1:200 dilution. Scattered basal cells of epithelium have stained moderately with nuclear staining pattern.



### P53 - Tonsil

Tonsil section has been stained using P53 antibody (BS12) with 1:200 dilution. Scattered basal cells of epithelium have stained moderately with nuclear staining pattern.

## P63

Cat#: [BSH-3006-100](#) 100ul, [BSH-3006-1](#) 1ml

Clonality: Rabbit monoclonal antibody

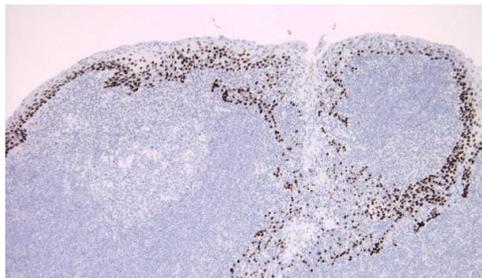
Clone: BSR6

Application: IHC-P

S/R: Human (Others not tested)

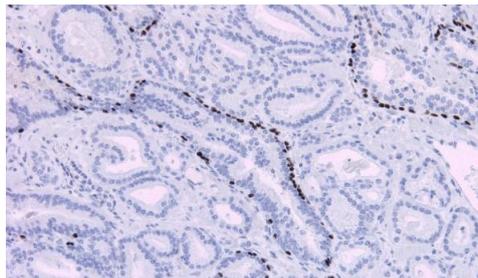
Control tissues: Tonsil, prostate

The p63 gene is a homologue of the p53 tumor suppressor gene. The p63 gene encodes for at least six major isoforms. P63 protein is a nuclear transcription factor and it is highly expressed in the basal cells of the epithelium. P63 is a useful marker for squamous, urothelial and myoepithelial carcinomas. P63 is found in the large majority of cases of squamous cell carcinoma. In basal-like subtype breast carcinoma, p63 is rarely detected. Prostate adenocarcinoma is typically P63 negative and P63 staining is useful for diagnosis of the prostate adenocarcinomas together with HMW-CK and AMACR.



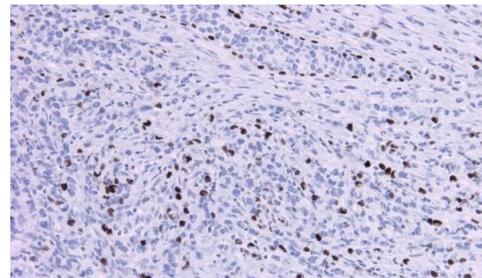
### P63 - Tonsil

Tonsil section has been stained using P63 antibody (BSR6) with 1:200 dilution. Basal cells of epithelium have strongly stained with nuclear staining pattern.



### P63 - Prostate adenocarcinoma

Prostate adenocarcinoma section has been stained using P63 antibody (BSR6) with 1:200 dilution. Normal prostate glands are P63 positive, prostate adenocarcinoma are P63 negative.



### P63 - Ductal breast carcinoma

Breast carcinoma section has been stained using P63 antibody (BSR6) with 1:200 dilution. Scattered and strongly to moderately stained, P63 positive carcinoma cells were observed.

## P63

Cat#: [BSH-7449-100](#) 100ul, [BSH-7449-1](#) 1ml

Clonality: Mouse monoclonal antibody

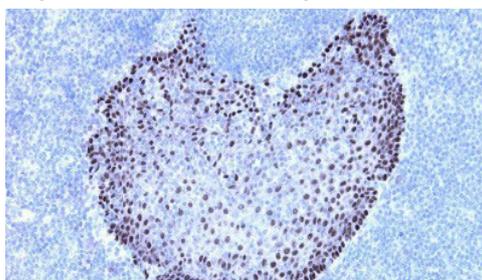
Clone: BS63

Application: IHC-P

S/R: Human

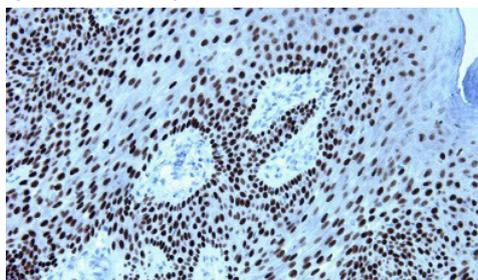
Control tissues: Tonsil, prostate

The p63 gene is a homologue of the p53 tumor suppressor gene. The p63 gene encodes for at least six major isoforms. P63 protein is a nuclear transcription factor and it is highly expressed in the basal cells of the epithelium. P63 is a useful marker for squamous, urothelial and myoepithelial carcinomas. P63 is found in the large majority of cases of squamous cell carcinoma. In basal-like subtype breast carcinoma, p63 is rarely detected. Prostate adenocarcinoma is typically P63 negative and P63 staining is useful for diagnosis of the prostate adenocarcinomas together with HMW-CK and AMACR.



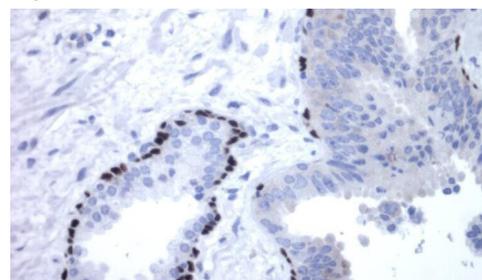
### P63 - Tonsil

Tonsil section have been stained using P63 antibody (BS63) with 1:200 dilution. Basal cells of epithelium have strongly stained with nuclear staining pattern.



### P63 - Skin

Skin section have been stained using P63 antibody (BS63) with 1:200 dilution. Basal cells of epithelium have strongly stained with nuclear staining pattern.



