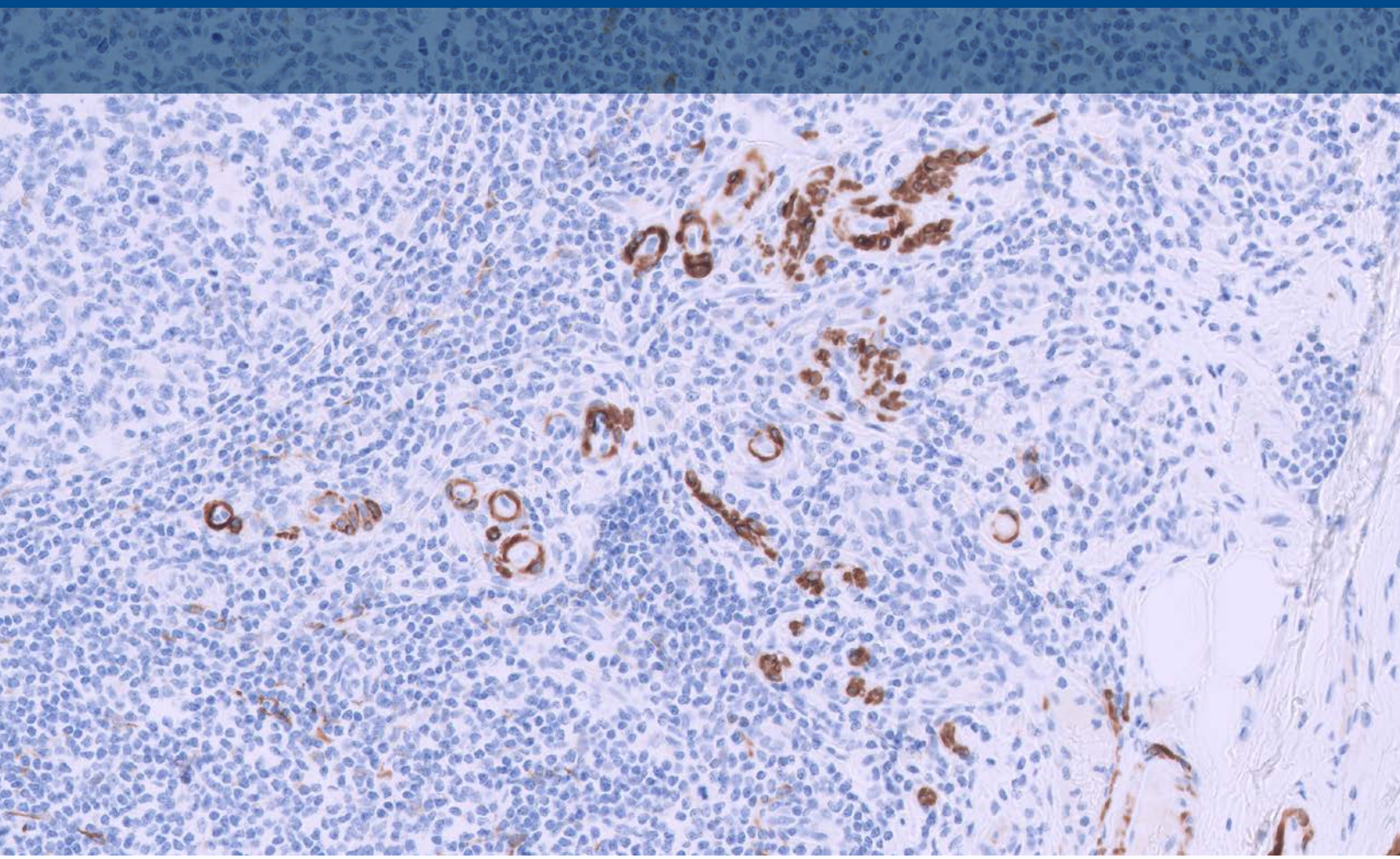
Agilent Dako

FLEX Ready-to-Use Atlas of Controls

Third Edition



Agilent

Trusted Answers



Committed to raising the bar for higher quality

For years, pathology laboratories around the world have had to face and adapt to an increasing number of challenges, while continuing to strive to deliver accurate immunohistochemistry (IHC) results for patients. One of the most important of these challenges is to make continuous improvements to maintain the quality of staining, and to be a professional counterpart and key resource to oncologists and other clinicians. To help with this, organizations such as CAP, UK NEQAS, cIQc, and NordiQC have successfully implemented many initiatives to improve standardization in IHC.

Agilent Dako FLEX Ready-to-Use (RTU) primary antibodies work on formalin-fixed, paraffin-embedded tissue sections as a set of dedicated reagents for clinical routine diagnostics. The FLEX RTU concept focuses on delivering the correct diagnostic end result while improving time to diagnosis, reducing manual error rates, and simplifying information retrieval through barcoded labeling. Equally important, it maintains and delivers reliable staining performance.

The FLEX RTU concept was launched in 2008, and the staining performance of the products was developed in collaboration with leading pathologists and their laboratory managers.

This Atlas of Controls is by no means intended to override the information contained in the Instructions for Use and the professional judgment of a certified pathologist. The contents and descriptions of staining patterns are provided to add additional information and suggestions for quality control only, and Agilent neither claims nor warrants the universal validity of the information provided, as there are national and professional differences in the acceptance of the relevance of various markers and related quality control tissues.

The key to successful IHC results is control tissue

Atlas of Controls, third edition, shows stains of control tissue for each FLEX RTU antibody. The stains provide guidance in assessing whether optimal staining results have been achieved when using any of FLEX RTU antibodies on Agilent Dako staining platforms.

- **High expression**: The tissue type(s) should provide **moderate** to **strong** staining intensity in the specified cell types and cellular structures. Background staining should be nonexisting or minimal.
- **Low expression**: The tissue type(s) should provide **weak** to **moderate** staining intensity in the specified cell types and cellular structures.
- **Non-expression**: The cell type(s) that should be negative are typically intrinsic, meaning no extra tissue types are needed for this control.

Please note that for some antibodies only HE structures are identified, and for some antibodies no benign control tissue exists. Usually, many cell types will be negative for each antibody and only important cell types will be indicated in the non-expression row.



All stains presented in Atlas of Controls were made by Histology-DK, R&D, Agilent Technologies, Glostrup, Denmark. All stainings were done according to the protocols in the Instructions for Use for each FLEX RTU antibody on Dako Omnis Family of Instruments or Autostainer Link 48 staining platform, respectively. The slides were scanned on Philips IntelliSite Pathology Solution and relevant areas of the whole slide image were selected.

How to read

Antibody: Monoclonal Mouse Anti-Human Cytokeratin 19

Clone: RCK108

Code: GA615 IR615

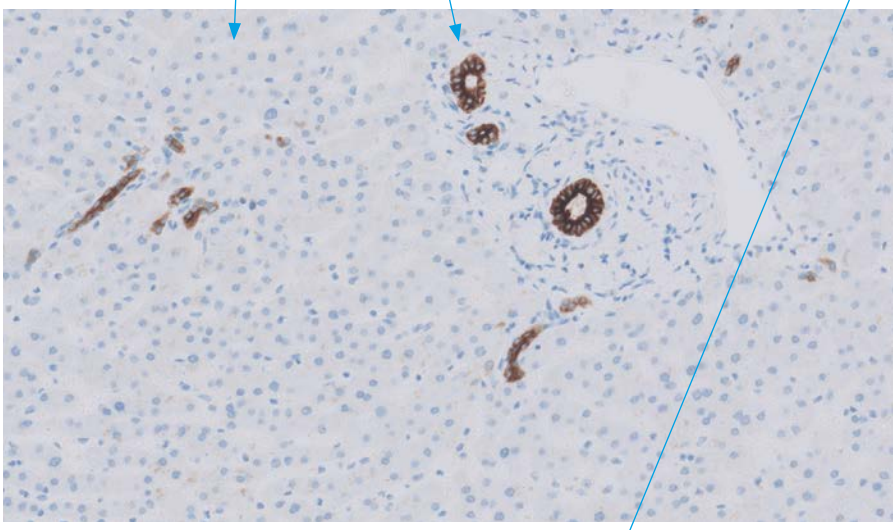
Dako Omnis

Autostainer Link 48

Cellular location of staining reaction

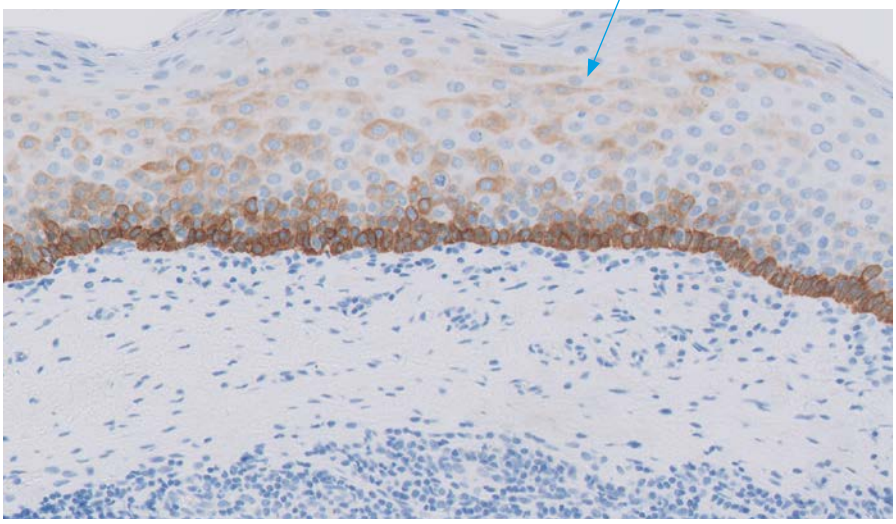
Not applicable

Reaction Location	Cytoplasm	
Quality Control	**Liver**	**Tonsil**
High Expression	Epithelial cells of bile ducts show a moderate to strong staining reaction.	NA
Low Expression	NA	Squamous epithelial cells focally show a weak to moderate staining reaction that is strongest in the basal layer.
Non-expression	Hepatocytes	**NA**



Tissue type and magnification

Liver (10x)



Tonsil (20x)

60

Atlas of Controls - Table of Contents

Actin (Muscle) . . . 8
Actin (Smooth Muscle) . . . 9
Alpha-1-Antitrypsin . . . 10
Alpha-1-Fetoprotein . . . 11
AMACR . . . 12
Amyloid A . . . 13
B-Cell-Specific Activator Protein . . . 14
BCL2 Oncoprotein . . . 15
BCL6 Protein . . . 16
Beta-Catenin . . . 17
CA 125 . . . 18
Calcitonin . . . 19
Caldesmon . . . 20
Calretinin . . . 21
Carcinoembryonic Antigen . . . 22
CD1a . . . 23
CD2 . . . 24
CD3 . . . 25
CD4 . . . 26
CD5 . . . 27
CD7 . . . 28
CD8 . . . 29
CD10 . . . 30
CD15 . . . 31
CD19 . . . 32
CD20cy . . . 33
CD21 . . . 34
CD23 . . . 35
CD30 . . . 36
CD31, Endothelial Cell . . . 37
CD34, Class II . . . 38
CD43 . . . 39
CD45, Leucocyte Common Antigen . . . 40
CD56 . . . 41
CD57 . . . 42
CD68 . . . 43
CD68 . . . 44
CD79α . . . 45
CD99, MIC2 Gene Products, Ewing's Sarcoma Marker . . . 46
CD138 . . . 47
CD246, ALK Protein (ALK1) . . . 48
CD246, ALK Protein (OTI1A4) . . . 49
CDX-2 . . . 50
Chorionic Gonadotropin . . . 51
Chromogranin A . . . 52
Cyclin D1 . . . 53
Cytokeratin . . . 54
Cytokeratin 5/6 . . . 55
Cytokeratin 7 . . . 56
Cytokeratin 8/18 (Dako Omnis Family) . . . 57
Cytokeratin 8/18 (Autostainer Link 48) . . . 58
Cytokeratin 17 . . . 59
Cytokeratin 18 . . . 60
Cytokeratin 19 . . . 61
Cytokeratin 20 . . . 62
Cytokeratin, High Molecular Weight . . . 63
Cytomegalovirus . . . 64
Desmin (DAK-Desmin) . . . 65
Desmin (D33) . . . 66
E-Cadherin . . . 67
Epithelial Antigen . . . 68
Epithelial Membrane Antigen . . . 69

Epstein-Barr Virus, LMP . . . 70
Estrogen Receptor α . . . 71
Ets-Related Gene (ERG) . . . 72
Gastrin . . . 73
GCDFP-15 . . . 74
Glial Fibrillary Acidic Protein . . . 75
Helicobacter Pylori . . . 76
Hepatocyte . . . 77
Herpes Simplex Virus Type 1 . . . 78
IgA . . . 79
IgG . . . 80
IgM . . . 81
Inhibin α . . . 82
Insulin . . . 83
Kappa Light Chains . . . 84
Ki-67 Antigen . . . 85
Lambda Light Chains . . . 86
Mammaglobin . . . 87
Mast Cell Tryptase . . . 88
Melan-A . . . 89
Melanosome . . . 90
MUC2 . . . 91
MUC5AC . . . 92
MUM1 Protein . . . 93
MutL Protein Homolog 1 (MLH1) . . . 94
MutS Protein Homolog 2 (MSH2) . . . 95
MutS Protein Homolog 6 (MSH6) . . . 96
Myeloperoxidase . . . 97
Myogenin . . . 98
Myosin Heavy Chain (Smooth Muscle) . . . 99
Napsin A . . . 100
Neurofilament Protein . . . 101
Neuron-Specific Enolase . . . 102
Nucleophosmin . . . 103
Octamer-Binding Transcription Factor 3/4 . . . 104
p16 Protein . . . 105
p40 Protein . . . 106
p53 Protein . . . 107
p63 Protein . . . 108
PAX8 . . . 109
Placental Alkaline Phosphatase . . . 110
Podoplanin (Dako Omnis Family) . . . 111
Podoplanin (Autostainer Link 48) . . . 112
Postmeiotic Segregation Increased 2 (PSM2) . . . 113
Progesterone Receptor . . . 114
Progesterone Receptor . . . 115
Prostate-Specific Membrane Antigen . . . 116
Prostein . . . 117
Renal Cell Carcinoma Marker . . . 118
S100 . . . 119
Synaptophysin . . . 120
Terminal Deoxynucleotidyl Transferase (TdT) . . . 121
Thyroglobulin . . . 122
Thyroid Transcription Factor . . . 123
TTF-1 (Thyroid Transcription Factor) . . . 124
Tyrosinase . . . 125
Villin . . . 126
Vimentin . . . 127
Von Willebrand Factor . . . 128
Wilms' Tumor 1 Protein . . . 129

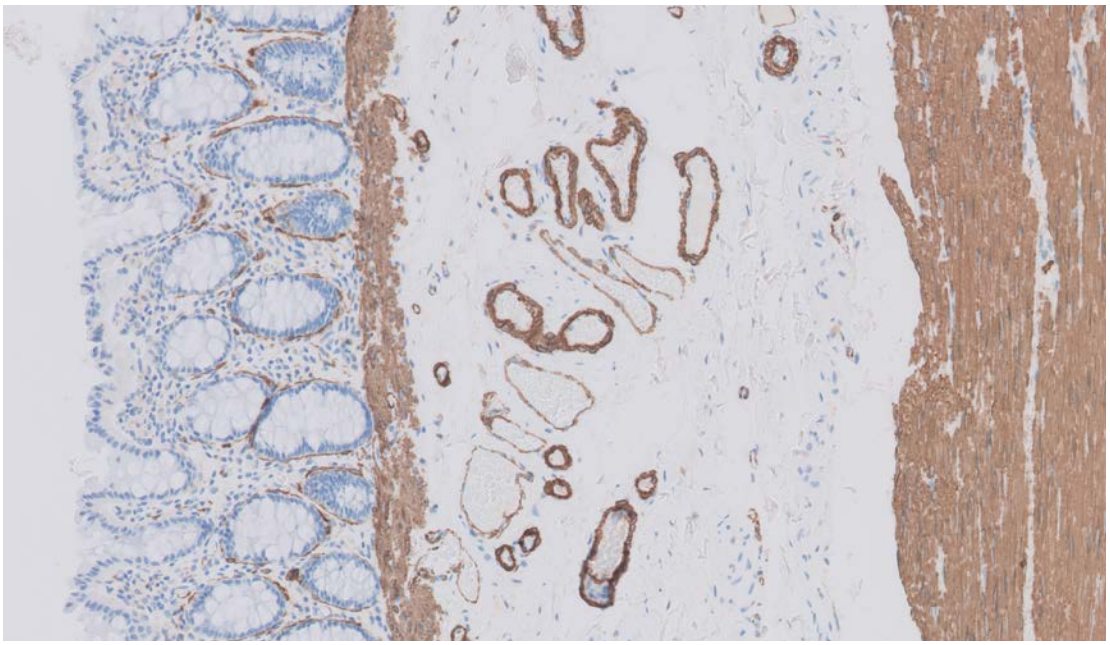
Monoclonal Mouse Anti-Human

Antibody: **Actin (Muscle)**

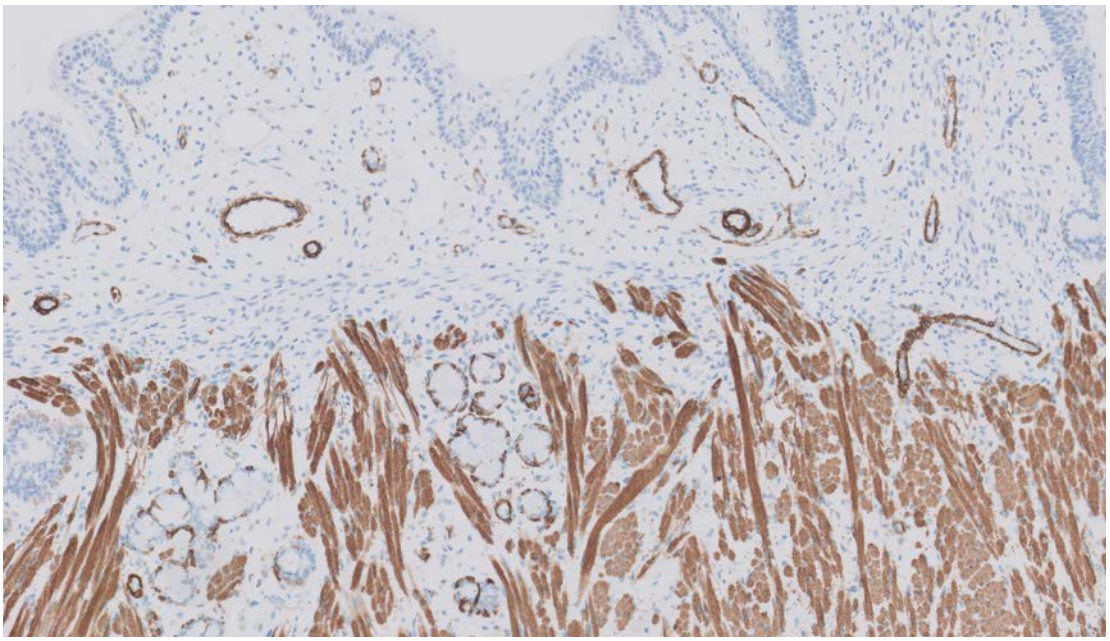
Clone: HHF35

Code: IR700

Reaction Location	Cytoplasm	
Quality Control	**Colon/Appendix**	**Tongue**
High Expression	The smooth muscle cells in the lamina muscularis mucosa show a moderate to strong staining reaction.	The striated muscle cells in tongue show a moderate to strong staining reaction.
Low Expression	NA	The myoepithelial cells lining the mucous/salivary glands show a weak to moderate staining reaction.
Non-expression	Epithelial cells.	NA



Colon (10x)



Tongue (10x)

Monoclonal Mouse Anti-Human

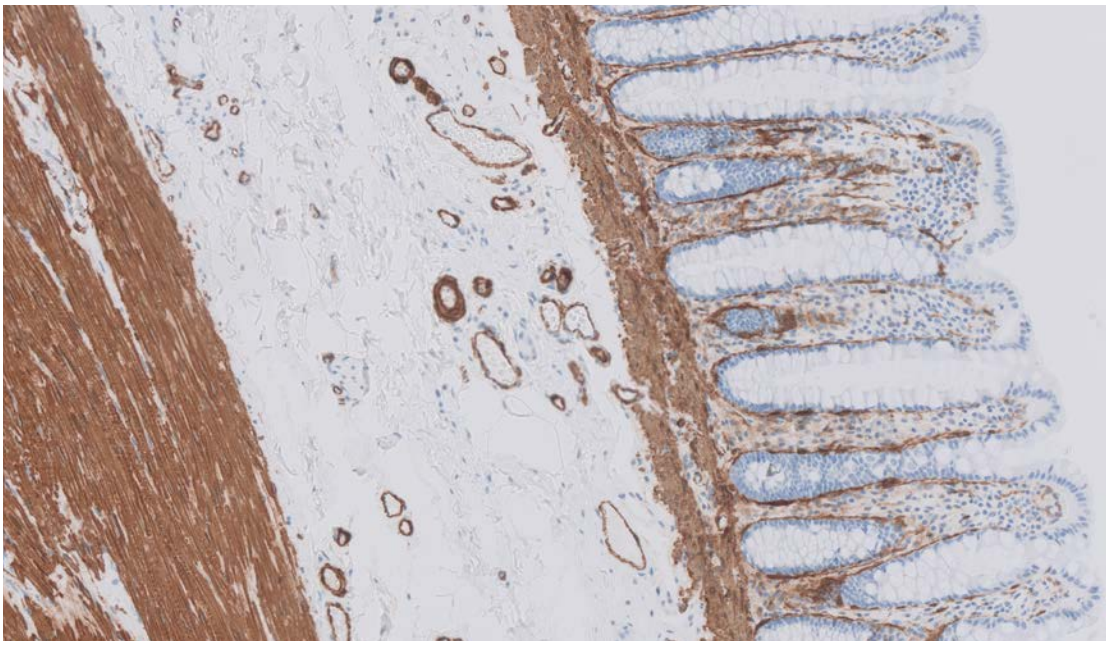
Antibody: **Actin (Smooth Muscle)**

Clone: 1A4

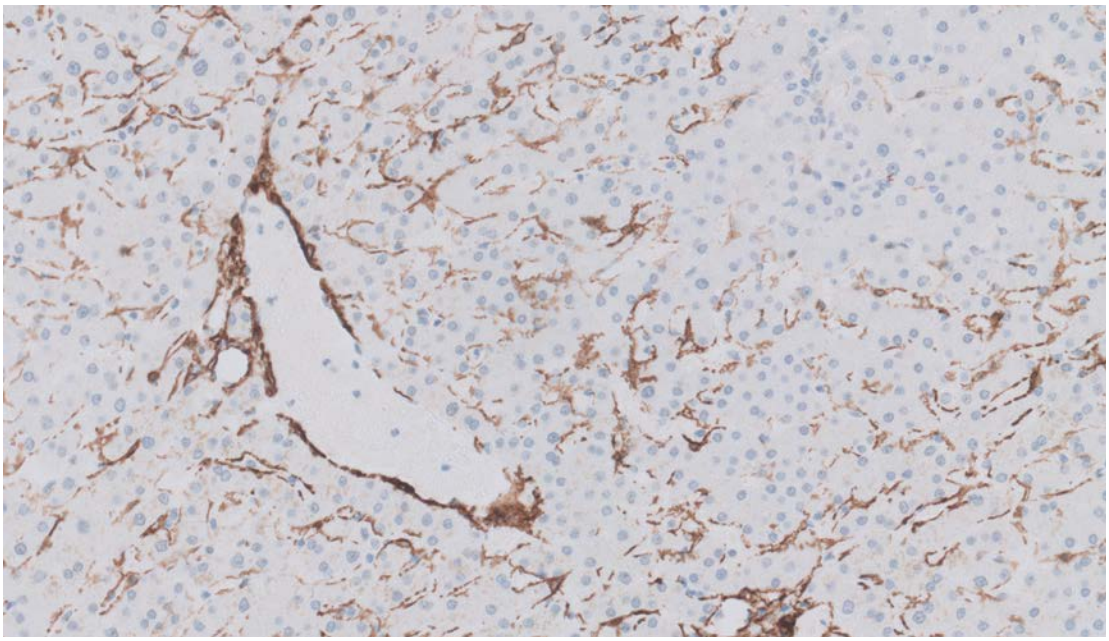
Code: GA611 | IR611

Reaction Location	Cytoplasm	
Quality Control	**Colon/Appendix**	**Liver**
High Expression	Smooth muscle cells in the lamina muscularis mucosa show a moderate to strong staining reaction.	Smooth muscle cells in large vessels show a moderate to strong staining reaction.
Low Expression	NA	Smooth muscle cells lining the liver sinusoids show a weak to moderate staining reaction.
Non-expression	Epithelial cells.	Hepatocytes

Note: No staining reaction should be seen in appendiceal columnar epithelial cells, lymphocytes or liver cells.



Colon (20x)



Liver (20x)

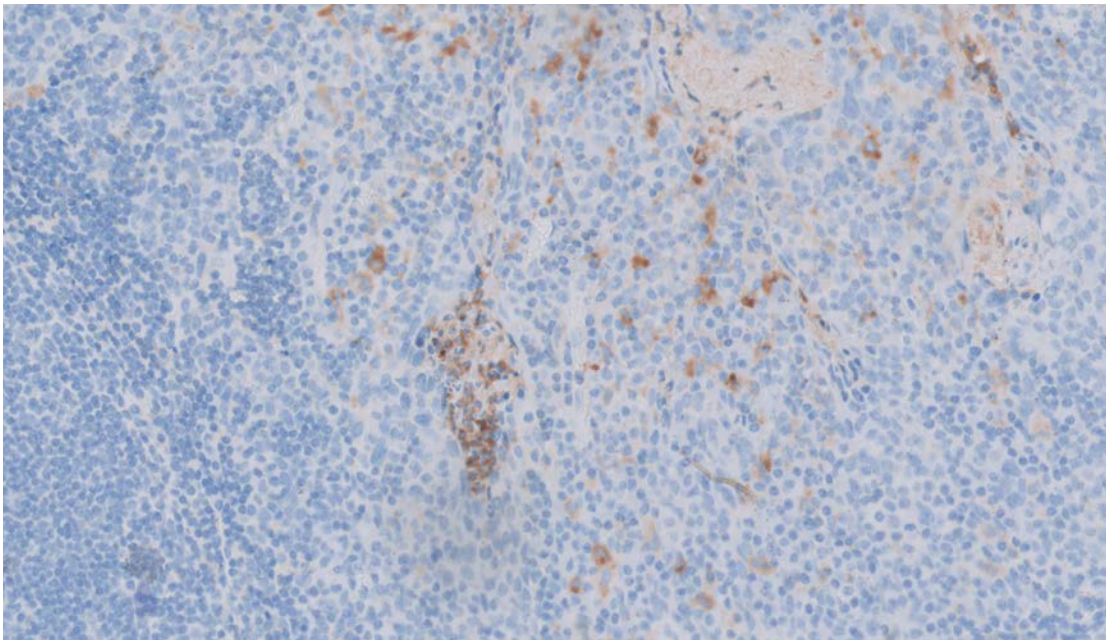
Polyclonal Rabbit Anti-Human

Antibody: **Alpha-1-Antitrypsin**

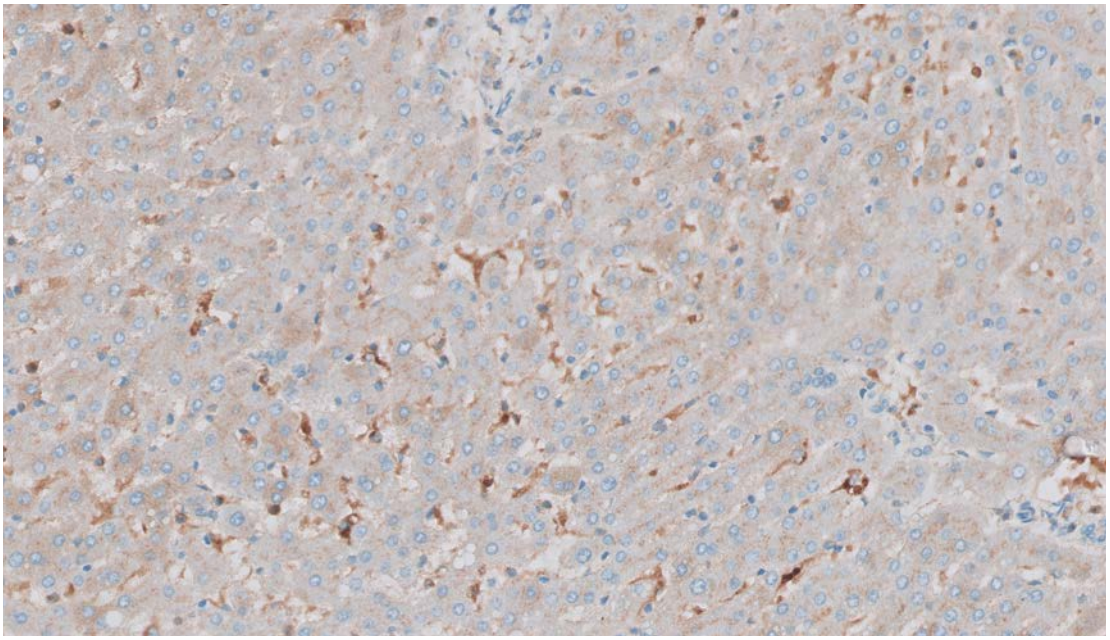
Clone: Polyclonal

Code: GA505

Reaction Location	Cytoplasm	
Quality Control	**Tonsil**	**Liver**
High Expression	Macrophages and neutrophil granulocytes show a moderate to strong staining reaction.	Kupffer cells show a moderate to strong staining reaction.
Low Expression	NA	Hepatocytes show a weak to moderate staining reaction.
Non-expression	Lymphocytes	NA



Tonsil (20x)



Liver (20x)

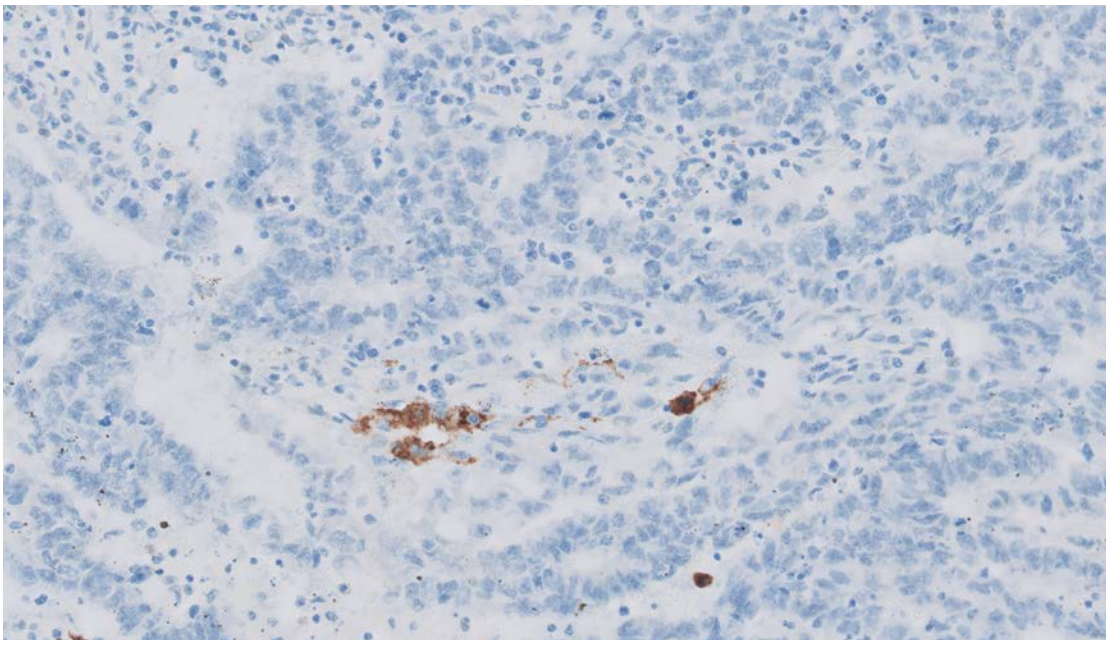
Polyclonal Rabbit Anti-Human

Antibody: **Alpha-1-Fetoprotein**

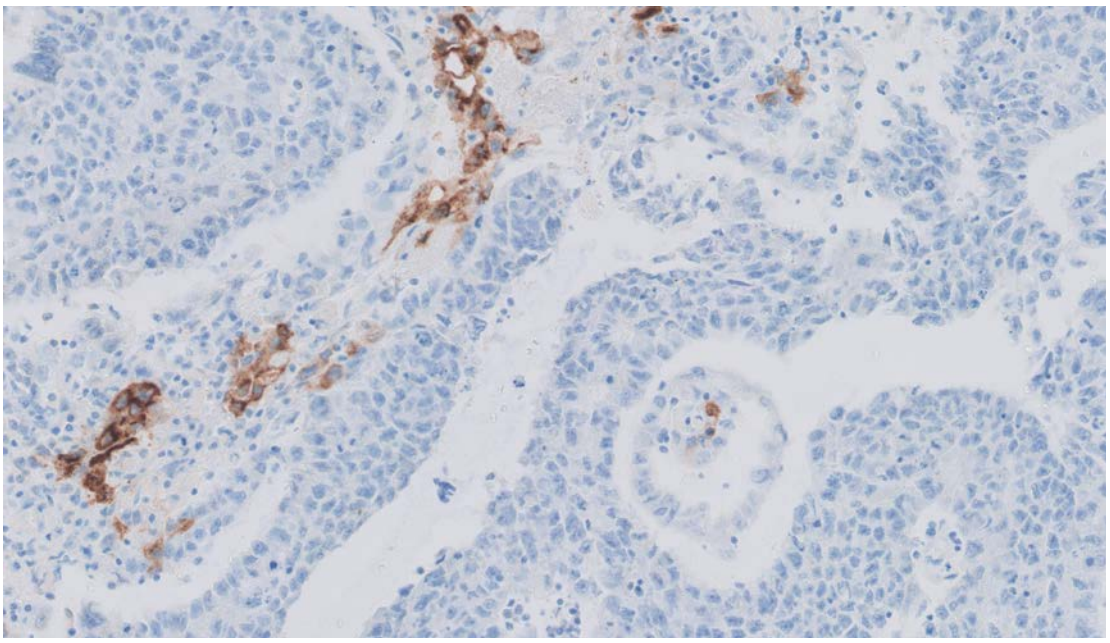
Clone: Polyclonal

Code: GA500

Reaction Location	Cytoplasm
Quality Control	**Embryonal carcinoma**
High Expression	Focally, neoplastic cells of embryonal carcinoma show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	NA



Embryonal carcinoma (20x)



Embryonal carcinoma (20x)

Monoclonal Rabbit Anti-Human

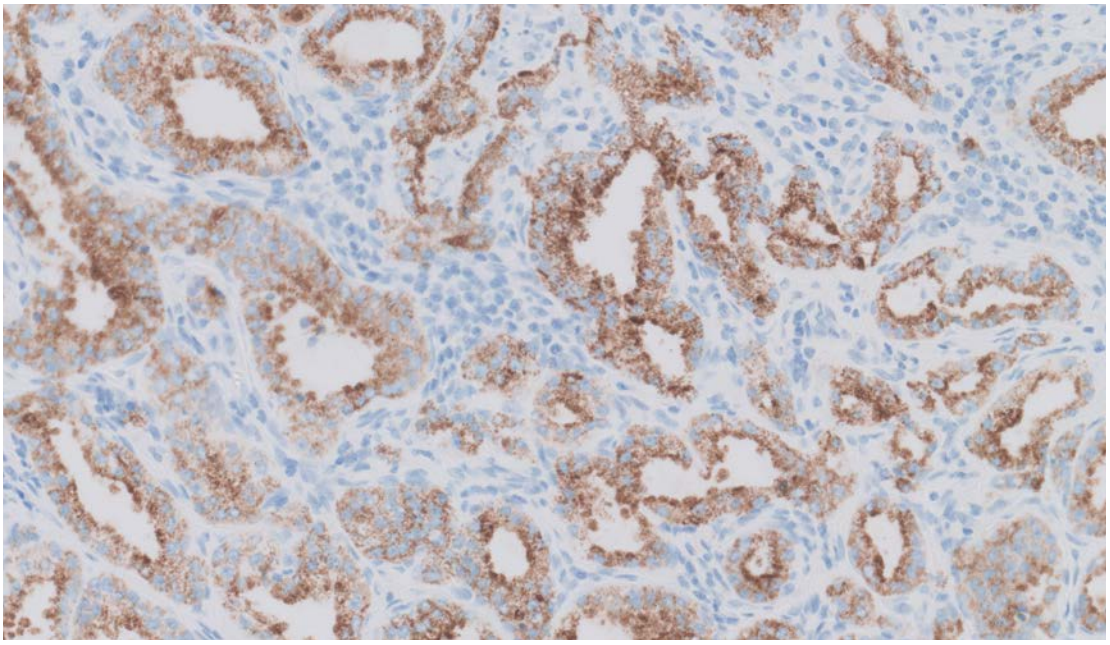
Antibody: **AMACR**

Clone: 13H4

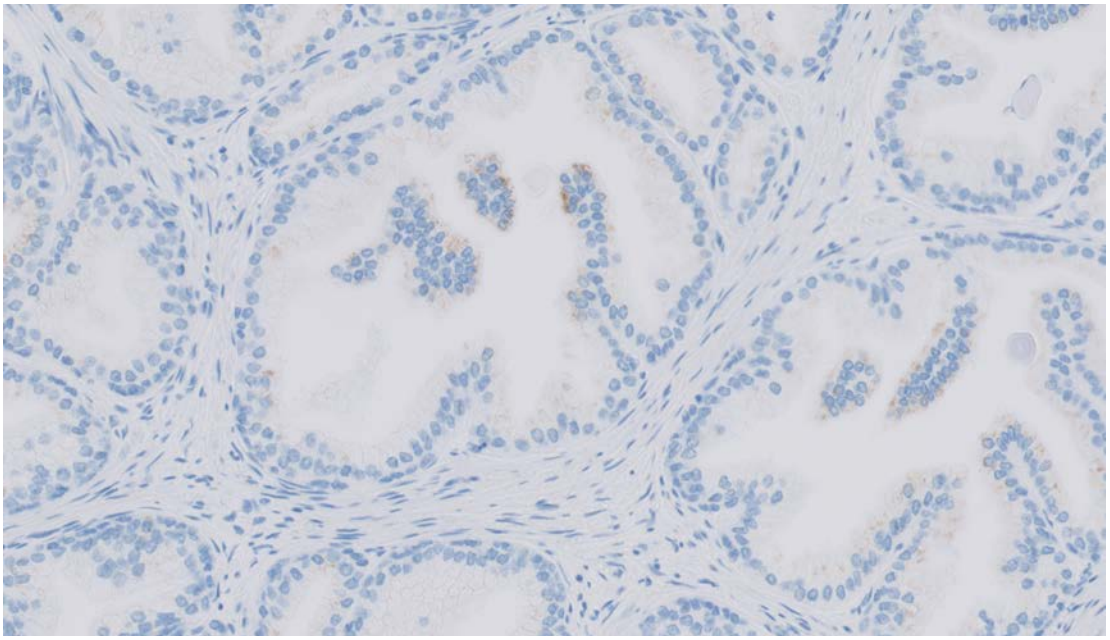
Code: GA060 | IR060

Reaction Location	Cytoplasm	
Quality Control	**Prostate adenocarcinoma**	**Benign prostatic hyperplasia**
High Expression	The majority of neoplastic cells show a moderate to strong staining reaction.	NA
Low Expression	NA	NA
Non-expression	NA	The epithelial cells of hyperplastic prostate glands are negative or only show a weak focal staining reaction.

Note: The epithelial cells in normal prostate should be negative or only show a focal staining reaction.



Prostate adenocarcinoma (20x)



Benign prostatic hyperplasia (20x)

Monoclonal Mouse Anti-Human

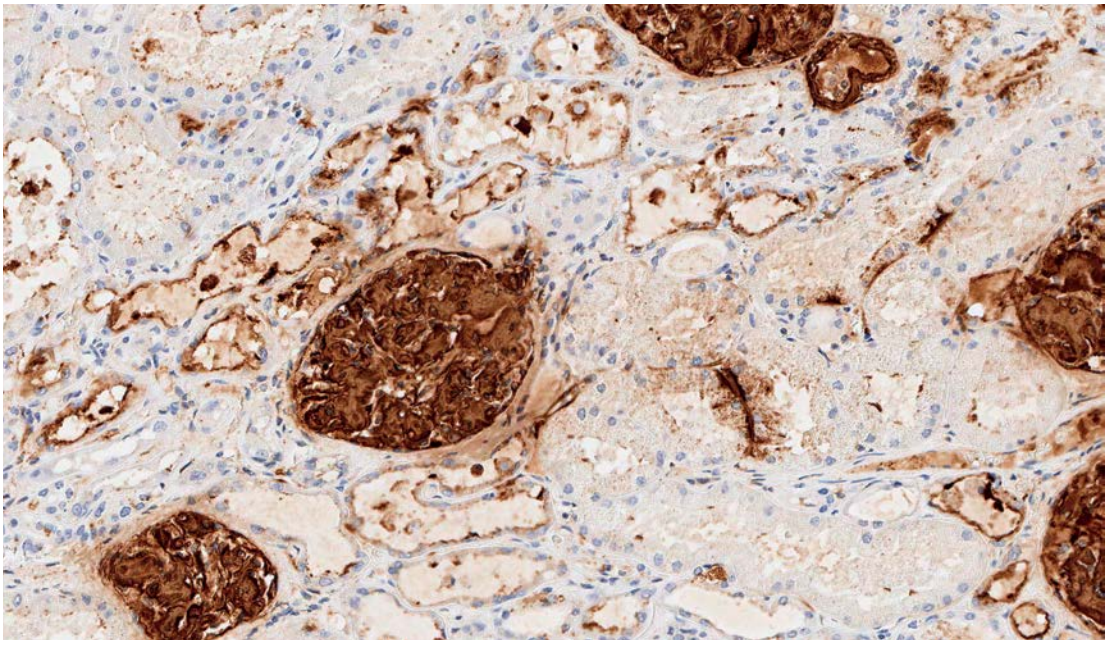
Antibody: **Amyloid A**

Clone: mc1

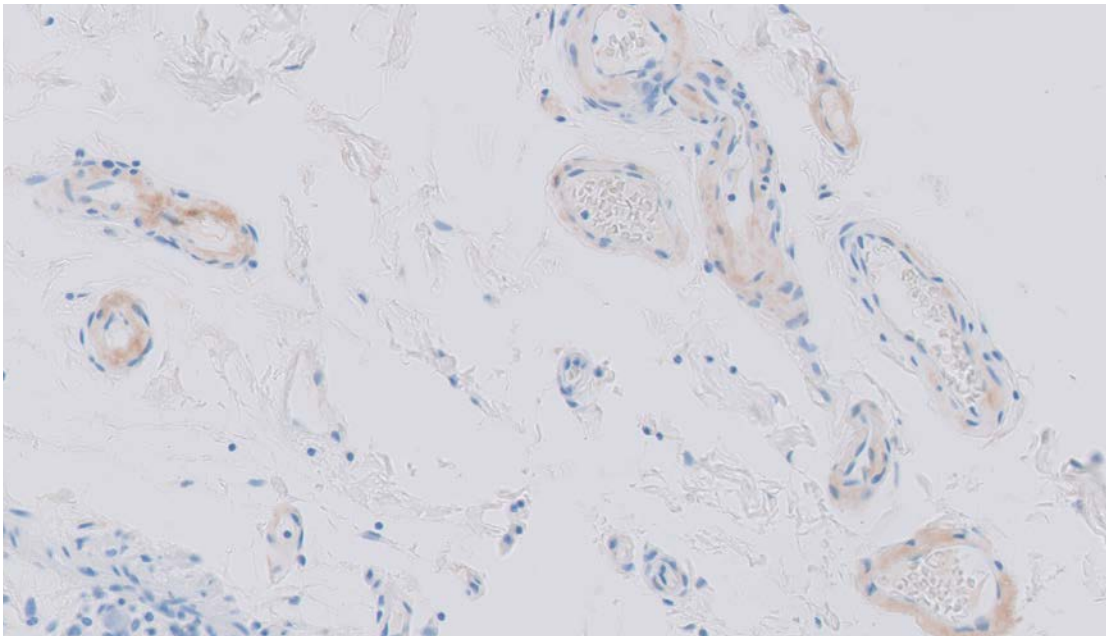
Code: GA605

Reaction Location	Extracellular and cytoplasm	
Quality Control	**Kidney with amyloidosis**	**Colon with amyloidosis**
High Expression	Large smooth muscle cells with deposits of amyloid A show a weak to strong staining reaction.	NA
Low Expression	Large smooth muscle cells with deposits of amyloid A show a weak to strong staining reaction.	Basal cells with amyloid A deposits show a weak to moderate staining reaction.
Non-expression	Normal tissue should be negative.	Normal tissue should be negative.