### P63 - Prostate PIN

Prostate PIN section have been stained using P63 antibody (BS63) with 1:200 dilution. Normal prostate glands are P63 positive, prostate adenocarcinoma are P63 negative.

## PAX5

Cat#: [BSH-7833-100](#) 100ul, [BSH-7833-1](#) 1ml

Clonality: Mouse monoclonal antibody

Clone: BS11

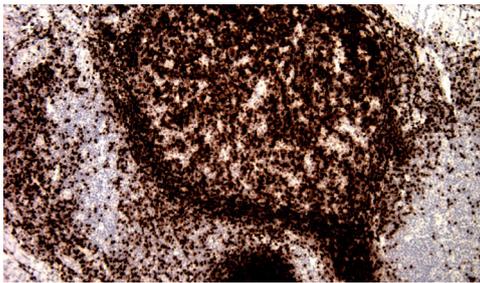
Application: IHC-P

S/R: Human, rabbit, rat, mouse, pig, sheep

Control tissues: Tonsil, appendix, hodgkin's lymphoma

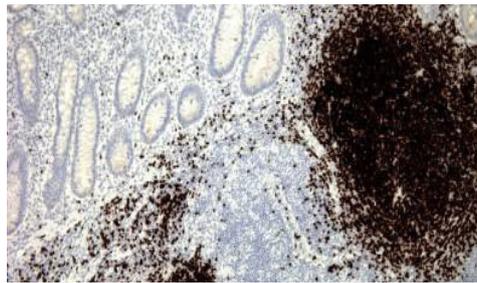


This gene encodes a member of the paired box (PAX) family of transcription factors. PAX proteins are important regulators in early development, and alterations in the expression of their genes are thought to contribute to neoplastic transformation. This gene encodes the B-cell lineage specific activator protein that is expressed at early, but not late stages of B-cell differentiation. This protein expressed is involved in small lymphocytic lymphomas of the plasmacytoid subtype, and in derived large-cell lymphomas. This translocation brings the potent E-mu enhancer of the IgH gene into close proximity of the PAX5 promoter, suggesting that the deregulation of transcription of this gene contributes to the pathogenesis of these lymphomas. Alternatively spliced transcript variants encoding different isoforms have been described but their biological validity has not been determined.



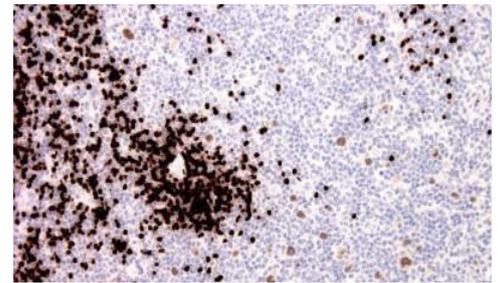
**PAX5 - Tonsil**

Tonsil section has been stained using PAX5 antibody (BS11) with 1:250 dilution. B cells have strong nuclear label.



**PAX5 - Appendix**

Appendix section has been stained using PAX5 antibody (BS11) with 1:250 dilution. B cells have strong nuclear label.



**PAX5 - Hodgkin's lymphoma**

Hodgkin's lymphoma section has been stained using PAX5 antibody (BS11) with 1:250 dilution. B cells have strong nuclear label and Hodgkin's cells stained with moderate staining intensity.

## PD1

Cat#: [BSH-3001-100](#) 100ul, [BSH-3001-1](#) 1ml

Clonality: Rabbit monoclonal antibody

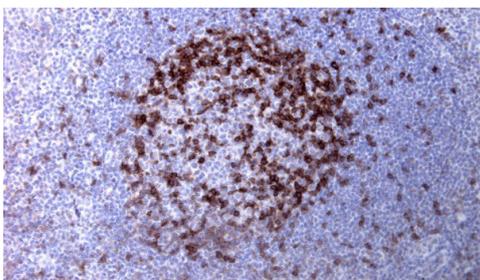
Clone: BSR1

Application: IHC-P

S/R: Human

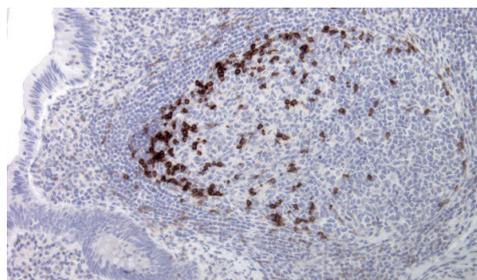
Control tissues: Tonsil, appendix

Programmed death-1 (PD1) is a member of the CD28 family of receptors and plays a role in the cellular immune response. PD1 is a marker of the activated T- and B-lymphocytes and it also expressed cells of myeloid origin. PD1 expressed mostly in T cells in germinal centers of lymphatic tissue. PD1 is a valuable marker of T-cell neoplasia and especially it is useful for diagnosis of the angioimmunoblastic lymphoma.



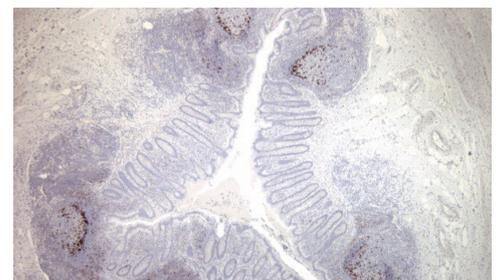
**PD1 - Tonsil**

Tonsil section have been stained using PD1 antibody (BSR1) with 1:200 dilution. T cells in germinal center have a strong membranous label.



**PD1 - Appendix**

Appendix section have been stained using PD1 antibody (BSR1) with 1:200 dilution. T cells in germinal center of appendix have strong and intensive label.