Note: The antibody occasionally labels serum.



Kidney (20x)



Colon (20x)

Monoclonal Mouse Anti-Human

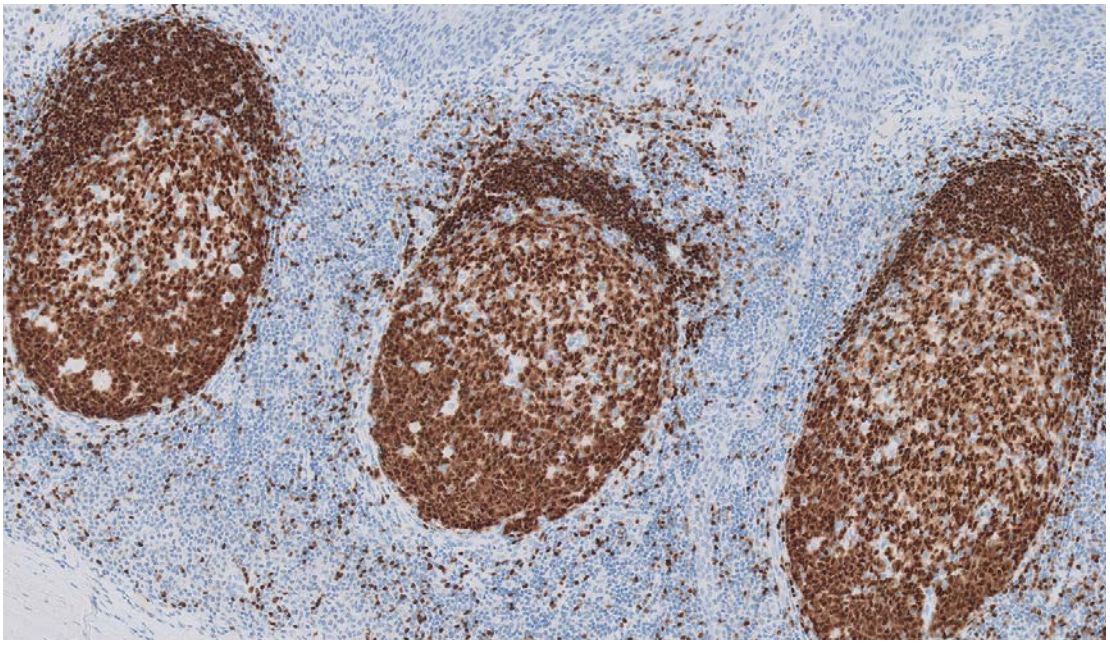
Antibody: **B-Cell-Specific Activator Protein**

Clone: DAK-Pax5

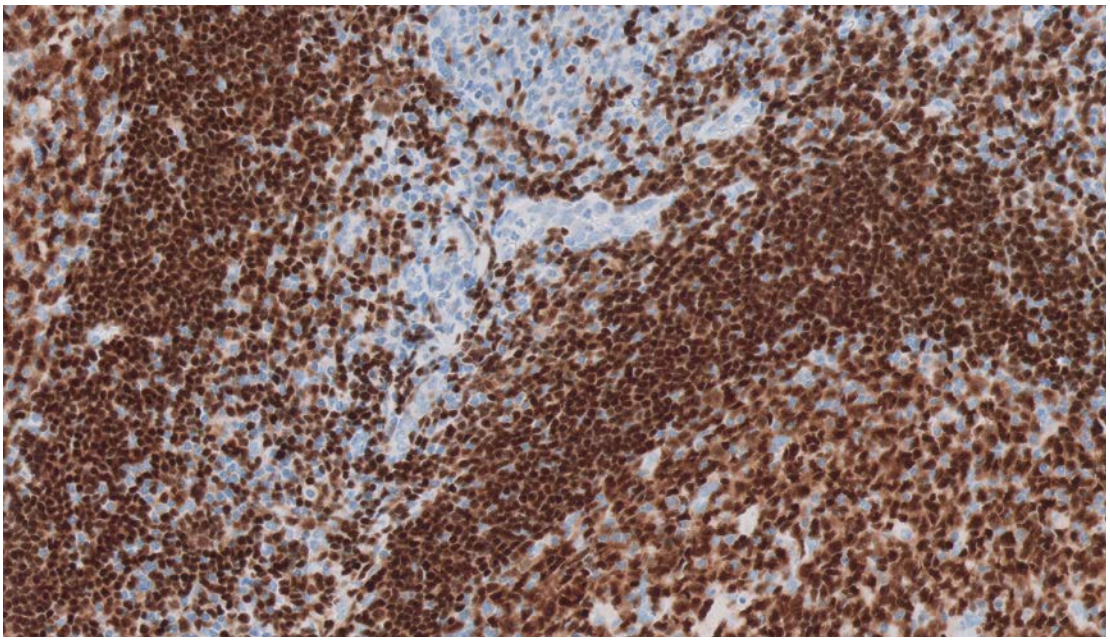
Code: GA650 | IR650

Reaction Location	Nucleus
Quality Control	**Tonsil**
High Expression	B cells in the mantle zone and in the germinal center show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	Squamous epithelial cells.

Note: A diffuse cytoplasmic staining reaction can be observed in cells with intense nuclear staining reaction.



Tonsil (10x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

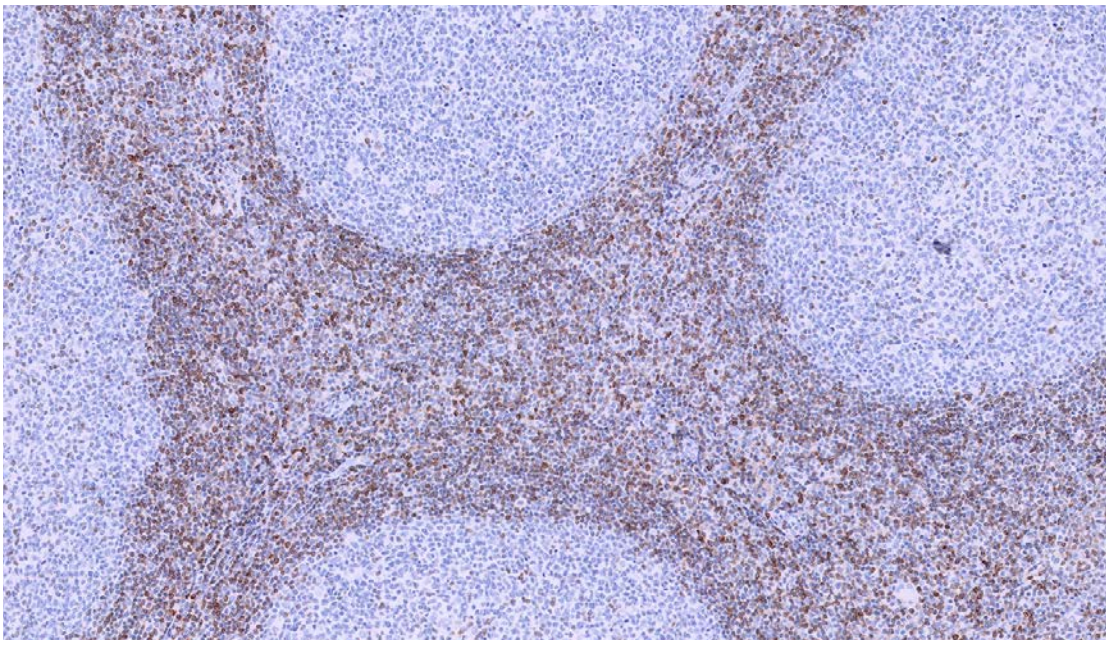
Antibody: **BCL2 Oncoprotein**

Clone: 124

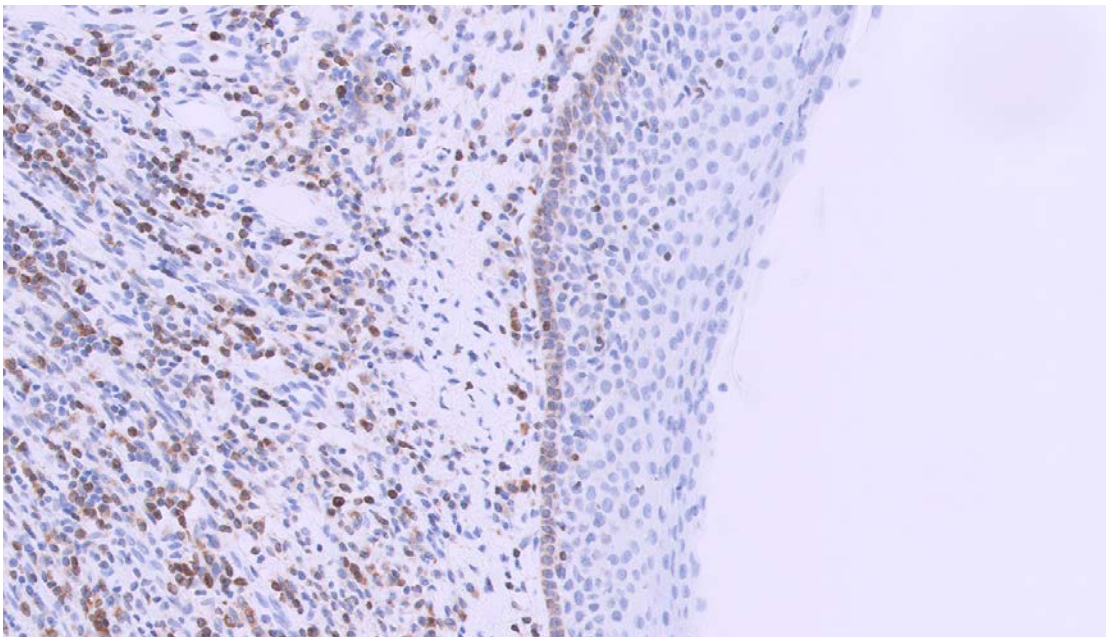
Code: GA614 | IR614

Reaction Location	Cytoplasm
Quality Control	**Tonsil**
High Expression	Interfollicular and mantle zone lymphocytes show a moderate to strong staining reaction.
Low Expression	Basal epithelial cells show a weak to moderate staining reaction.
Non-expression	Germinal center B cells.

Note: Some follicular lymphomas may be negative due to mutations in the epitope recognized by the antibody.



Tonsil (10x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

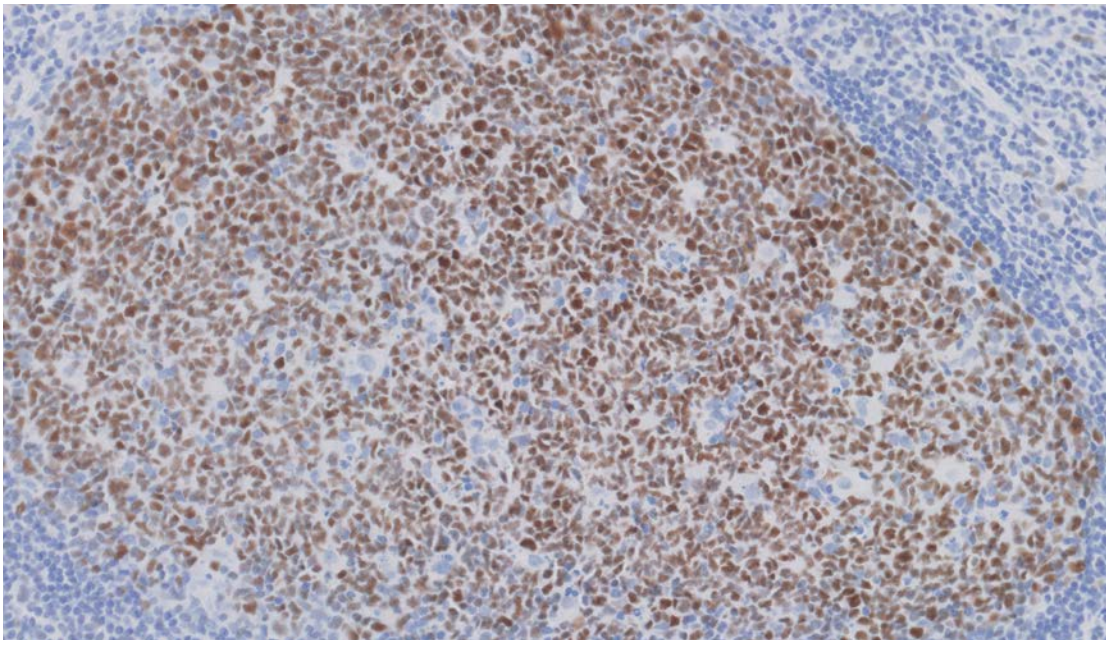
Antibody: **BCL6 Protein**

Clone: PG-B6p

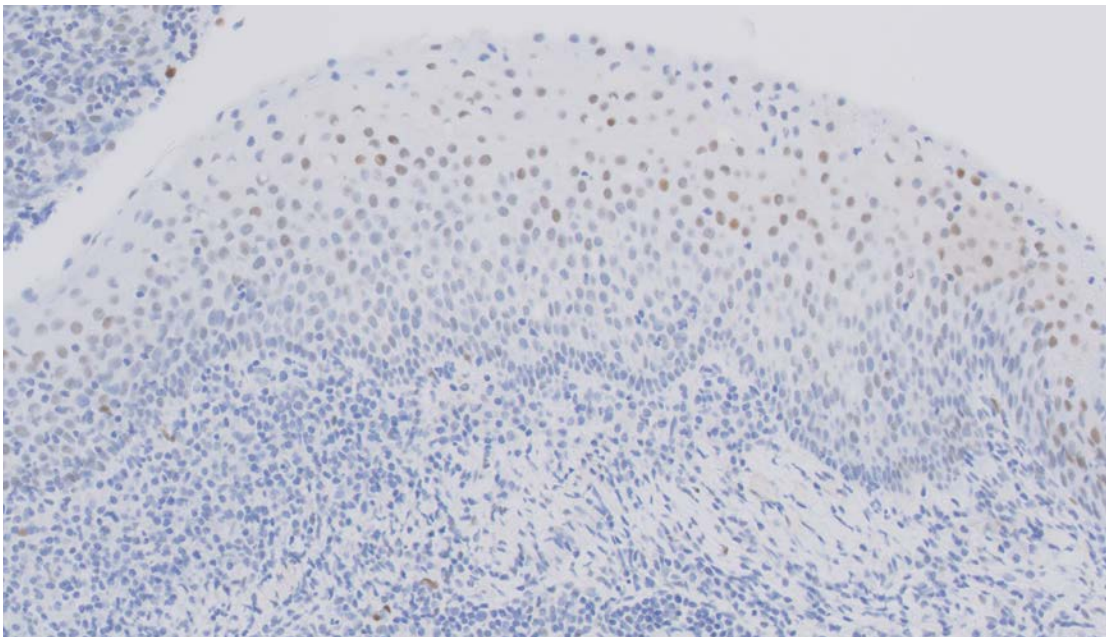
Code: GA625 | IR625

Reaction Location	Nucleus
Quality Control	**Tonsil**
High Expression	Germinal center B cells show a moderate to strong staining reaction.
Low Expression	Squamous epithelial cells show a weak to moderate staining reaction.
Non-expression	NA

Note: Approximately 10% of germinal center T cells in tonsil are labeled.



Tonsil (20x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

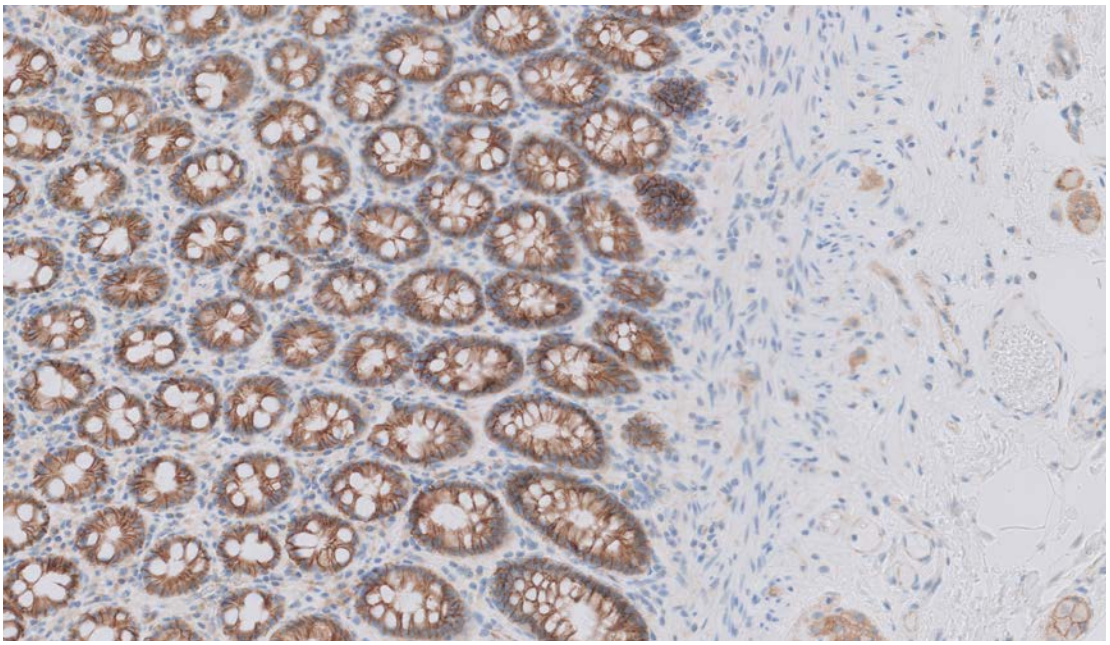
Antibody: **Beta-Catenin**

Clone: β-Catenin-1

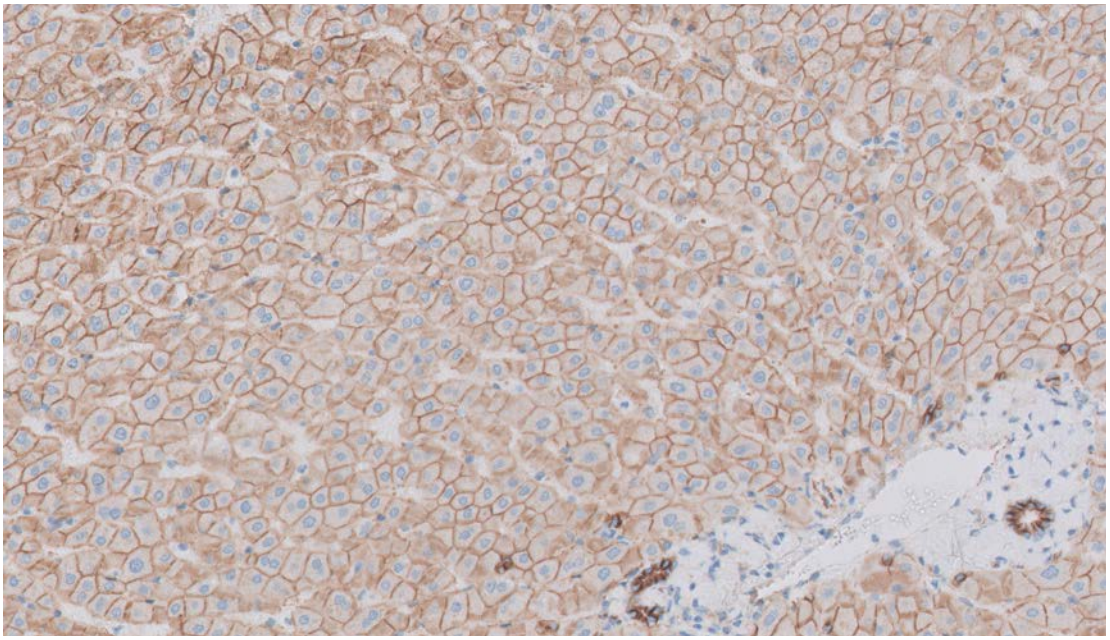
Code: GA702 | IR702

Reaction Location	Membrane	
Quality Control	**Colon/Appendix**	**Liver**
High Expression	Epithelial cells show a moderate to strong staining reaction.	Epithelial cells of bile ducts show a moderate to strong staining reaction.
Low Expression	NA	Hepatocytes show a weak to moderate staining reaction.
Non-expression	NA	NA

Note: A weak cytoplasmic reaction is accepted.



Colon (10x)



Liver (20x)

Monoclonal Mouse Anti-Human

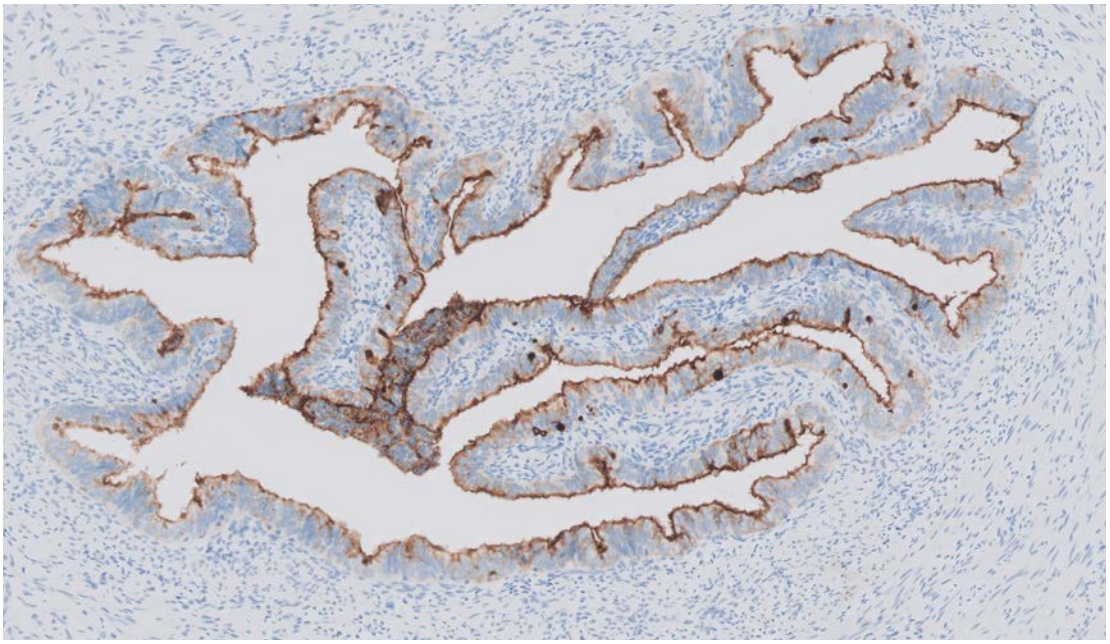
Antibody: **CA 125**

Clone: M11

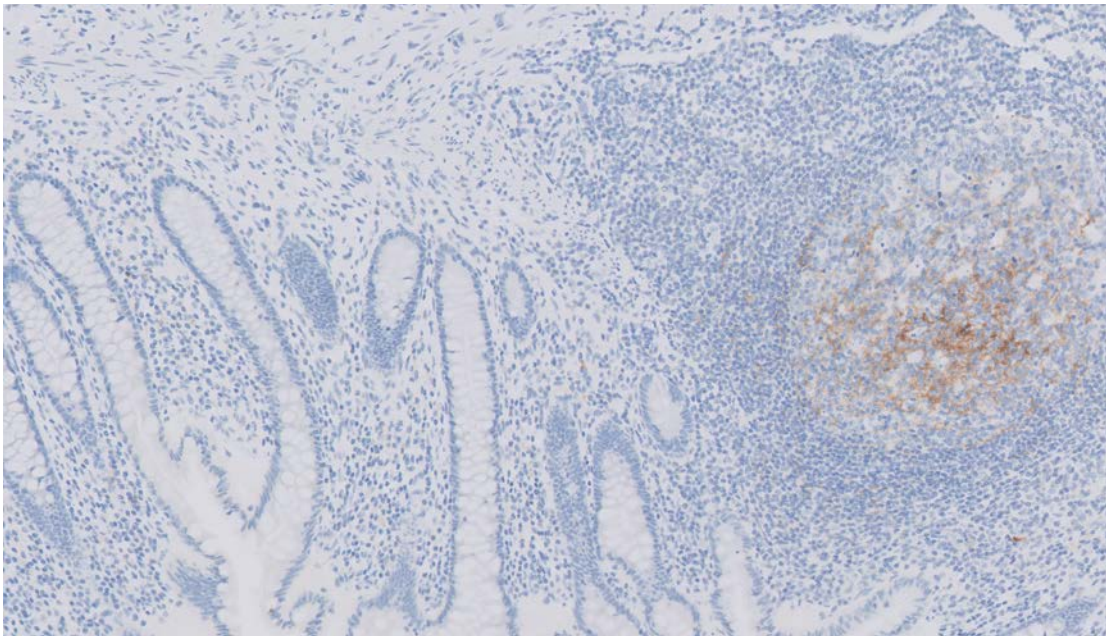
Code: GA701

Reaction Location	Membrane and cytoplasm	
Quality Control	**Fallopian tube**	**Appendix**
High Expression	The apical brush border of the epithelial cells show a moderate to strong staining reaction.	NA
Low Expression	NA	Follicular dendritic cells in germinal centers of Peyer's patches show a weak to moderate staining reaction.
Non-expression	NA	Epithelial cells.

Note: Scattered epithelial cells in fallopian tube also show a cytoplasmic reaction.



Fallopian tube (10x)



Appendix (10x)

Polyclonal Rabbit Anti-Human

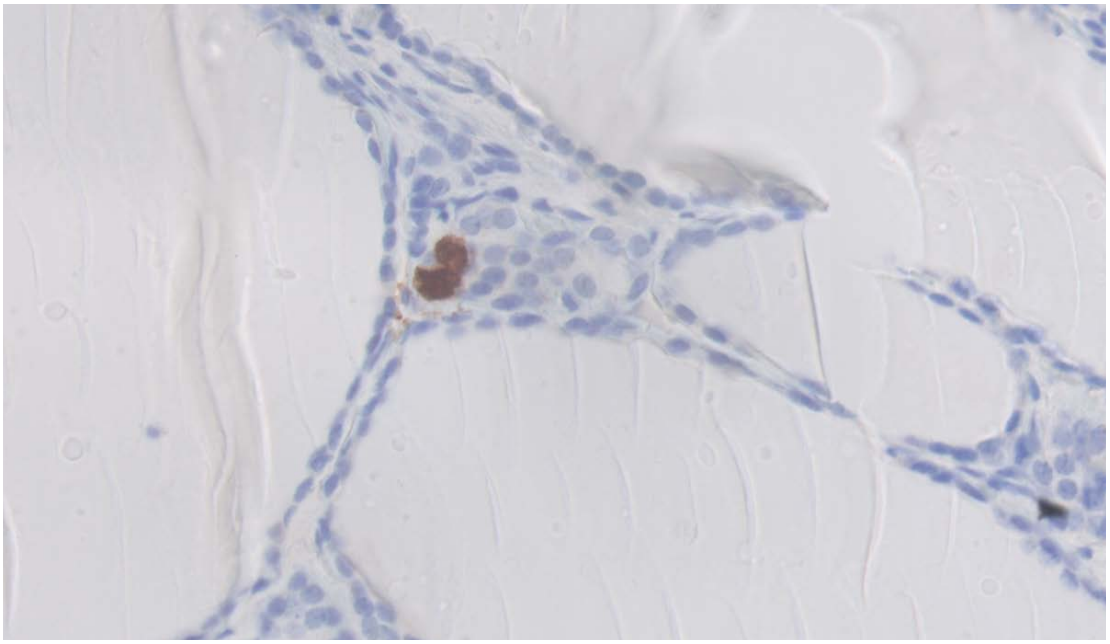
Antibody: **Calcitonin**

Clone: Polyclonal

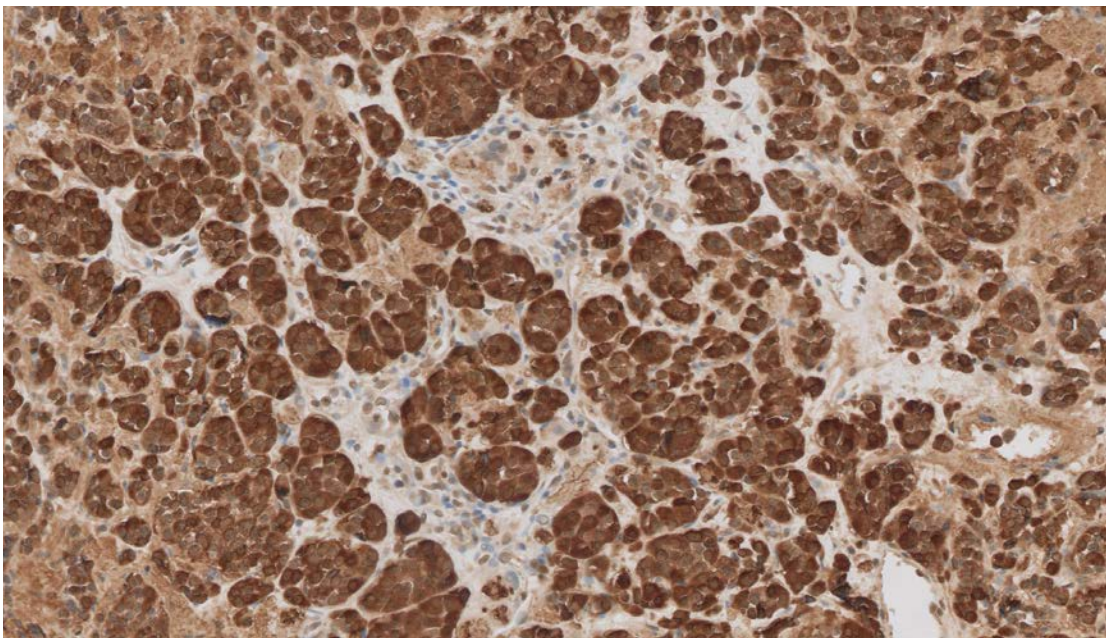
Code: GA515

Reaction Location	Cytoplasm	
Quality Control	**Thyroid**	**Medullary thyroid carcinoma**
High Expression	Scattered parafollicular C cells show a moderate to strong staining reaction.	Parafollicular C cells show a moderate to strong staining reaction.
Low Expression	NA	NA
Non-expression	NA	NA

Note: It is suggested to include a medullary thyroid carcinoma as control.



Thyroid (20x)



Medullary thyroid carcinoma (20x)

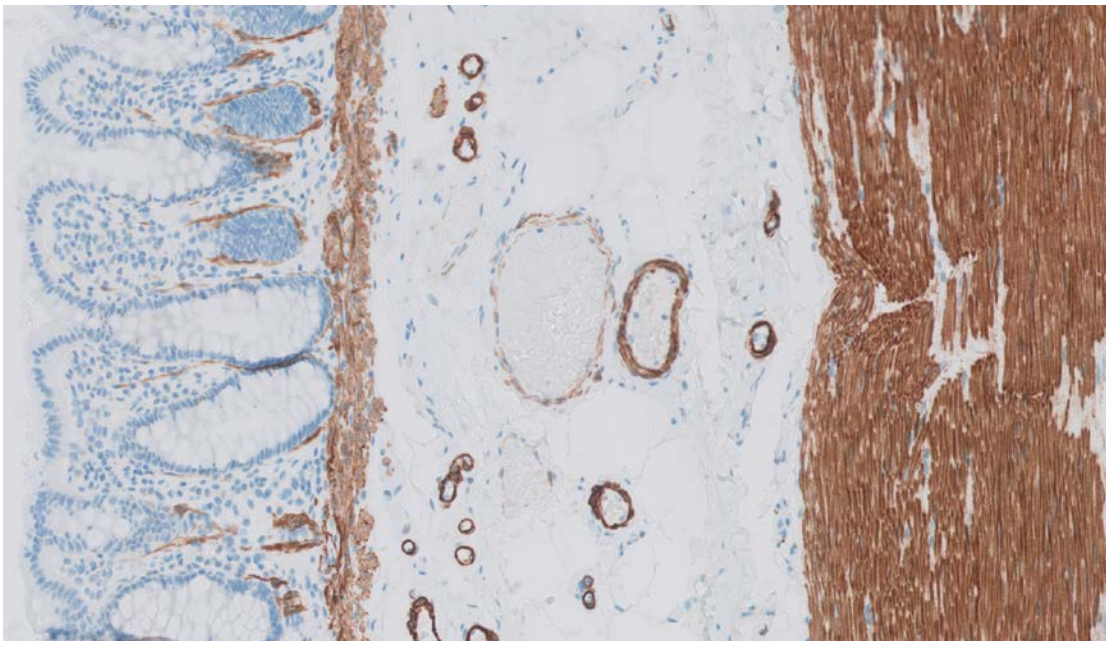
Monoclonal Mouse Anti-Human

Antibody: **Caldesmon**

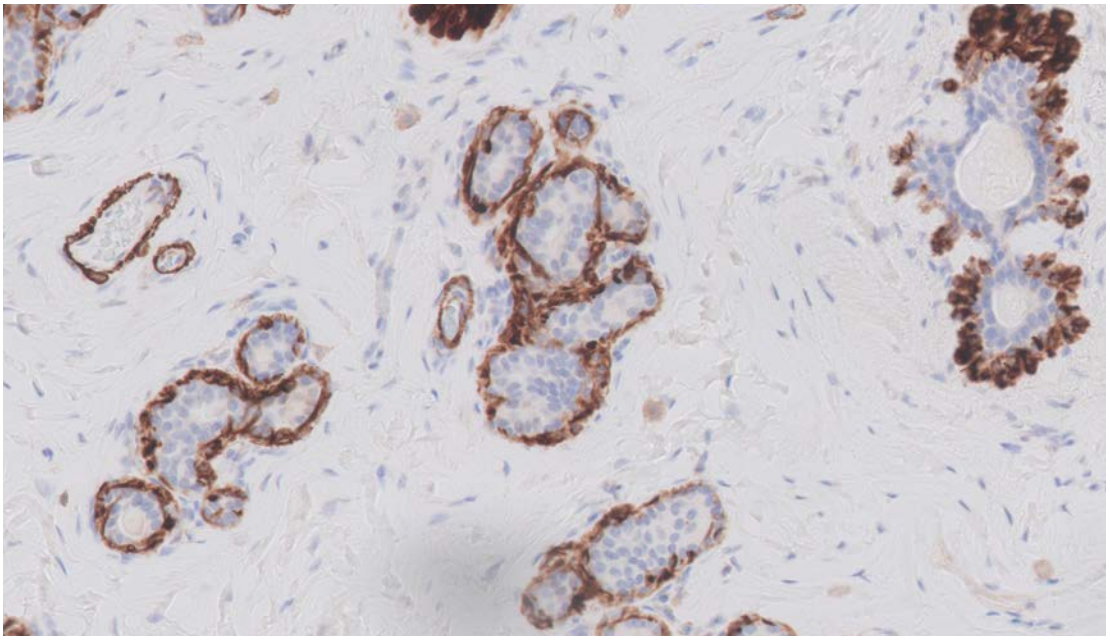
Clone: h-CD

Code: GA054 | IR054

Reaction Location	Cytoplasm	
Quality Control	**Colon/Appendix**	**Breast or breast hyperplasia**
High Expression	Smooth muscle cells in the tunica muscularis show a moderate to strong staining reaction.	Myoepithelial cells around the ducts show a moderate to strong staining reaction. Muscle cells in blood vessels show a strong staining reaction.
Low Expression	NA	NA
Non-expression	Epithelial cells.	Epithelial cells.



Colon (10x)



Breast (20x)

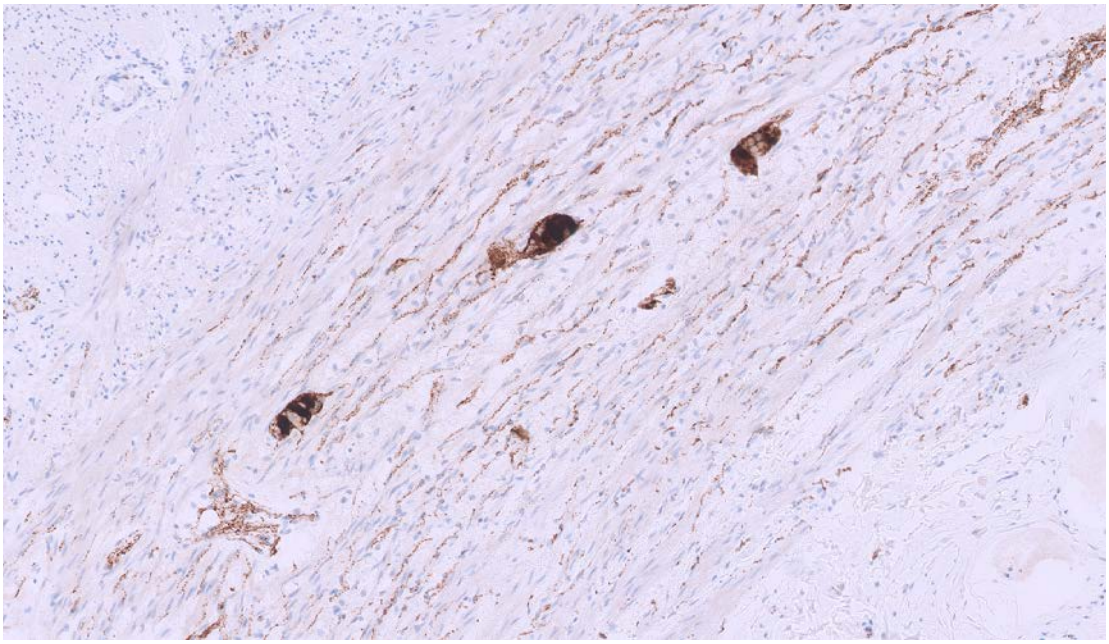
Monoclonal Mouse Anti-Human

Antibody: **Calretinin**

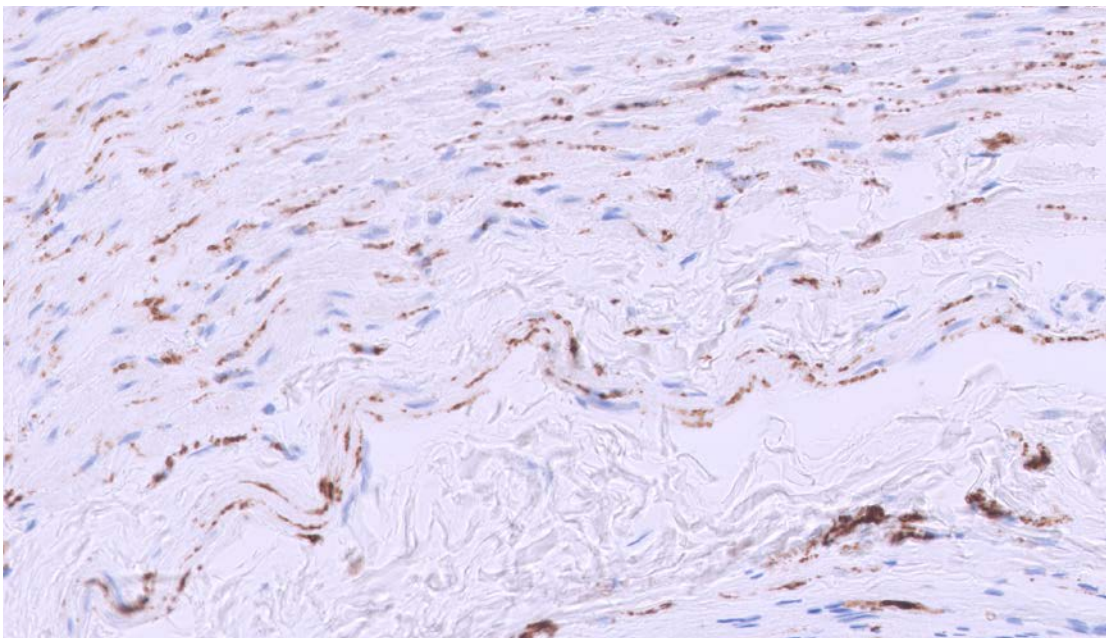
Clone: DAK-Calret 1

Code: GA627 | IR627

Reaction Location	Nucleus and cytoplasm
Quality Control	**Colon/Appendix**
High Expression	Ganglion cells of the peripheral nerves show a moderate to strong staining reaction.
Low Expression	Axons of the peripheral nerves show a weak to moderate staining reaction.
Non-expression	Columnar epithelial cells and smooth muscle cells.