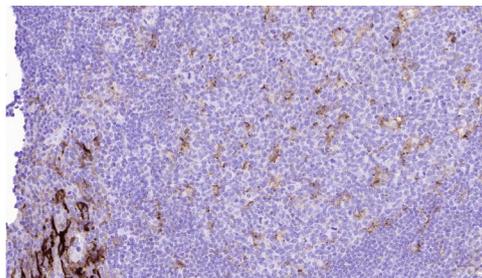
**PD1 - Appendix**

Appendix section have been stained using PD1 antibody (BSR1) with 1:200 dilution. T cells in germinal center have strong label.

## PDL1

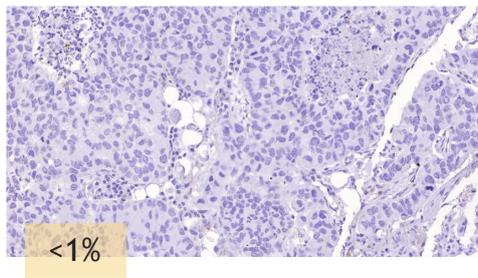
Cat#: [BSH-4003-100](#) 100ul, [BSH-4003-1](#) 1ml  
Clonality: Rabbit monoclonal antibody  
Clone: BSR90  
Application: IHC-P  
S/R: Human  
Control tissues: Tonsil, placenta, NSCLC cases

Programmed cell death ligand 1 (PDL1, CD274) is a type 1 transmembrane protein with role in the regulation of cellular immune responses. PDL1 and its receptor PD-1, interacts and regulating T lymphocyte activation and immune tolerance. Blockade of PD-L1/PD-1 interaction, it enhances the antitumor activity of T lymphocytes. PDL1 is commonly expressed in many tissues and cells, eg. placenta, tonsil and histiocytes. It over expressed in many human tumors such as non-small cell lung carcinoma (NSCLC), melanoma, DLBCL, and different kind of carcinomas. The staining pattern is membranous.



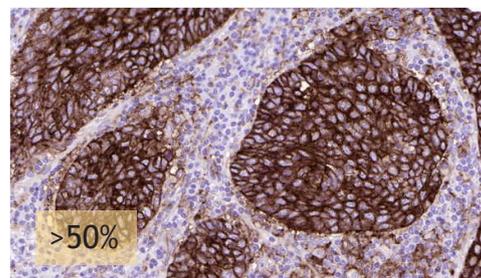
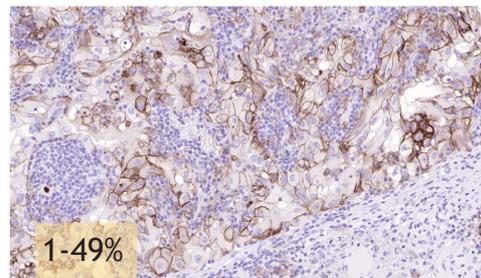
### PDL1 - Tonsil

Tonsil section have been stained using PDL1 antibody (BSR90) with 1:200 dilution. Crypt cells of epithelia have strong label with a weak to moderate staining pattern of germinal center macrophages.



### PDL1 - NSCLC

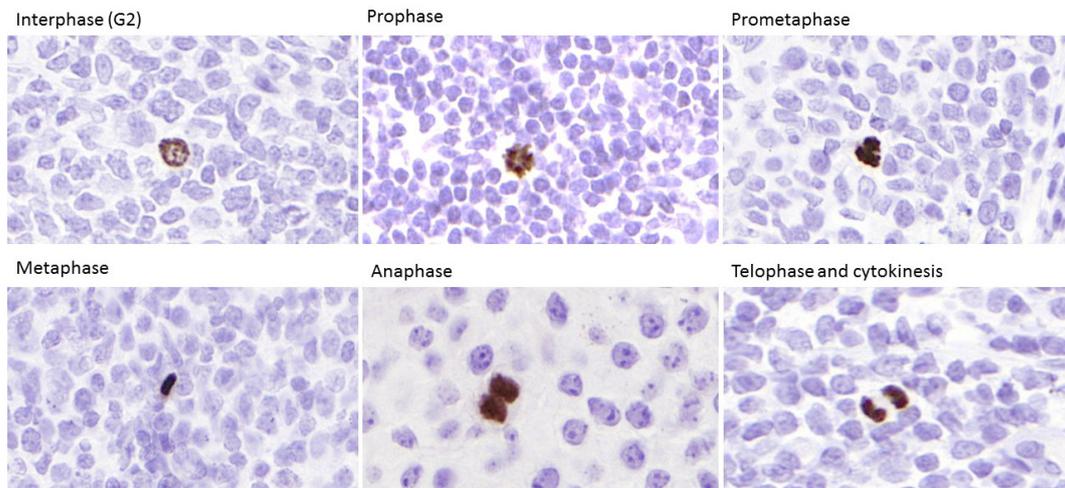
NSCLC section have been stained using PDL1 antibody (BSR90) with 1:200 dilution. NSCLC sections with <1%, 1-49% and >50% tumor proportion scores were stained. Note PDL1 stained alveolar macrophages in the stroma of pulmonary carcinoma.



## PHH3 (ser10)

Cat#: [BSH-4001-100](#) 100ul, [BSH-4001-1](#) 1ml  
Clonality: Rabbit monoclonal antibody Clone: BSR99  
Application: IHC-P  
S/R: Human, mouse  
Control tissues: Appendix, tonsil

Phosphohistone H3 (Ser10) (PHH3) is a histone protein, which complexes with the other histones to form the major constituents of chromatin in eukaryotic cells. Phosphorylation of serine 10 amino acid residues in histone H3 occurs only during mitosis late G2 phase. PHH3 is a useful marker for mitoses in several types of tumors and it is useful for identifying mitotic figures in tumors accurately.