Appendix (5x)



Appendix (10x)

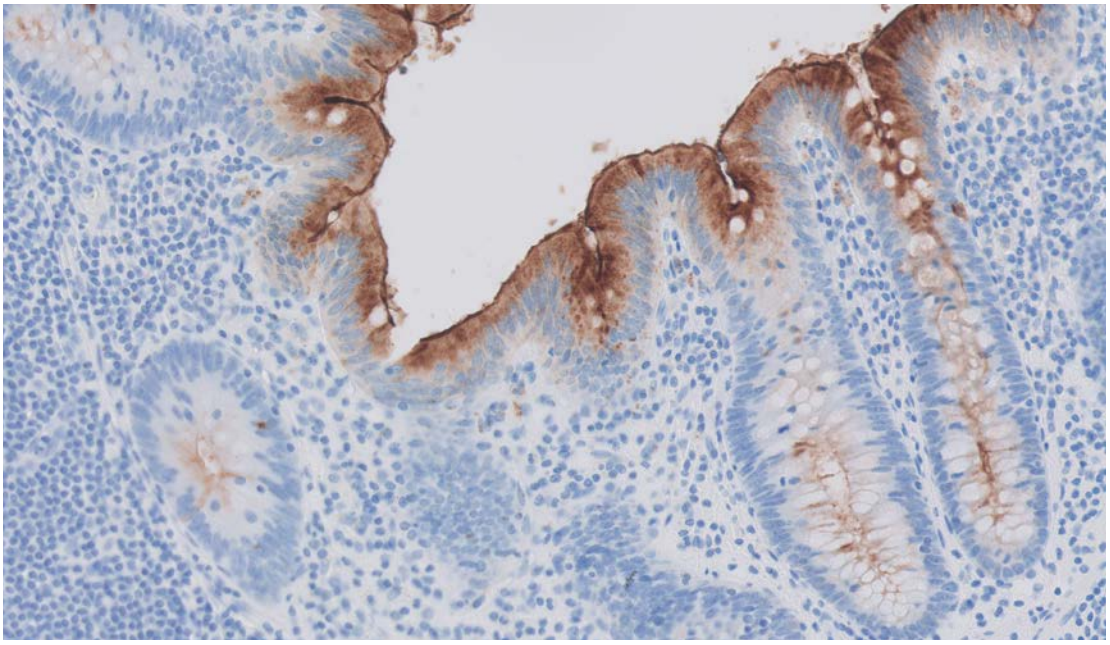
Monoclonal Mouse Anti-Human

Antibody: **Carcinoembryonic Antigen**

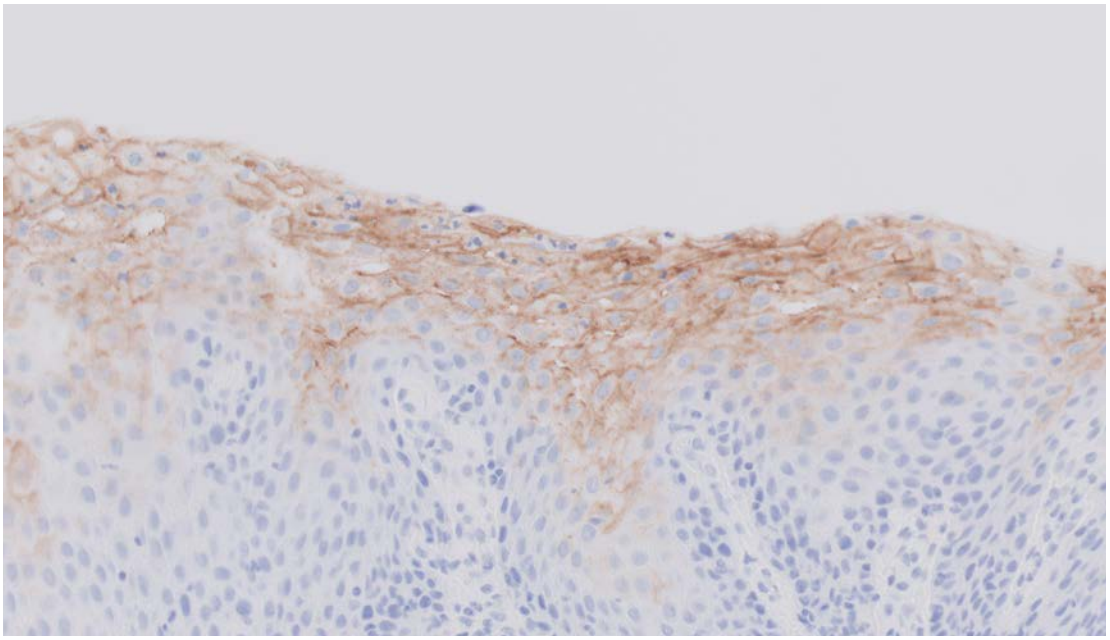
Clone: II-7

Code: GA622

Reaction Location	Membrane and cytoplasm	
Quality Control	**Colon/Appendix**	**Tonsil**
High Expression	Epithelial cells of the colon mucosa show a moderate to strong staining reaction at the luminal surface with enhancement of the glycocalyx.	NA
Low Expression	NA	Squamous epithelial cells show focally a weak to moderate cytoplasmic staining reaction.
Non-expression	NA	NA



Appendix (20x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

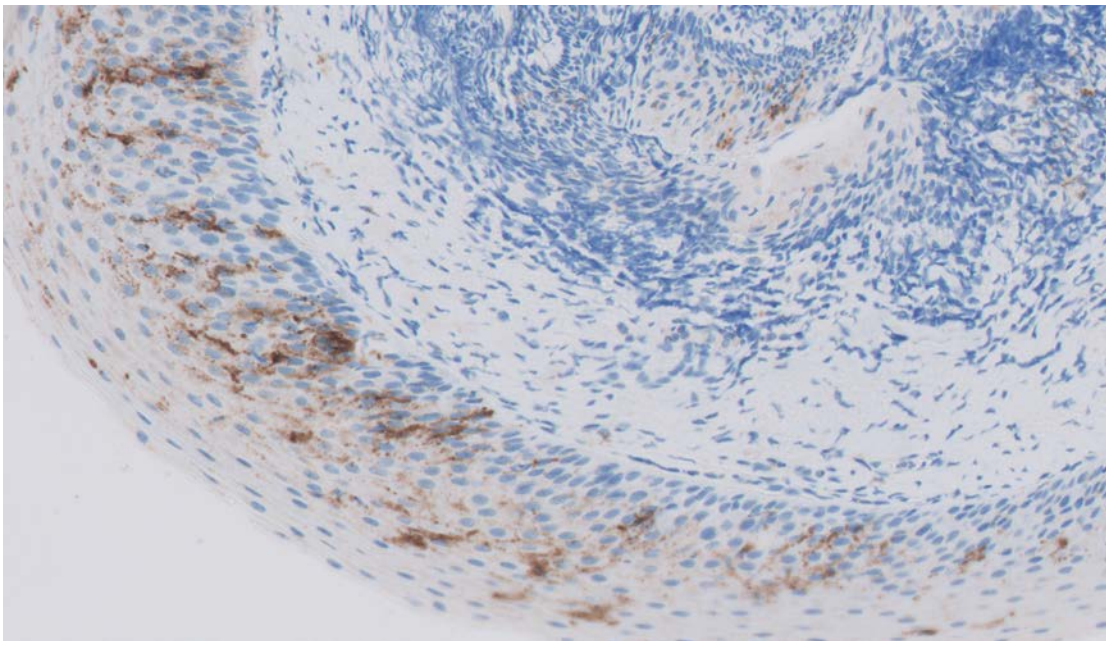
Antibody: **CD1a**

Clone: 010

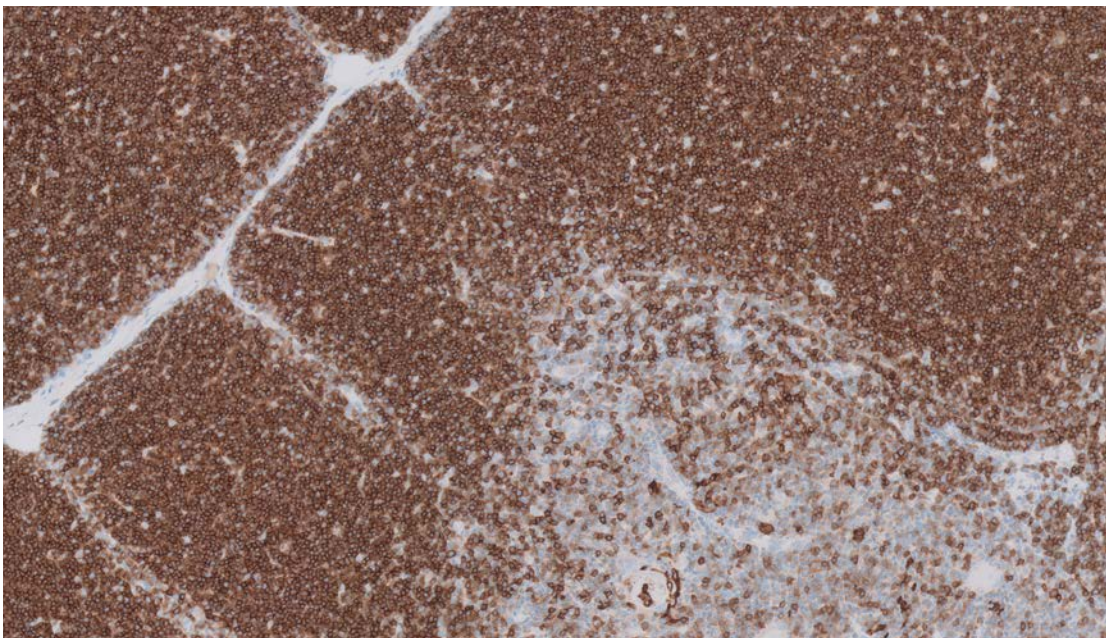
Code: IR069

Reaction Location	Membrane and/or cytoplasm	
Quality Control	**Tonsil**	**Thymus**
High Expression	The Langerhans' cells in the squamous epithelium show a moderate to strong granulated staining reaction.	The cortical thymocytes show a moderate to strong predominantly membranous staining reaction.
Low Expression	NA	NA
Non-expression	Epithelial cells.	NA

Note: Staining in germinal center should be disregarded. Staining of smooth muscle cells may be observed.



Tonsil (20x)



Thymus (10x)

Monoclonal Mouse Anti-Human

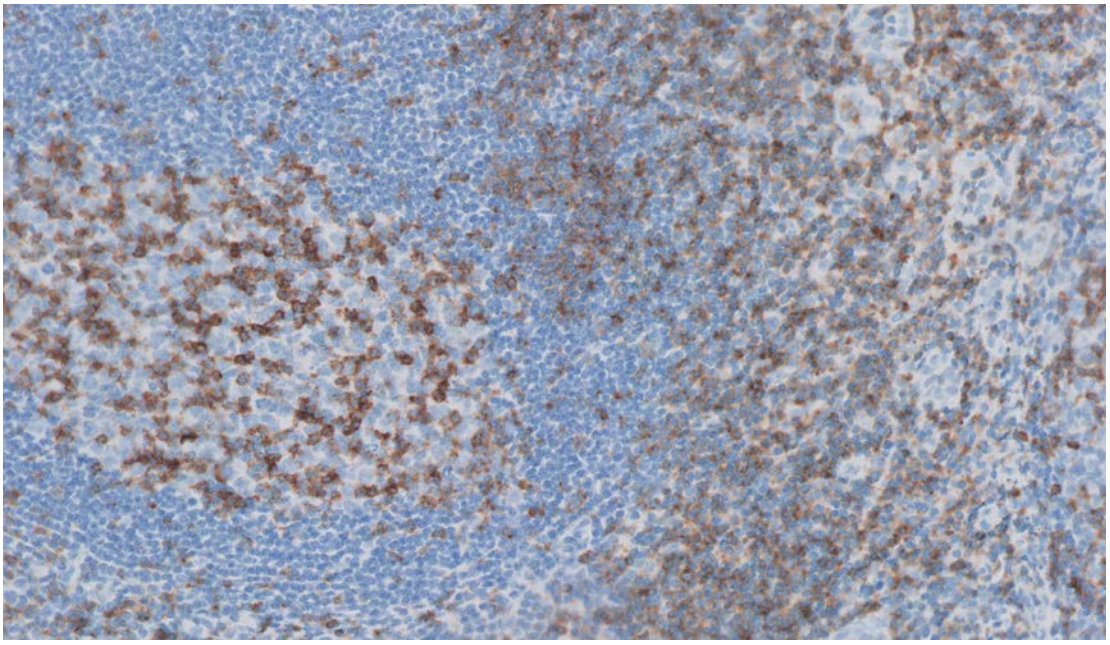
Antibody: **CD2**

Clone: AB75

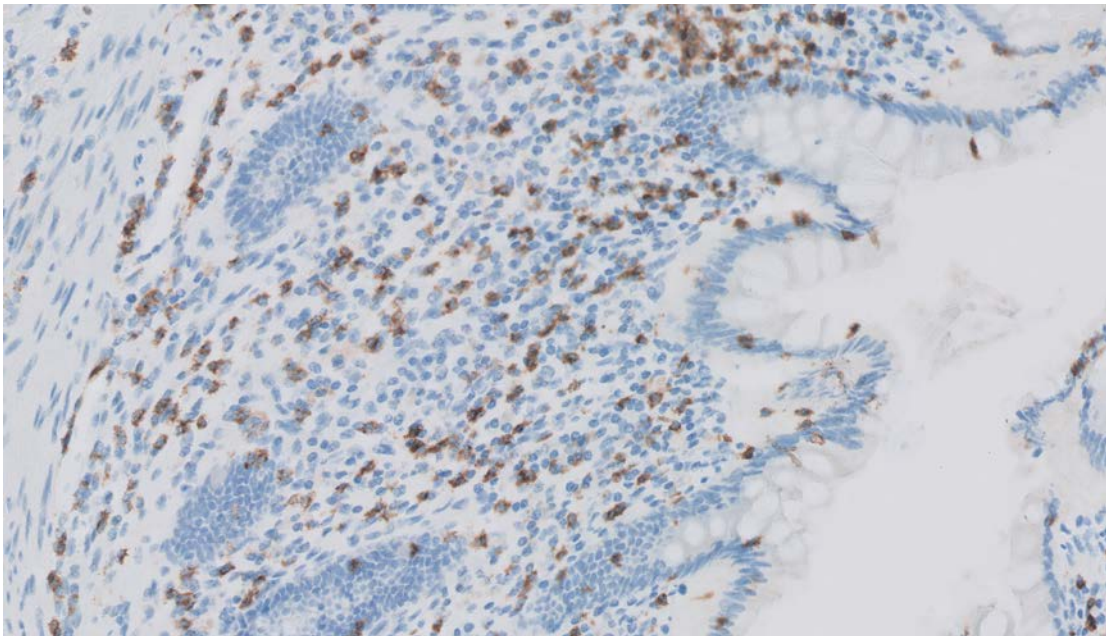
Code: GA651

Reaction Location	Membrane and cytoplasm	
Quality Control	**Tonsil**	**Colon/Appendix**
High Expression	Isolated T cells in the germinal centers show a strong staining reaction whereas T cells in the T zone show a moderate to strong staining reaction.	Intra-epithelial T cells show a weak to strong staining reaction.
Low Expression	NA	Intra-epithelial T cells show at least a weak to moderate staining reaction.
Non-expression	Epithelial cells.	NA

Note: Tonsil: Virtually all T cells and NK cells should show a predominantly membranous and cytoplasmic staining reaction.



Tonsil (20x)



Appendix (20x)

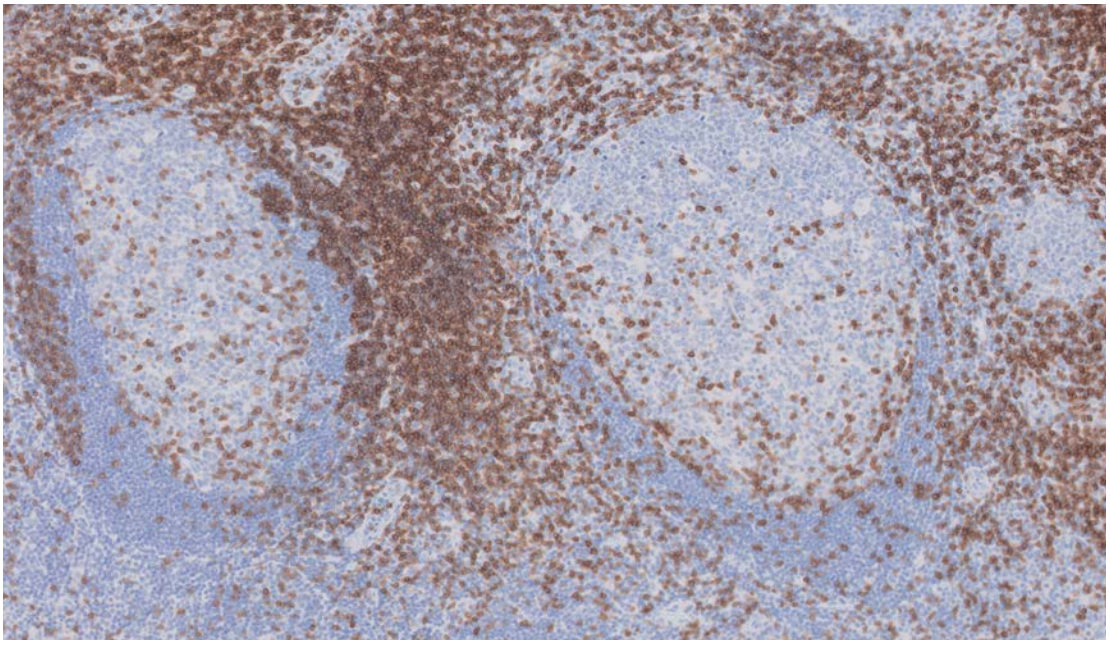
Polyclonal Rabbit Anti-Human

Antibody: **CD3**

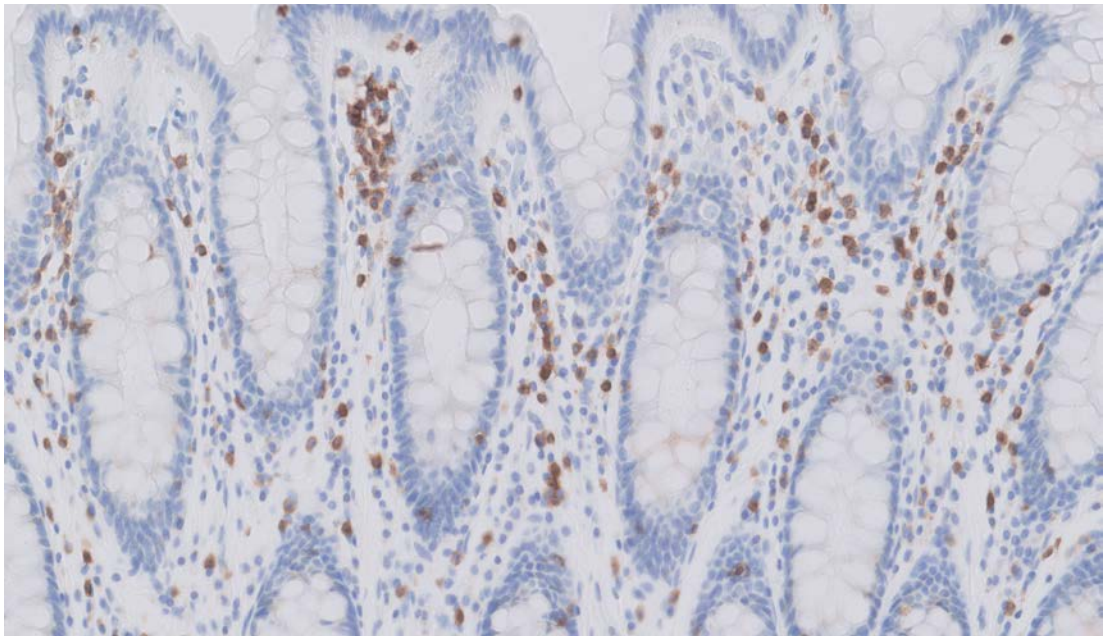
Clone: Polyclonal

Code: GA503 | IR503

Reaction Location	Membrane and/or cytoplasm	
Quality Control	**Tonsil**	**Colon/Appendix**
High Expression	T cells in the interfollicular areas and in the germinal centers show a moderate to strong staining reaction.	Intra-epithelial T cells show a weak to strong staining reaction.
Low Expression	NA	Intra-epithelial T cells show at least a weak to moderate staining reaction.
Non-expression	B cells	NA



Tonsil (10x)



Colon (20x)

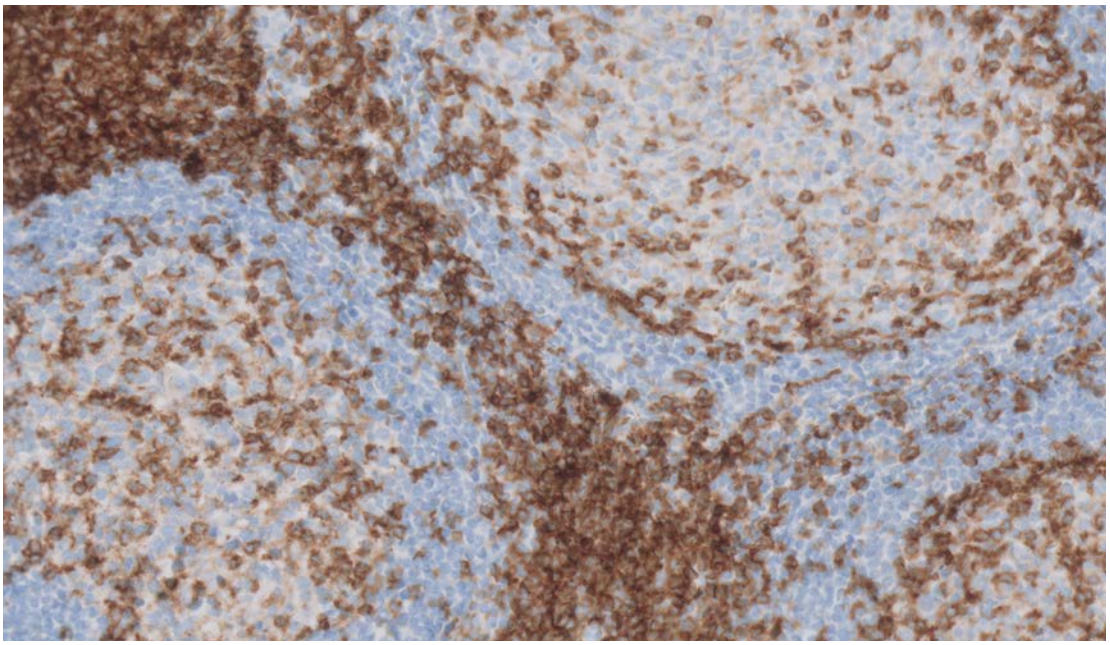
Monoclonal Mouse Anti-Human

Antibody: **CD4**

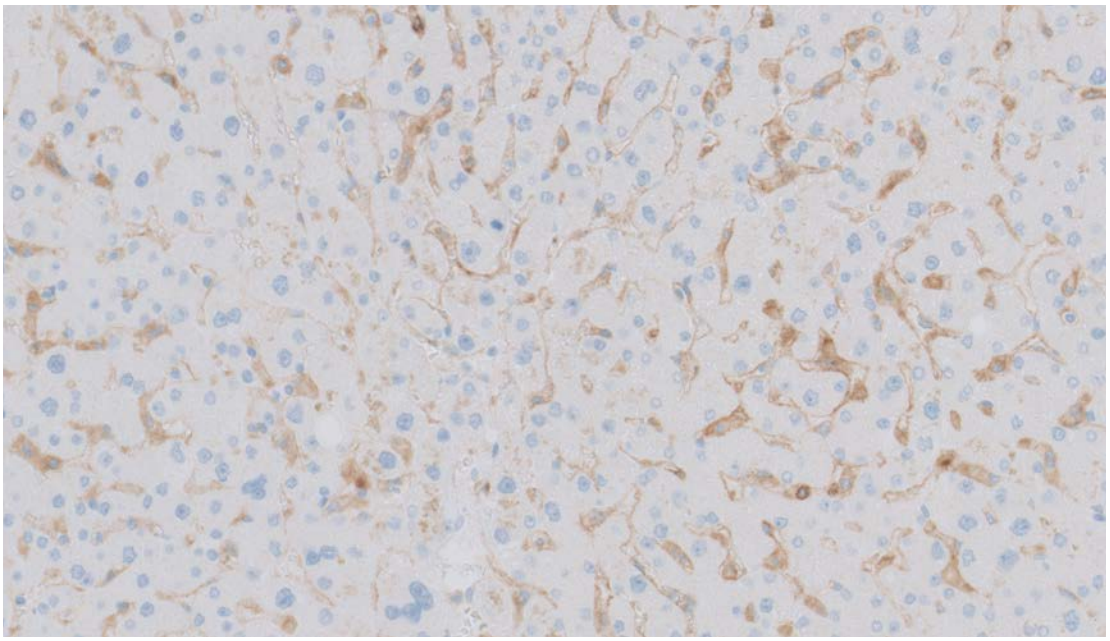
Clone: 4B12

Code: IR649

Reaction Location	Membrane	
Quality Control	**Tonsil**	**Liver**
High Expression	Crowded and isolated T-helper cells show a moderate to strong staining reaction.	NA
Low Expression	Germinal center macrophages show a weak to moderate staining reaction.	Kupffer and endothelial cells of the sinusoids show a weak to moderate staining reaction.
Non-expression	NA	Hepatocytes