### PHH3 - Tonsil

Tonsil section has been stained using PHH3 antibody (BSR99) with 1:200 dilution. Cells in late G2 phase and through mitotic cycle have strong to moderate nuclear staining reaction.

## SMA

Cat#: BSH-7459-100 100ul, BSH-7459-1 1ml

Clonality: Mouse monoclonal antibody

Clone: BS66

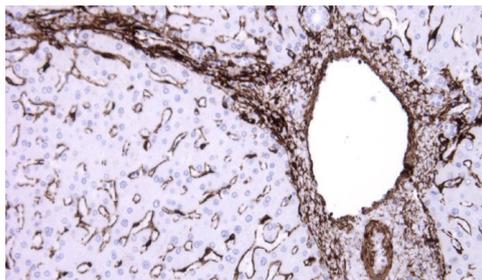
Application: IHC-P

S/R: Human, rabbit, rat, mouse, pig, sheep

Control tissues: Liver, appendix

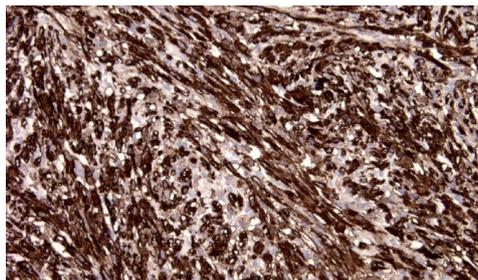


The protein encoded by ACTA2 gene belongs to the actin family of proteins, which are highly conserved proteins that play a role in cell motility, structure and integrity. Alpha, beta and gamma actin isoforms have been identified, with alpha actins being a major constituent of the contractile apparatus, while beta and gamma actins are involved in the regulation of cell motility. This smooth muscle specific alpha actin (SMA) stains actin from smooth muscle cells, myoepithelial cells, and myofibroblasts without cross-reaction of skeletal muscle. SMA is used especially for detection of leiomyomatous and myofibroblastic tumours, GIST and mesenchymal tumours.



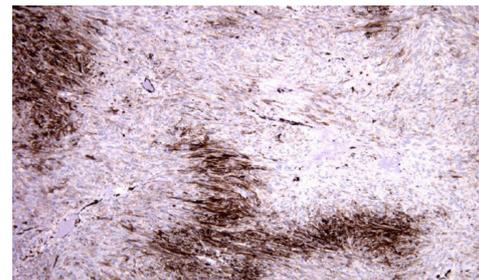
### SMA - Liver

Liver section has been stained using SMA antibody (BS66) with 1:200 dilution. Endothelial cells of sinusoids and portal area have strongly stained without staining of the bile ducts.



### SMA - Leiomyoma

Leiomyoma section has been stained using SMA antibody (BS66) with 1:200 dilution. All the neoplastic cells have moderate to strong staining reaction without background staining.



### SMA - Gastro intestinal stromal tumor (GIST)

GIST-section has been stained using SMA antibody (BS66) with 1:200 dilution. GIST cells have heterogeneous staining pattern.

## Somatostatin

Cat#: BSH-7849-100 100ul, BSH-7849-1 1ml

Clonality: Mouse monoclonal antibody

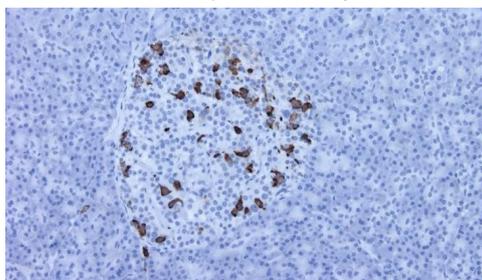
Clone: BS16

Application: IHC-P

S/R: Human

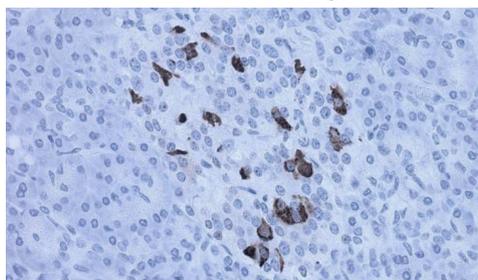
Control tissues: Pancreas

The preproprotein encoded by this gene. Somatostatin is expressed throughout the body and inhibits the release of numerous secondary hormones by binding to high-affinity G-protein-coupled somatostatin receptors. This hormone is an important regulator of the endocrine system through its interactions with pituitary growth hormone, thyroid stimulating hormone, and most hormones of the gastrointestinal tract. Somatostatin also affects rates of neurotransmission in the central nervous system and proliferation of both normal and tumorigenic cells.



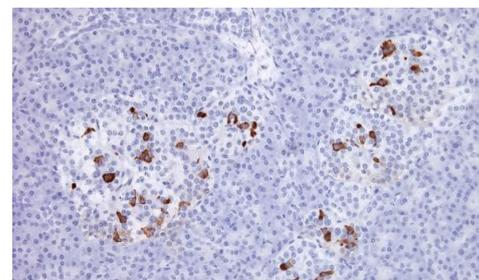
### Somatostatin - Pancreas

Pancreas section has been stained using somatostatin antibody (Clone: BS16) with 1:200 dilution. Somatostatin secreted delta cells of pancreas have strong cytoplasmic label.



### Somatostatin - Pancreas

Pancreas section has been stained using somatostatin antibody (Clone: BS16) with 1:200 dilution. Somatostatin secreted delta cells of pancreas have strong cytoplasmic label.



### Somatostatin - Pancreas

Pancreas section has been stained using somatostatin antibody (Clone: BS16) with 1:200 dilution. Somatostatin secreted delta cells of pancreas have strong cytoplasmic label.

## SOX2

Cat#: [BSH-2015-100](#) 100ul, [BSH-2015-1](#) 1ml

Clonality: Mouse monoclonal antibody

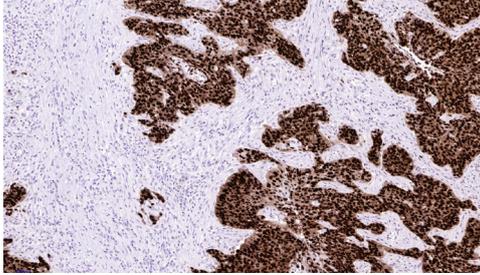
Clone: BS121

Application: IHC-P

S/R: Human

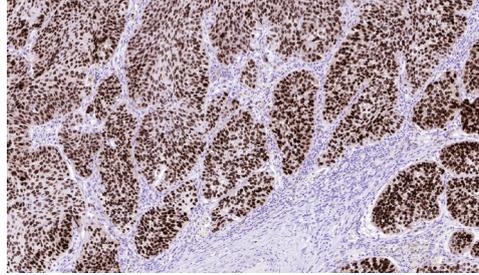
Control tissues: Appendix, tonsil

SOX2 is a transcription factor which is a member of SRY-related HMG-box (SOX) family. It has a role in the regulation of embryonic development and pluripotency of stem cells. It can be useful especially in lung squamous cell carcinoma diagnostic with panel of other relative markers of squamous carcinoma like P63/P40 and CK5/CK14 for example.



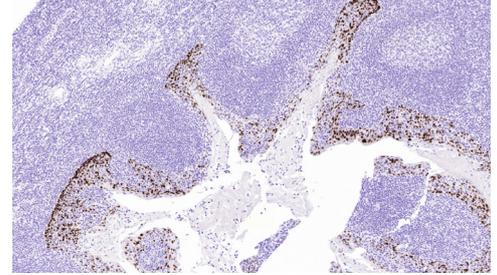
### SOX2 - Lung squamous cell cancer

Lung squamous cell cancer section has been stained using SOX2 optibody (Clone: BS121) with 1:200 dilution. Carcinoma cells have strong nuclear label.



### SOX2 - Lung squamous cell cancer

Lung squamous cell cancer section has been stained using SOX2 optibody (Clone: BS121) with 1:200 dilution. Carcinoma cells have strong nuclear label.



### SOX2 - Tonsil

Tonsil section has been stained using SOX2 optibody (Clone: BS121) with 1:200 dilution. Basal cells have strong nuclear label.

## SOX10

Cat#: [BSH-7959-100](#) 100ul, [BSH-7959-1](#) 1ml

Clonality: Mouse monoclonal antibody

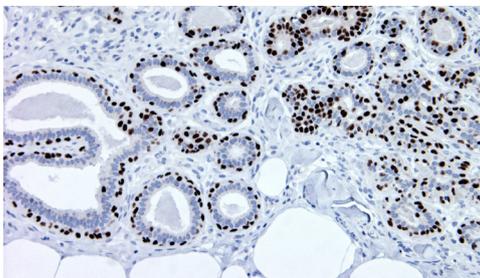
Clone: BS7

Application: IHC-P

S/R: Human

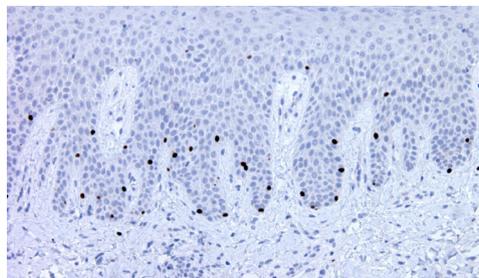
Control tissues: Breast (benign), skin, appendix

This gene encodes a member of the SOX (SRY-related HMG-box) family of transcription factors involved in the regulation of embryonic development and in the determination of the cell fate. The encoded protein may act as a transcriptional activator after forming a protein complex with other proteins. This protein acts as a nucleocytoplasmic shuttle protein and is important for neural crest and peripheral nervous system development. SOX10 is important and sensitive marker of melanoma especially for spindle cell and desmoplastic melanomas and schwannian neoplasms.



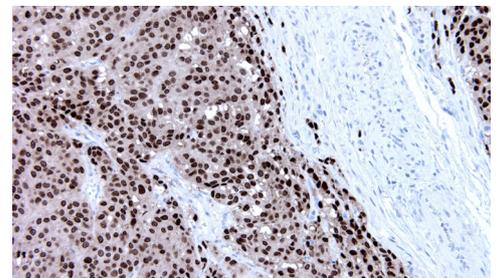
### SOX10 - Breast (benign)

Breast section has been stained using SOX10 optibody (Clone: BS7) with 1:200 dilution. Myoepithelial cells of breast have strong nuclear label.



### SOX10 - Skin

Skin section has been stained using SOX10 optibody (Clone: BS7) with 1:200 dilution. Melanocytes have strong staining reaction.



### SOX10 - Melanoma

Melanoma section has been stained using SOX10 optibody (Clone: BS7) with 1:200 dilution. Melanoma cells have strong nuclear label.