Tonsil (20x)



Liver (20x)

Monoclonal Mouse Anti-Human

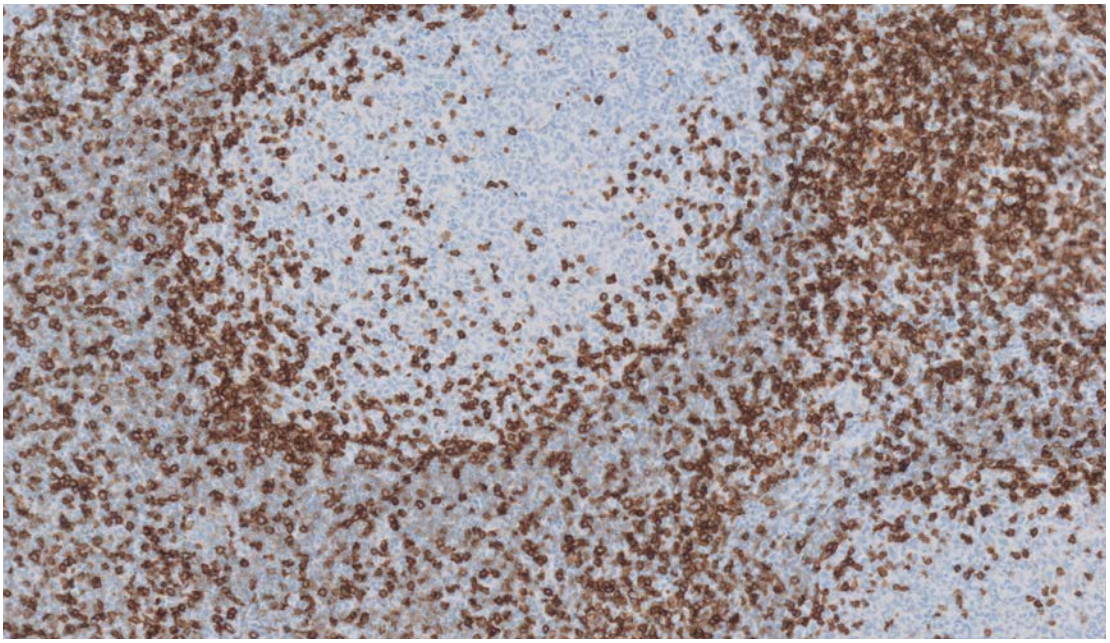
Antibody: **CD5**

Clone: 4C7

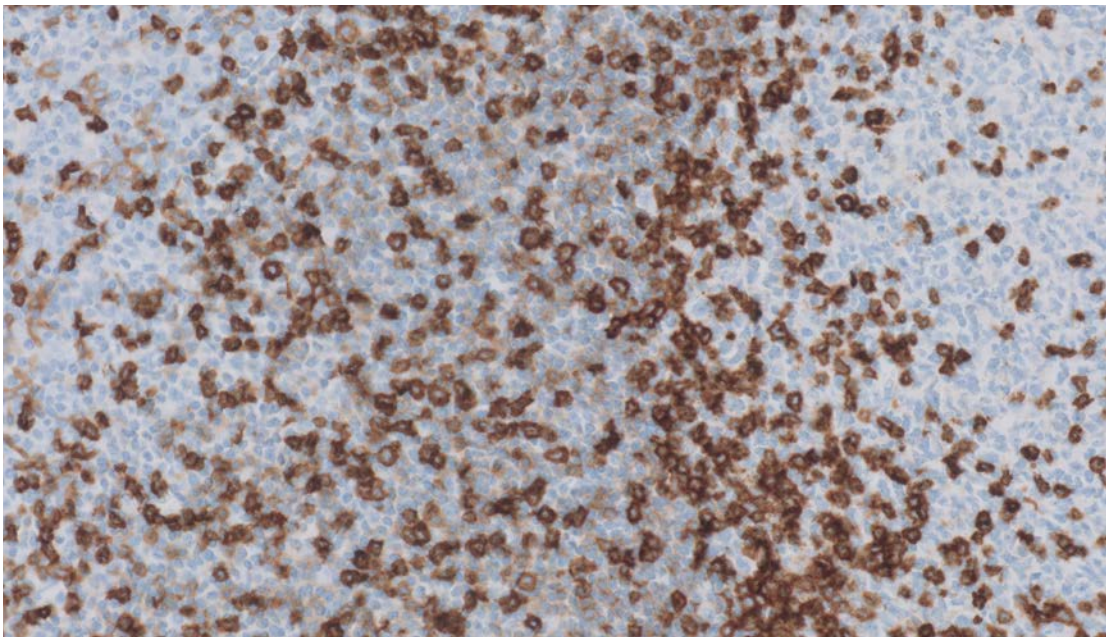
Code: IR082

Reaction Location	Membrane and/or cytoplasm
Quality Control	**Tonsil**
High Expression	Virtually all T cells show a moderate to strong staining reaction. Both crowded T cells in the T zone and scattered T cells in the germinal center are demonstrated and show a distinct continuous membranous staining reaction.
Low Expression	In the mantle zone, scattered B cells show a weak membranous staining reaction.
Non-expression	NA

Note: Occasionally, it can be difficult to distinguish the two different lymphocytic subtypes.



Tonsil (10x)



Tonsil (20x)

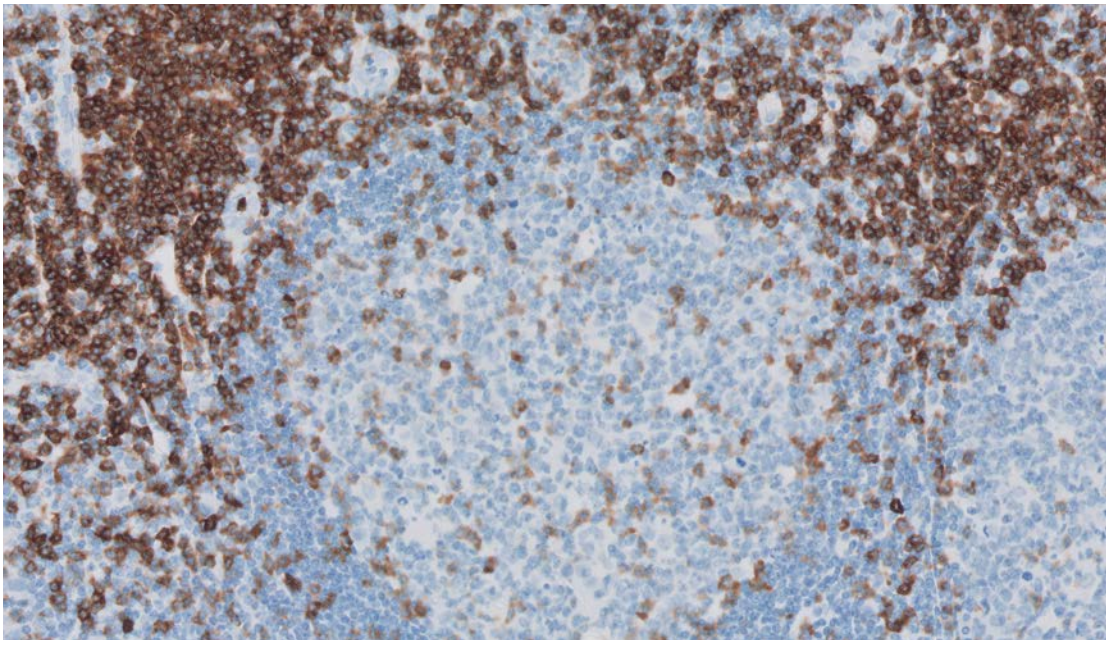
Monoclonal Mouse Anti-Human

Antibody: **CD7**

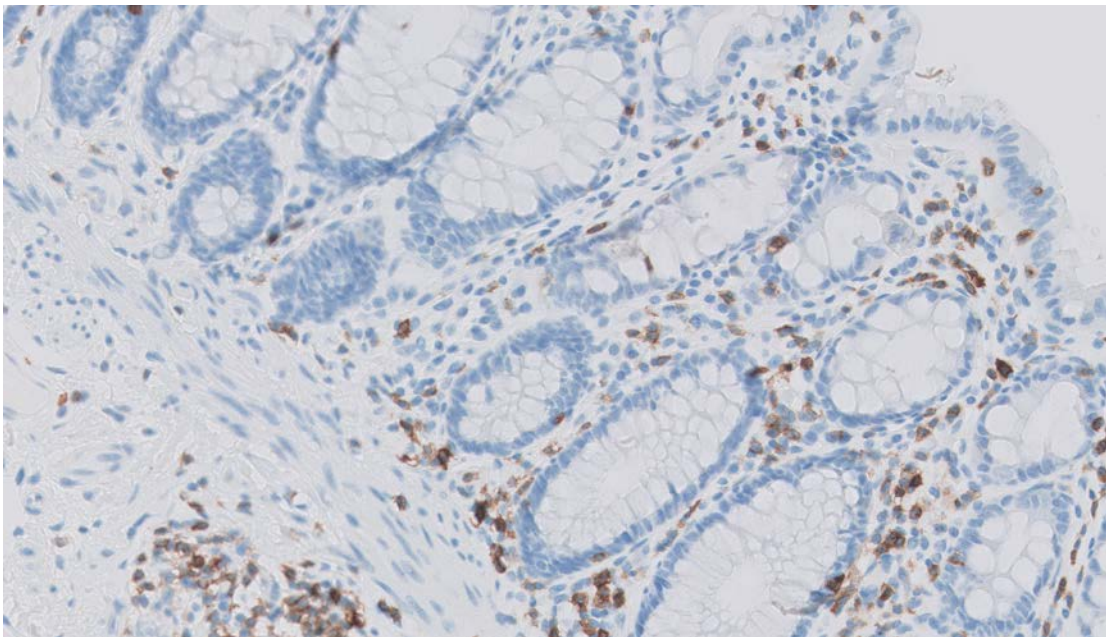
Clone: CBC.37

Code: GA643

Reaction Location	Membrane	
Quality Control	**Tonsil**	**Colon/Appendix**
High Expression	Crowded T cells in the T zone show a strong staining reaction.	Intra-epithelial T cells show a weak to strong distinct staining reaction.
Low Expression	Isolated T cells show a weak to strong staining reaction.	Intra-epithelial T cells show at least a weak to moderate distinct staining reaction.
Non-expression	NA	Epithelial cells.



Tonsil (20x)



Colon (20x)

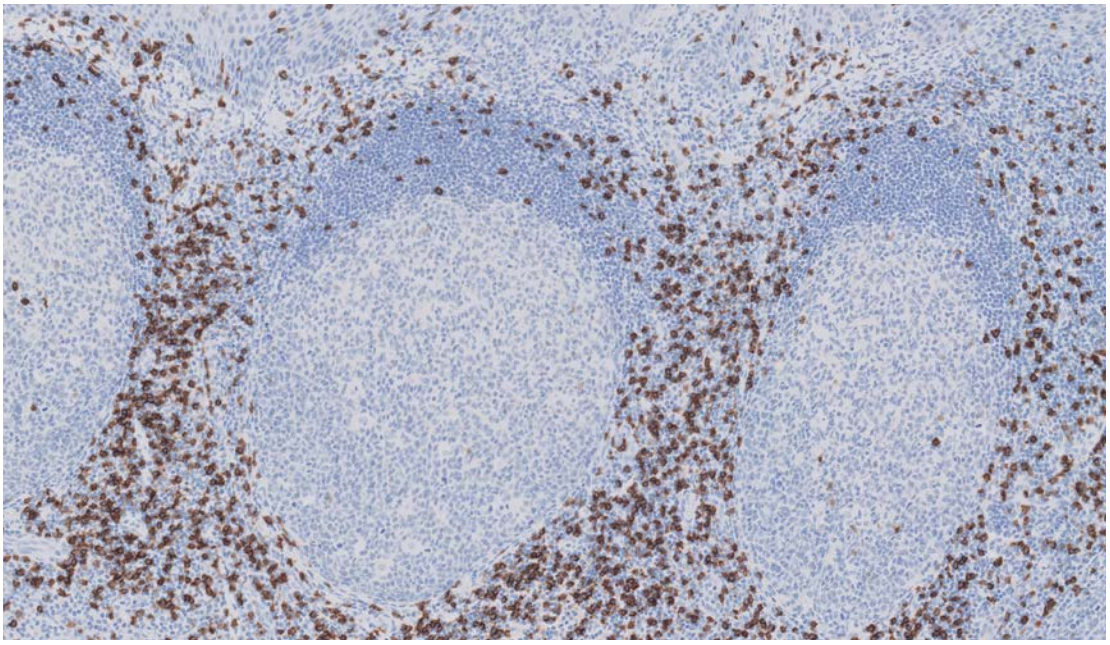
Monoclonal Mouse Anti-Human

Antibody: **CD8**

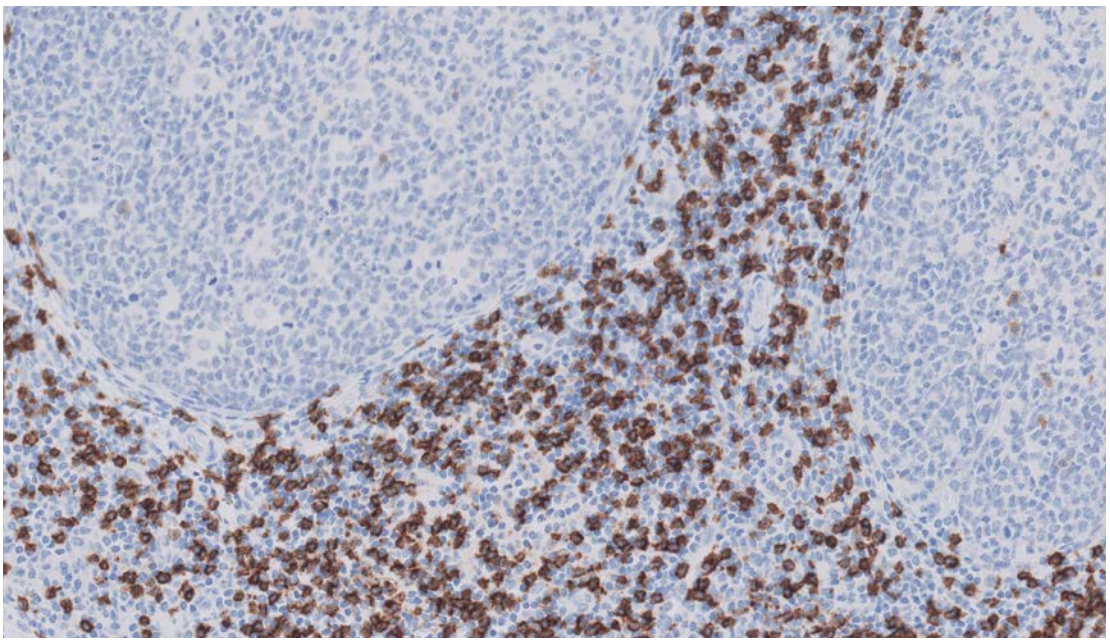
Clone: C8/144B

Code: GA623 | IR623

Reaction Location	Membrane and cytoplasm
Quality Control	**Tonsil**
High Expression	Interfollicular T cells show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	NA



Tonsil (10x)



Tonsil (20x)

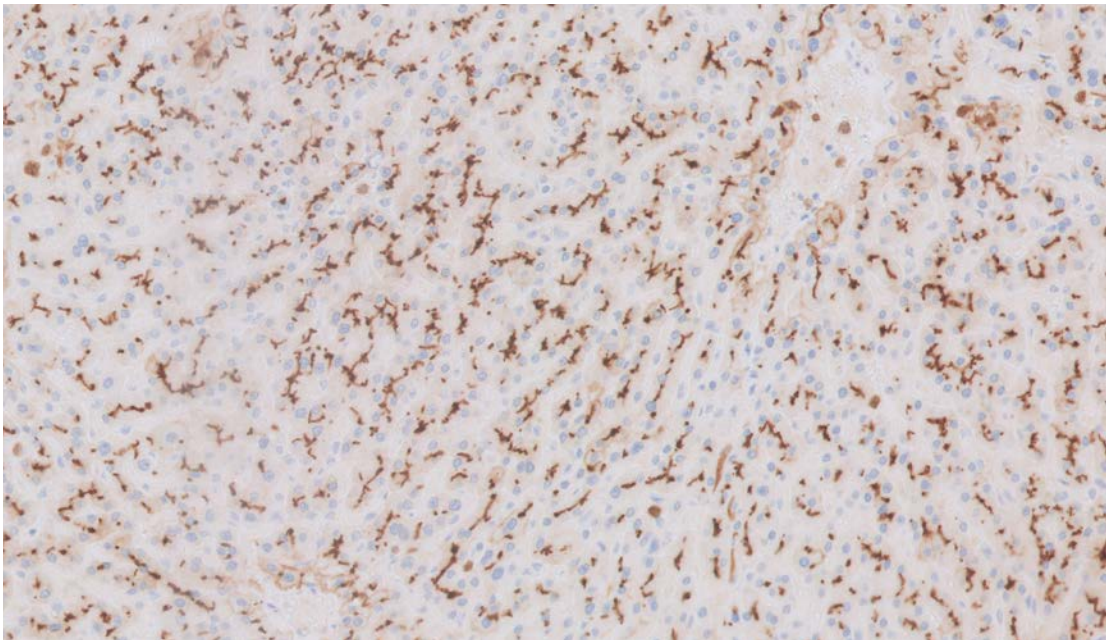
Monoclonal Mouse Anti-Human

Antibody: **CD10**

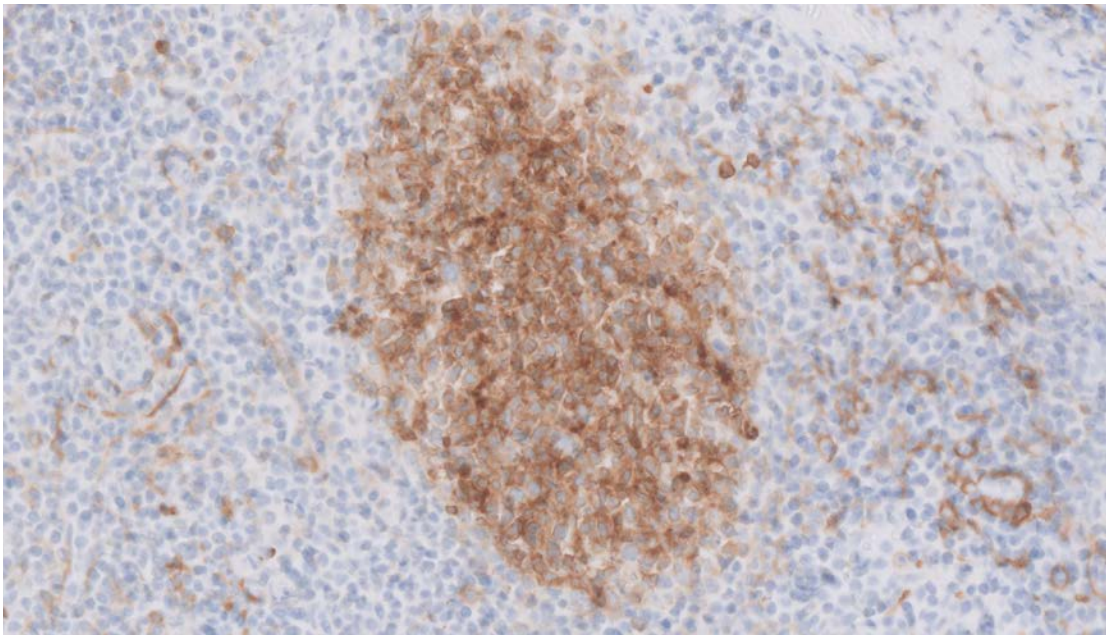
Clone: DAK-CD10

Code: GA786 | IR786

Reaction Location	Membrane	
Quality Control	**Liver**	**Tonsil**
High Expression	Bile canaliculi show a moderate to strong staining reaction.	NA
Low Expression	NA	Germinal center B cells show a weak to moderate staining reaction.
Non-expression	NA	Peripheral lymphocytes



Liver (20x)



Tonsil (20x)

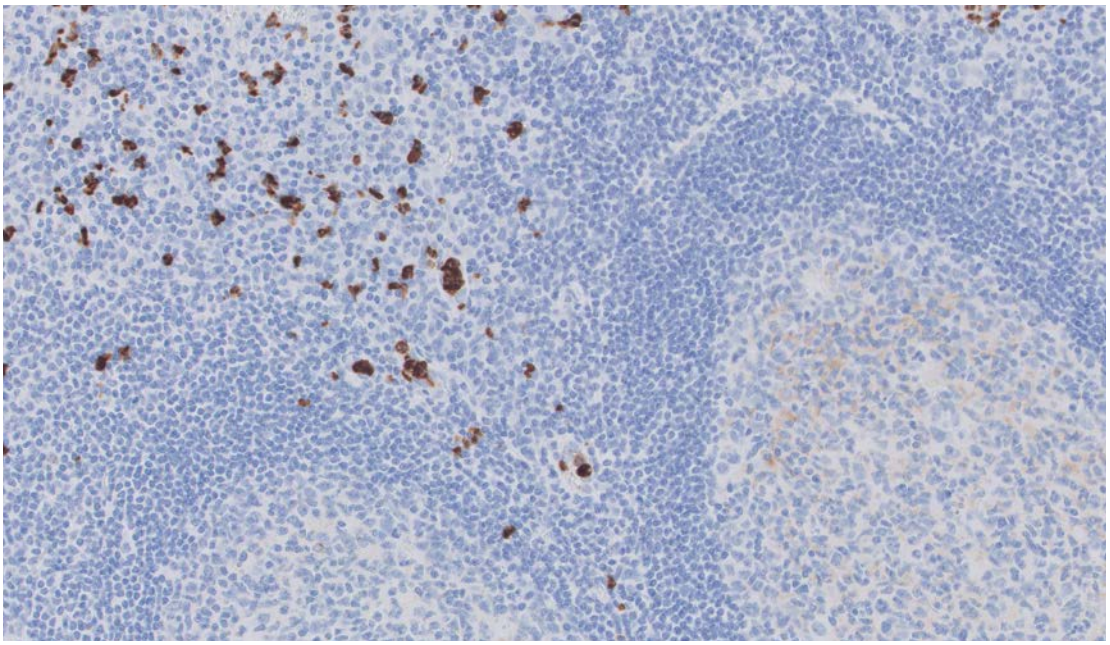
Monoclonal Mouse Anti-Human

Antibody: **CD15**

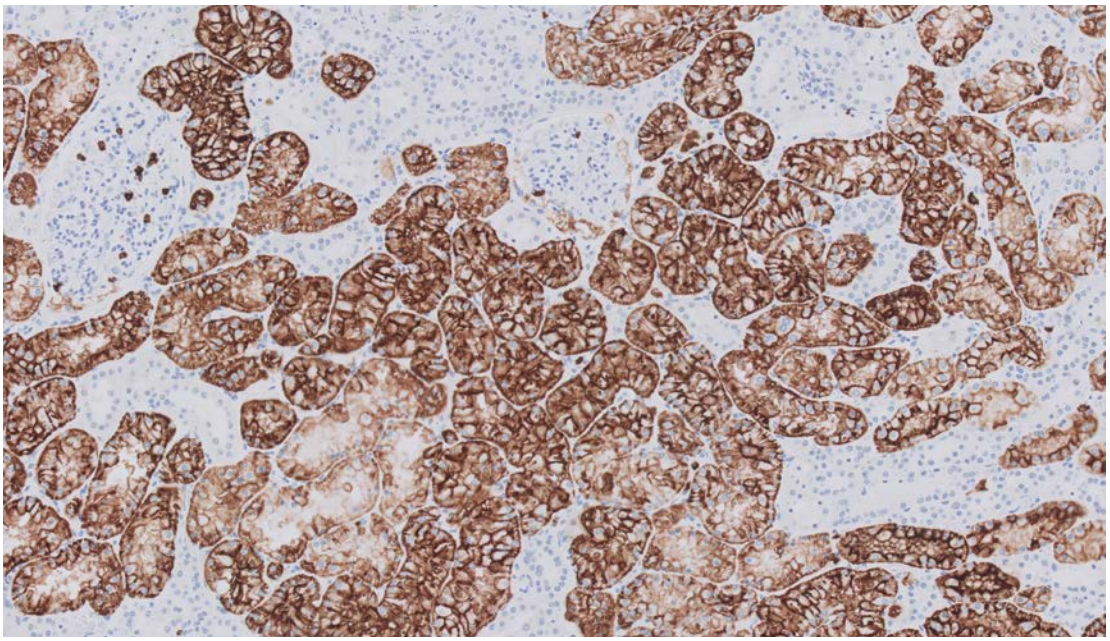
Clone: Carb-3

Code: GA062 | IR062

Reaction Location	Membrane and/or cytoplasm	
Quality Control	**Tonsil**	**Kidney**
High Expression	Neutrophiles and eosinophiles show a moderate to strong staining reaction.	Proximal and distal tubules show a weak to strong stainingreaction.
Low Expression	NA	Proximal and distal tubules show a weak to strong staining reaction.
Non-expression	All other cell types including B and T cells.	NA



Tonsil (20x)



Kidney (10x)

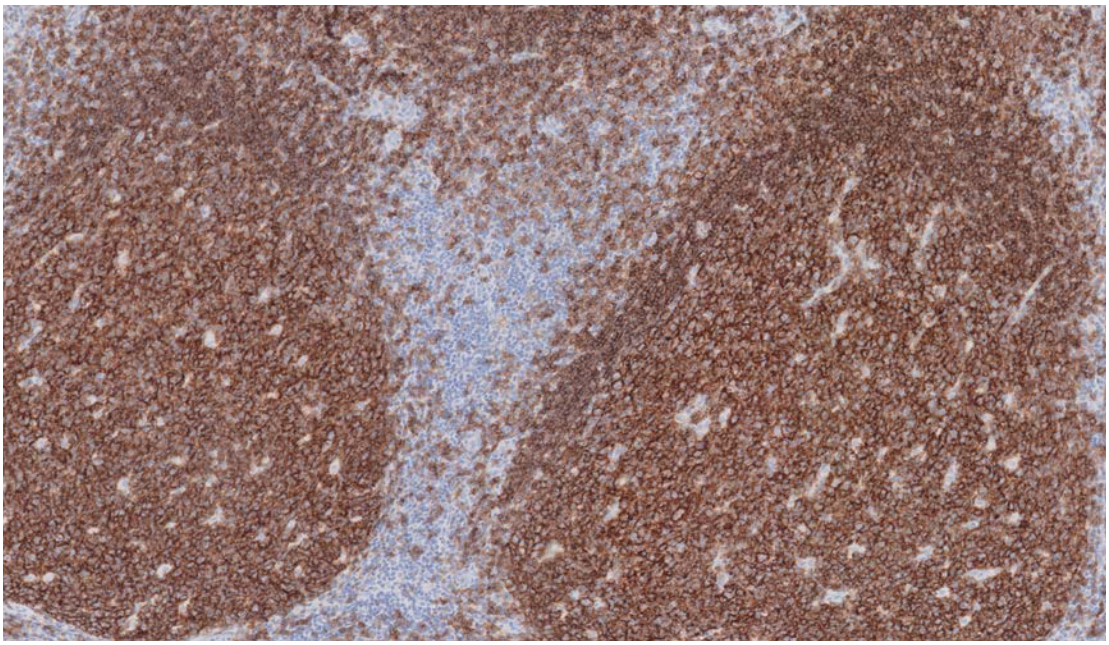
Monoclonal Mouse Anti-Human

Antibody: **CD19**

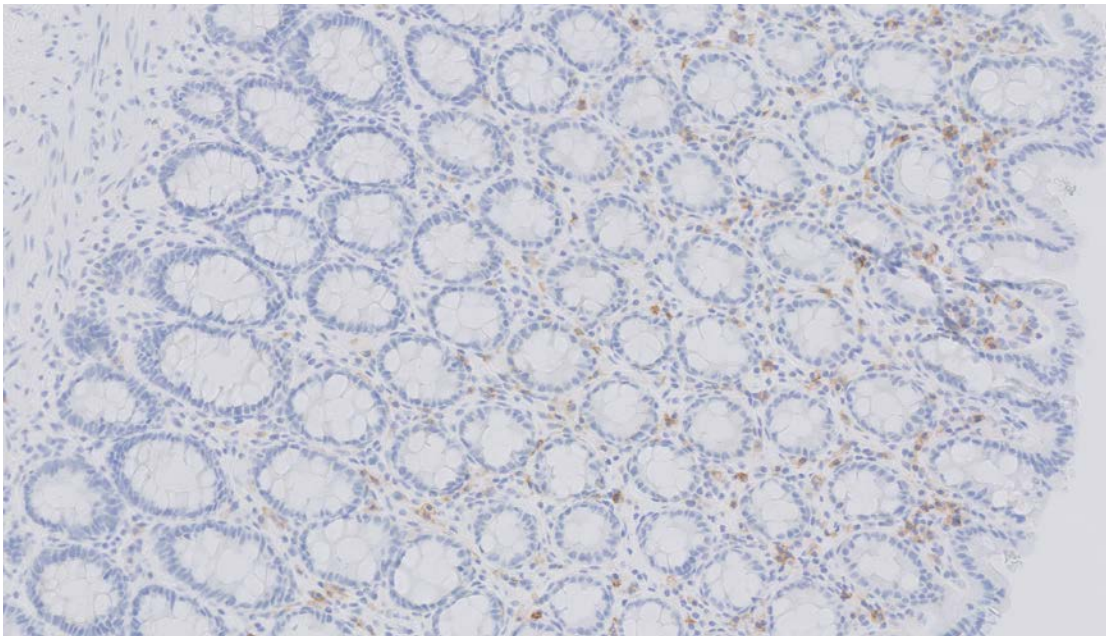
Clone: LE-CD19

Code: GA656

Reaction Location	Membrane	
Quality Control	**Tonsil**	**Colon/Appendix**
High Expression	B cells in the germinal centers and mantle zone show a moderate to strong membrane staining reaction.	NA
Low Expression	NA	Plasma cells in the lamina propria show a weak to moderate staining reaction.
Non-expression	Epithelial cells	NA



Tonsil (10x)



Colon (10x)

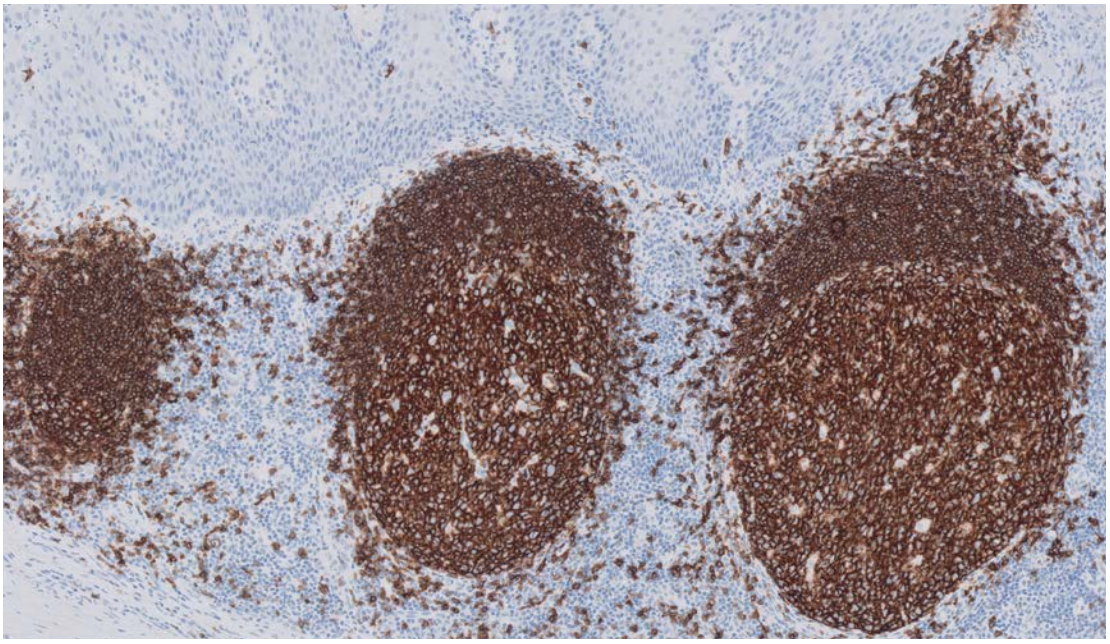
Monoclonal Mouse Anti-Human

Antibody: **CD20cy**

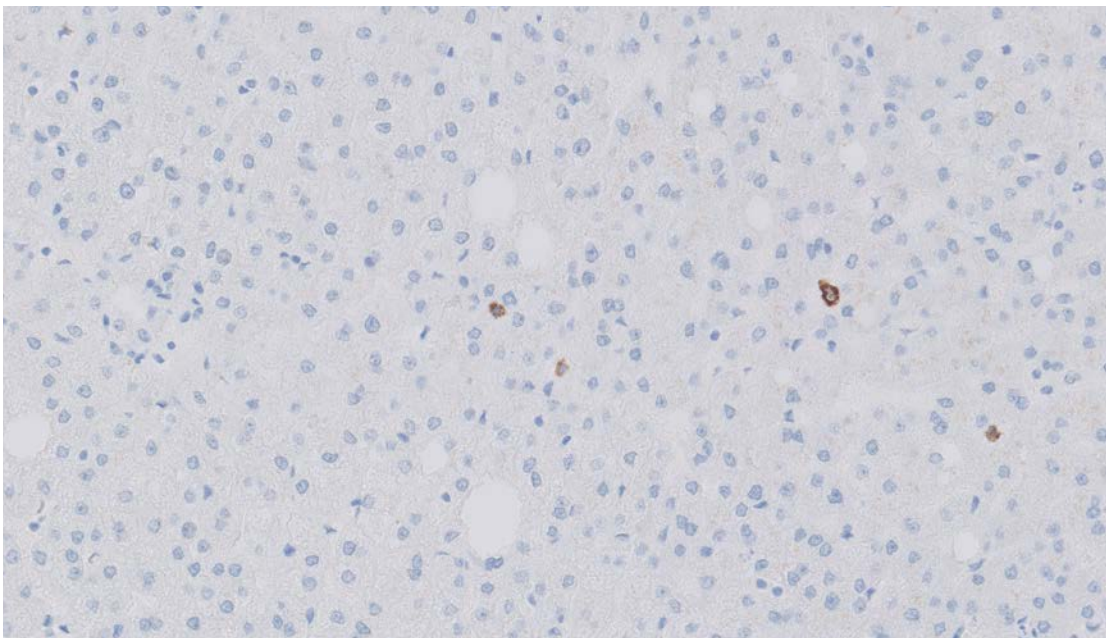
Clone: L26

Code: GA604 | IR604

Reaction Location	Membrane	
Quality Control	**Tonsil**	**Liver**
High Expression	Mantle zone and germinal center B cells show a moderate to strong staining reaction.	NA
Low Expression	NA	Isolated B cells show a weak to moderate staining reaction.
Non-expression	Squamous epithelial cells	NA



Tonsil (10x)



Liver (20x)

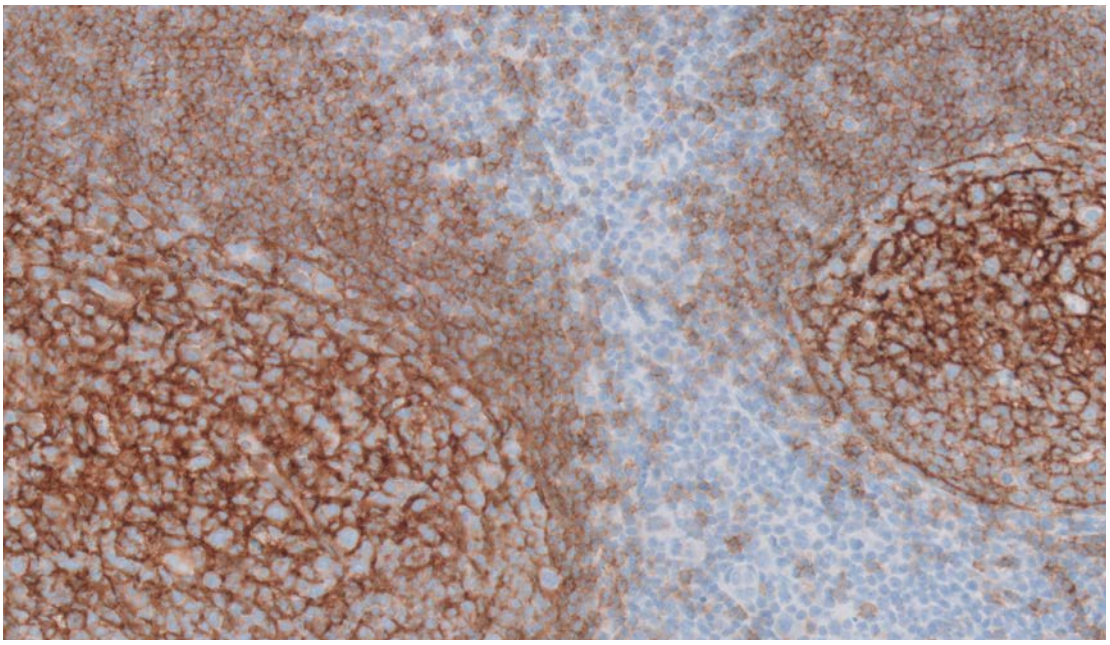
Monoclonal Mouse Anti-Human

Antibody: **CD21**

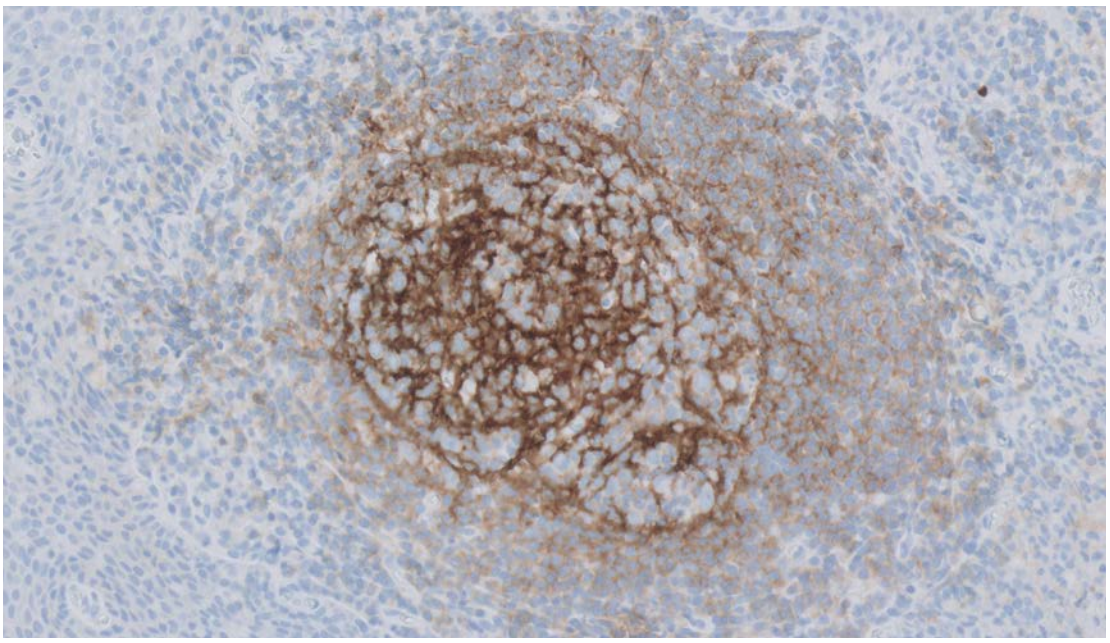
Clone: 1F8

Code: IR608

Reaction Location	Membrane
Quality Control	**Tonsil**
High Expression	Follicular dendritic cells in the germinal centers of tonsil show a moderate to strong staining reaction.
Low Expression	A subset of activated B cells in the mantle zone show a weak to moderate staining reaction.
Non-expression	NA



Tonsil (20x)



Tonsil (20x)

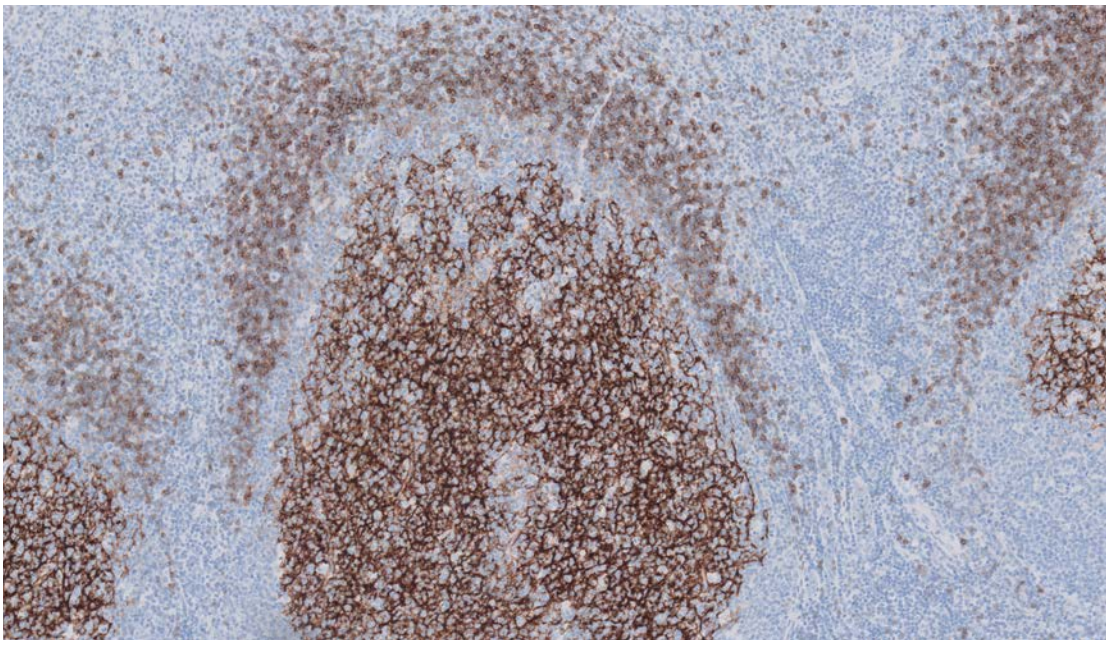
Monoclonal Mouse Anti-Human

Antibody: **CD23**

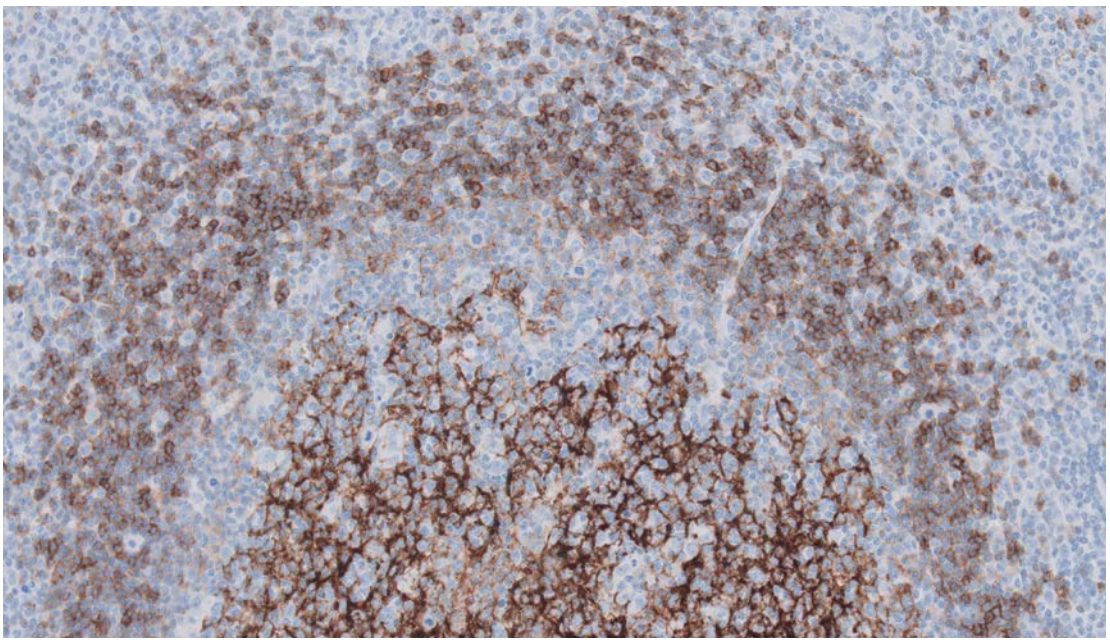
Clone: DAK-CD23

Code: GA781 | IR781

Reaction Location	Membrane
Quality Control	**Tonsil**
High Expression	Follicular dendritic cells in the germinal centers show a moderate to strong staining reaction.
Low Expression	B cells in the mantle zone show a weak to moderate staining reaction.
Non-expression	Squamous epithelial cells and T cells in the interfollicular T zones.