## Synaptophysin

Cat#: BSH-7385-100 100ul, BSH-7385-1 1ml

Clonality: Mouse monoclonal antibody

Clone: BS15

Application: IHC-P

S/R: Human, rabbit, rat, mouse, pig, sheep

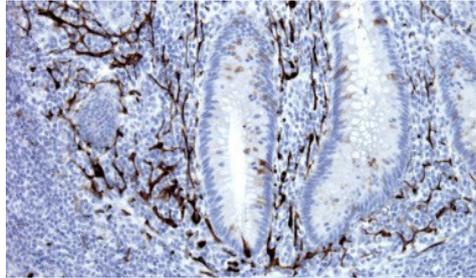
Control tissues: Appendix, pancreas



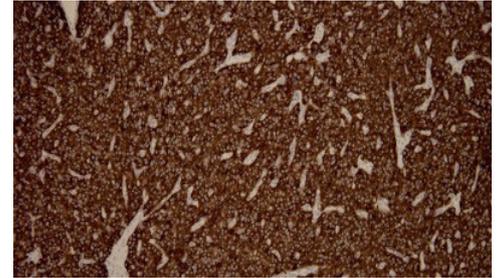
Synaptophysin (p38) is an integral membrane protein of small synaptic vesicles in brain and endocrine cells. Synaptophysin contains four transmembrane domains that form a hexameric channel or gap junction-like pore. Synaptophysin binds to the SNARE protein synaptobrevin/VAMP, which prevents the inclusion of synaptobrevin in the synaptic vesicle fusion complex and creates a pool of synaptobrevin for exocytosis when synapse activity increases. Synaptophysin is also responsible for targeting synaptobrevin 2/VAMP2 to synaptic vesicles, a critical component of the fusion complex.



**Synaptophysin - Appendix**  
Appendix section has been stained using Synaptophysin optibody (Clone: BS15) with 1:300 dilution. Ganglion cells and neuronal axons stained strongly.



**Synaptophysin - Appendix**  
Appendix section has been stained using Synaptophysin optibody (Clone: BS15) with 1:300 dilution. Ganglion cells and neuronal axons stained strongly.



**Synaptophysin - Neuro endocrine tumor**  
Neuro endocrine tumor section has been stained using Synaptophysin optibody (Clone: BS15) with 1:300 dilution. Neuroendocrine tumor cells have intensive staining reaction.

## Vimentin

Cat#: BSH-7100-100 100ul, BSH-7100-1 1ml

Clonality: Mouse monoclonal antibody

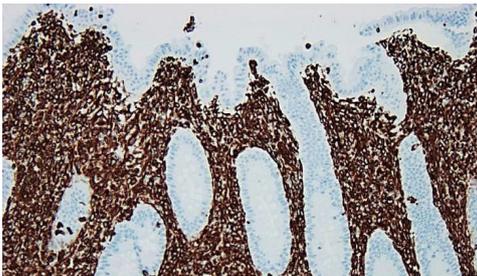
Clone: BS13

Application: IHC-P

S/R: Human, sheep

Control tissues: Appendix, tonsil

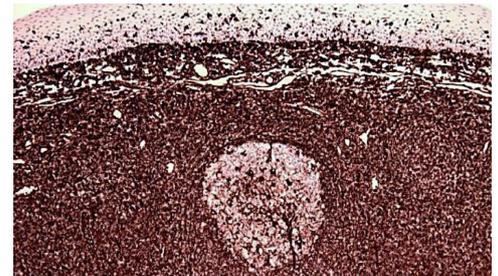
Vimentin is the major subunit protein of the intermediate filaments of mesenchymal cells. It is believed to be involved with the intracellular transport of proteins between the nucleus and plasma membrane. Vimentin has been implicated to be involved in the rate of steroid synthesis via its role as a storage network for steroidogenic cholesterol containing lipid droplets. Immunohistochemical staining for Vimentin is characteristic of sarcomas (of neural, muscle and fibroblast origin) compared to carcinomas which are generally negative. Melanomas, lymphomas and vascular tumors may all stain for Vimentin. Vimentin antibodies are thus of value in the differential diagnosis of undifferentiated neoplasms and malignant tumors. They are generally used with a panel of other antibodies including those recognising cytokeratins, lymphoid markers, S100, desmin and neurofilaments.



**Vimentin - Appendix**  
Appendix section has been stained using Vimentin optibody (Clone: BS13) with 1:200 dilution. Cells of the mesenchymal origin stained intensively.

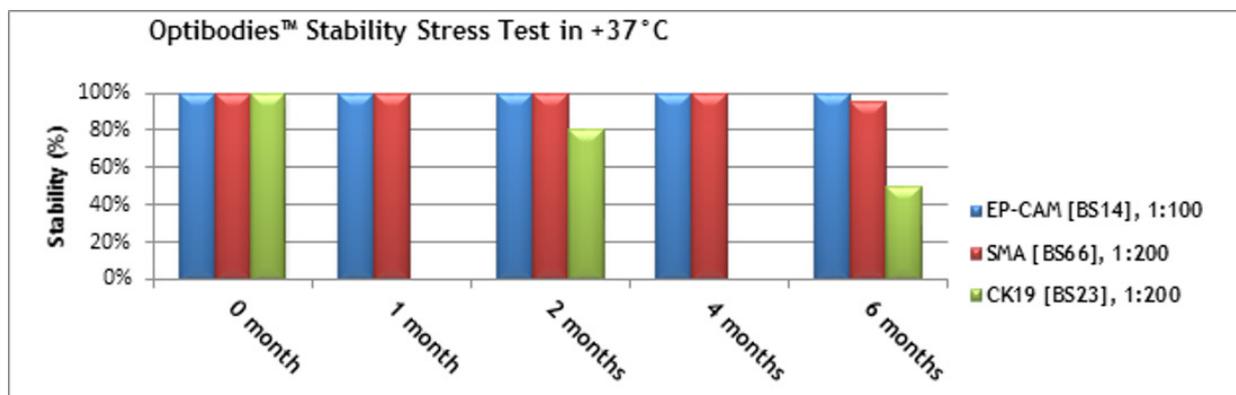


**Vimentin - Appendix**  
Appendix section has been stained using Vimentin optibody (Clone: BS13) with 1:200 dilution. Cells of the mesenchymal origin stained intensively.

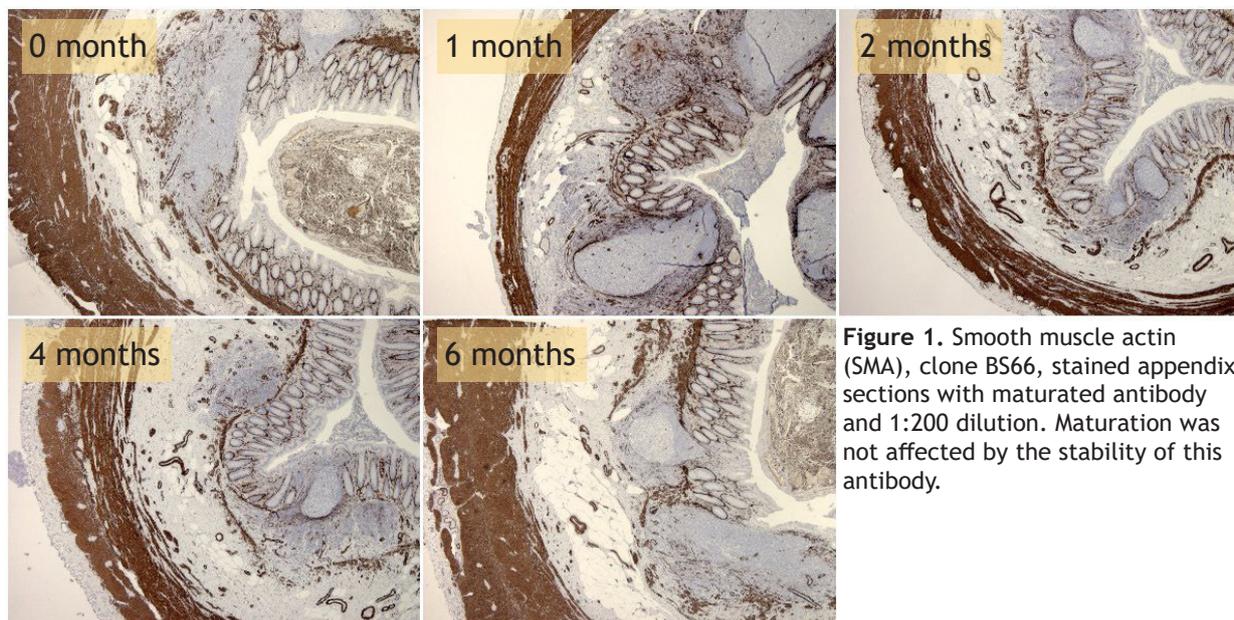


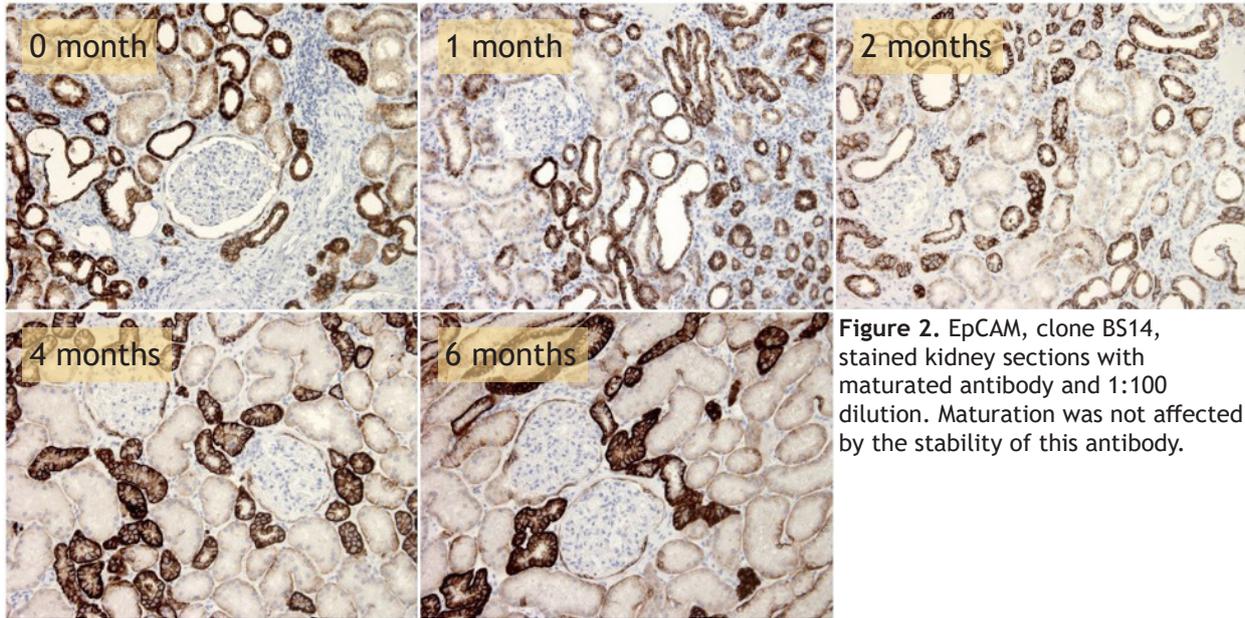
**Vimentin - Tonsil**  
Tonsil section has been stained using Vimentin optibody (Clone: BS13) with 1:200 dilution. Cells of the mesenchymal origin stained intensively.

# Stability of the Optibodies™

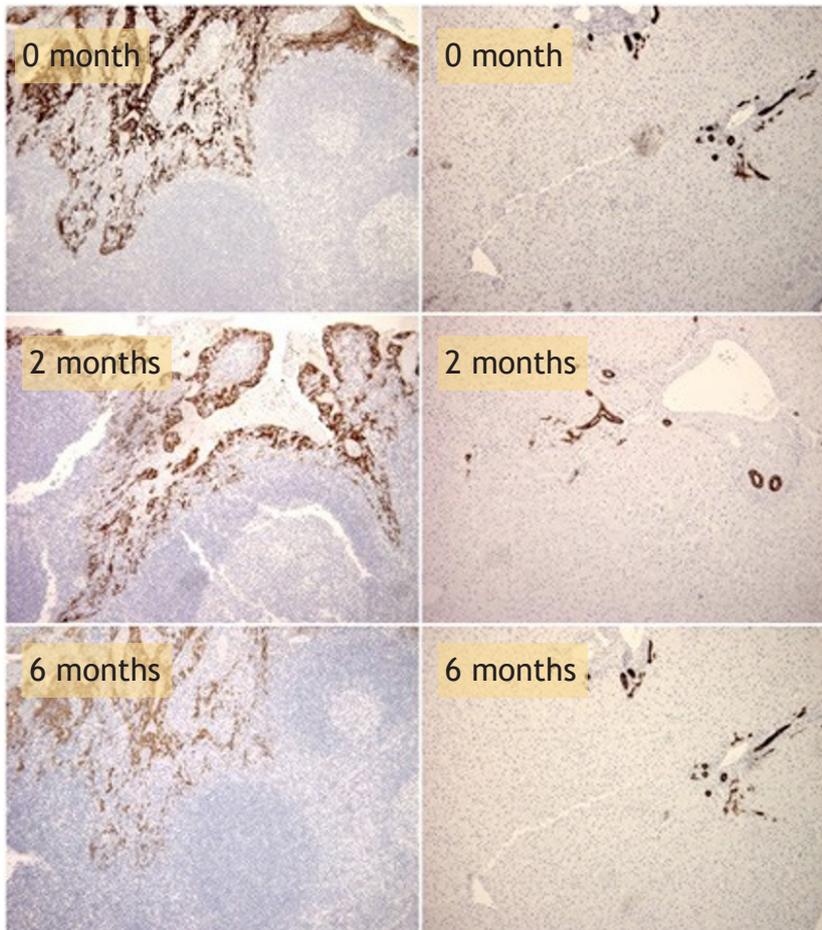


*Stress test of Optibodies™: Stability of Optibodies™ has been tested with maturation of antibodies in +37°C for six months. Our antibody buffer offers great conditions and stability of proteins during the maturation test. EpCAM and SMA antibodies offer excellent staining pattern after six-month maturation in +37°C (images 1 and 2). Staining intensity of CK19 starts to drop gradually during maturation test, and staining intensity in tonsil tissue is weaker in 2 months' time point and 6 months' time point compared to the starting point. However, the staining intensity is still good and sufficient in tonsil tissue. In liver tissue, difference of the intensity was not observed.*





**Figure 2.** EpCAM, clone BS14, stained kidney sections with matured antibody and 1:100 dilution. Maturation was not affected by the stability of this antibody.



**Figure 3.** CK19, clone BS23, stained tonsil and liver sections with matured antibody and 1:200 dilution. Maturation slightly affected by the stability of CK19 antibody. Intensity of the label in tonsil section decreased during maturation. Maturation has no effect on the label intensity of the bile ducts of liver.

## Ordering

*Orders may be placed by any of the following methods:*

---

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# Optibodies™ -

## Optimal results for clinically important antibodies

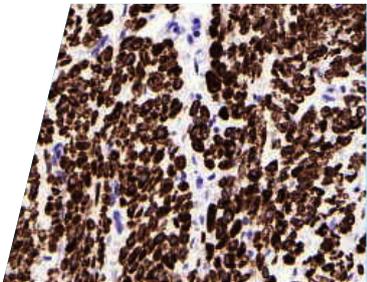
Our experts have continuously been working with new, clinically important markers and antibodies. Our laboratory takes part in external quality assurance programs for immunohistochemistry.

Immunohistochemical protocols with Optibodies™ have again been awarded excellent results in NordiQC schemes. We would like to promote the standardization and quality of immunohistochemistry of our laboratory with Optibodies™, which fulfill the optimal staining criteria of immunohistochemistry according to the NordiQC assessments.

The latest series of Nordic Immunohistochemical Quality Control (NordiQC) schemes have led to the optimal result with the following Optibodies™:

Antibody	Cat#	Clone	NordicQC Run
Cytokeratin PAN	BSH-7124-1	BS5	Run 41 & 47
Synaptophysin	BSH-7385-1	BS15	Run 43
Napsin A	BSH-2002-1	BS10	Run 44
SOX10	BSH-7959-1	BS7	Run 45 & 48
EpCAM	BSH-7402-1	BS14	Run 45
CD34	BSH-2008-1	BS72	Run 46
CK5	BSH-7123-1	BS42	Run 46
CK20	BSH-2000-1	BS101	Run 47
Ki67	BSH-7302-1	BS4	Run B22
Desmin	BSH-7082-1	BS21	Run 48
Melan A	BSH-2003-1	BS52	Run 49
MLH1	BSH-7208-1	BS29	Run 49
CK19	BSH-7240-1	BS23	Run 50
CD23	BSH-3004-1	BS20	Run 50
HER2	BSH-7182-1	BS24	Run B23

All Optibodies™ are available as samples, so make a comparison test to enhance your quality of immunohistochemistry!



Tell us more about your research  
– we can help you reach your goals

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