Tonsil (10x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

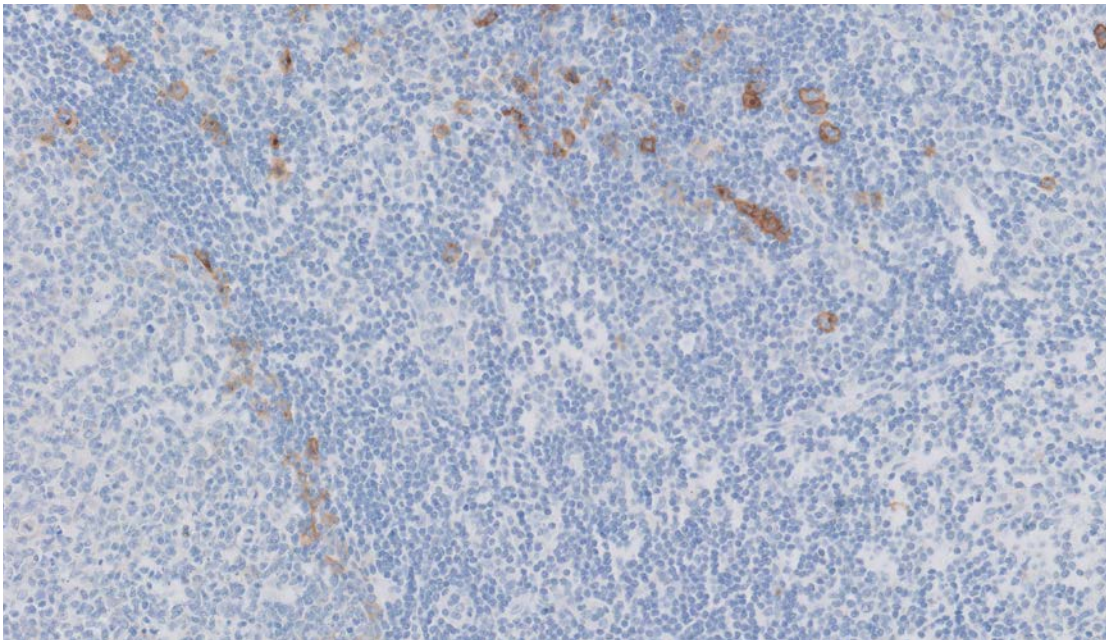
Antibody: **CD30**

Clone: Ber-H2

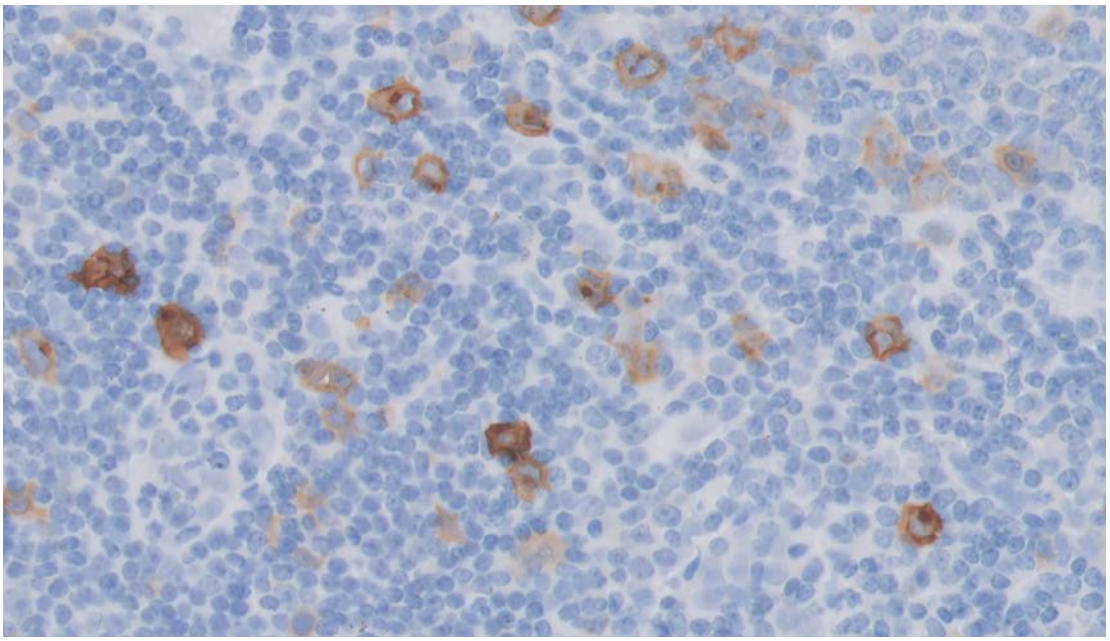
Code: GA602 | IR602

Reaction Location	Membrane and cytoplasm
Quality Control	**Tonsil**
High Expression	Activated inter and perifollicular lymphocytes show a weak to strong membrane and/or a dot-like cytoplasmic staining reaction.
Low Expression	Activated inter and perifollicular lymphocytes show a weak to strong membrane and/or a dot-like cytoplasmic staining reaction.
Non-expression	NA

Note: Plasma cells may show a focal cytoplasmic staining reaction.



Tonsil (20x)



Tonsil (40x)

Monoclonal Mouse Anti-Human

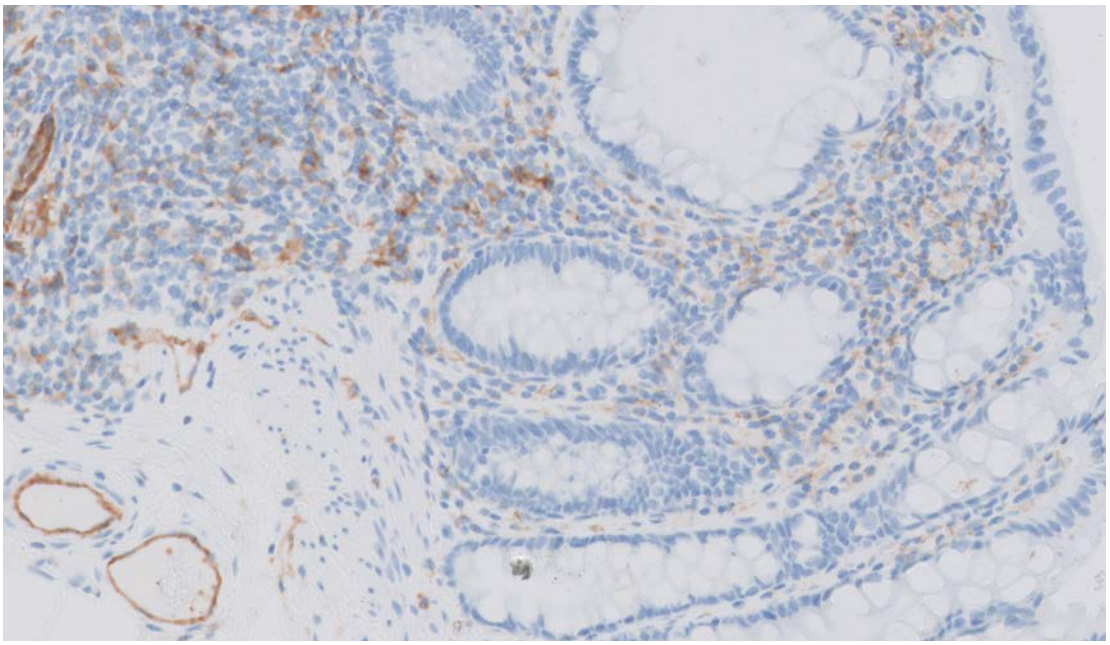
Antibody: **CD31, Endothelial Cell**

Clone: JC70A

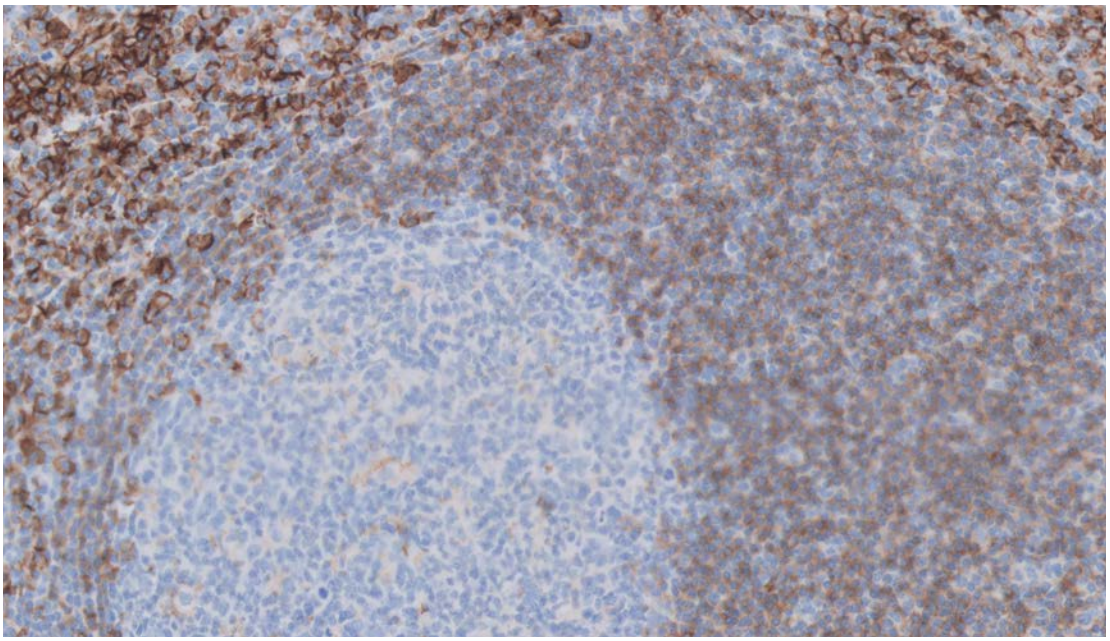
Code: GA610 | IR610

Reaction Location	Membrane and cytoplasm	
Quality Control	**Colon/Appendix**	**Tonsil**
High Expression	Endothelial cells of the large vessels show a moderate to strong staining reaction.	Plasma cells show a moderate to strong staining reaction.
Low Expression	Activated B and T cells in lamina propria show a weak to moderate staining reaction.	B cells in the mantle zone show a weak to moderate staining reaction.
Non-expression	Columnar epithelial cells	NA

Note: Predominantly membrane staining, with weaker cytoplasmic staining



Colon (20x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

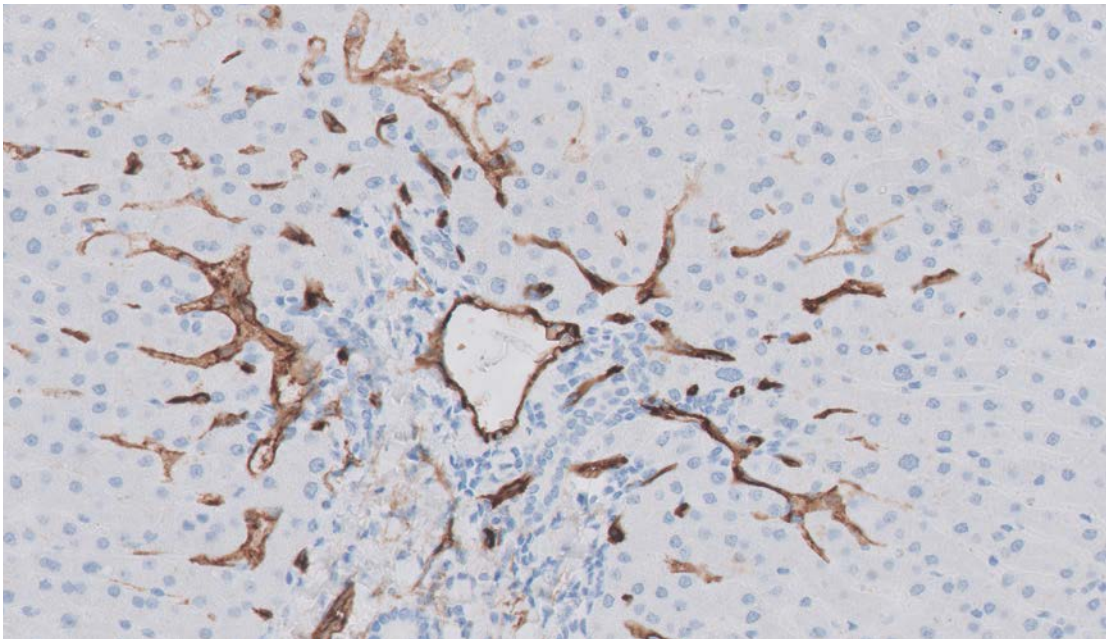
Antibody: **CD34, Class II**

Clone: QBEnd 10

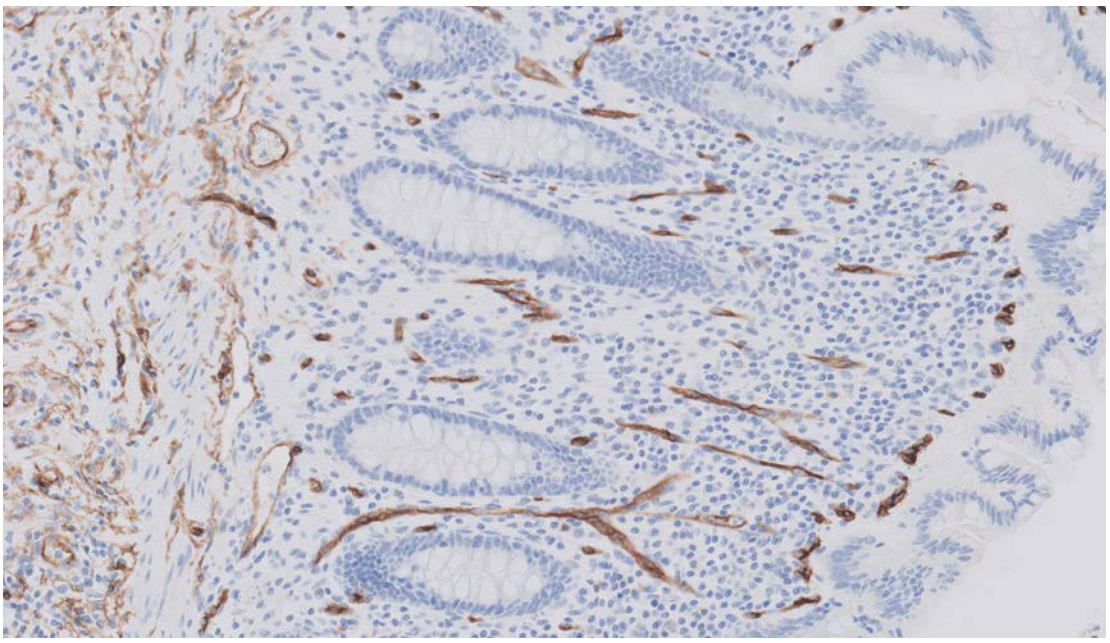
Code: GA632 | IR632

Reaction Location	Membrane	
Quality Control	**Liver**	**Colon/Appendix**
High Expression	Endothelial cells of portal vessels and of the periportal sinusoids show a moderate to strong staining reaction.	Endothelial cells of all vessels show a distinct predominantly membranous staining reaction.
Low Expression	NA	NA
Non-expression	Hepatocytes	NA

Note: Especially, the endothelial cells of the small submucosal vessels should be demonstrated.



Liver (20x)



Appendix (20x)

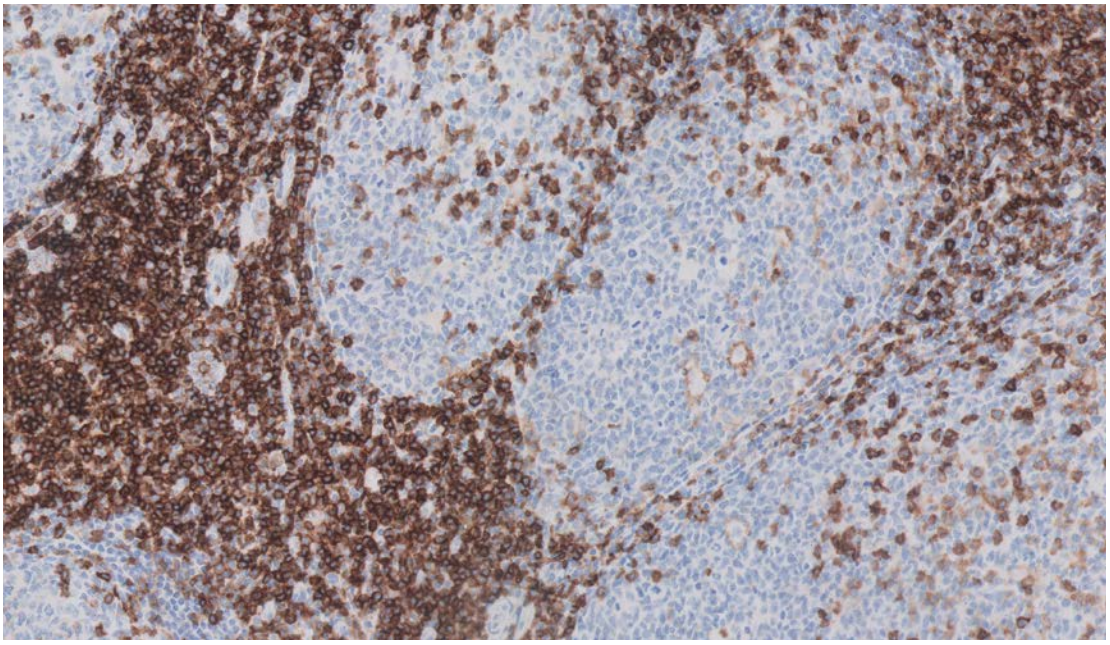
Monoclonal Mouse Anti-Human

Antibody: **CD43**

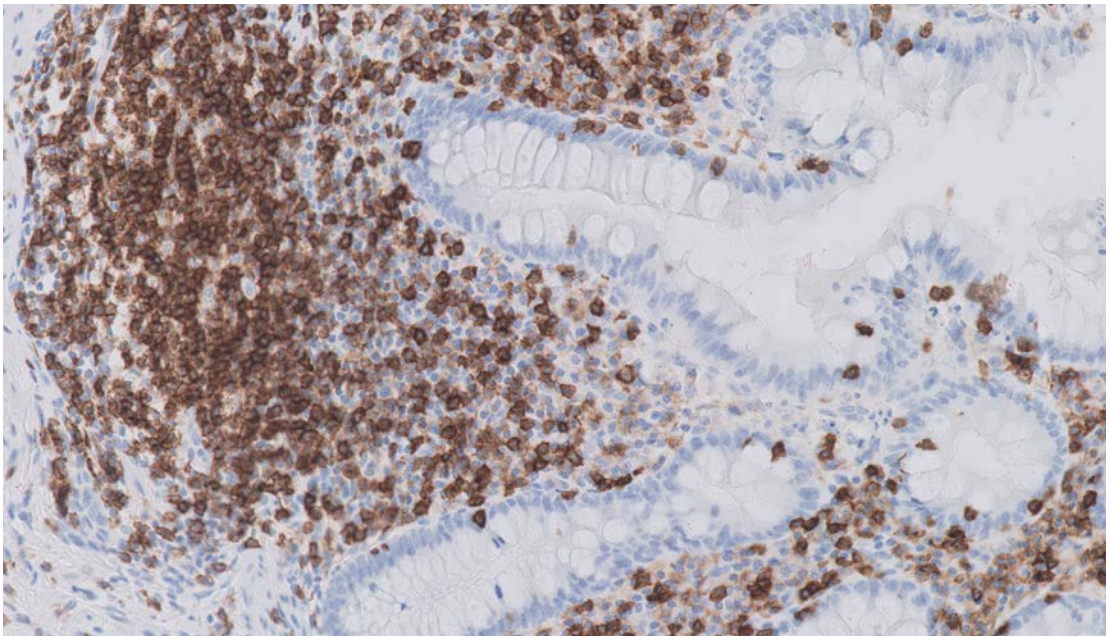
Clone: DF-T1

Code: GA636

Reaction Location	Membrane	
Quality Control	**Tonsil**	**Colon/Appendix**
High Expression	Virtually all T cells show a moderate to strong staining reaction.	T cells and plasma cells in lamina propria show a moderate to strong staining reaction.
Low Expression	Macrophages, e.g. within germinal centers, show a weak to moderate staining reaction.	Macrophages show a weak to moderate staining reaction.
Non-expression	NA	Epithelial cells



Tonsil (20x)



Appendix (20x)

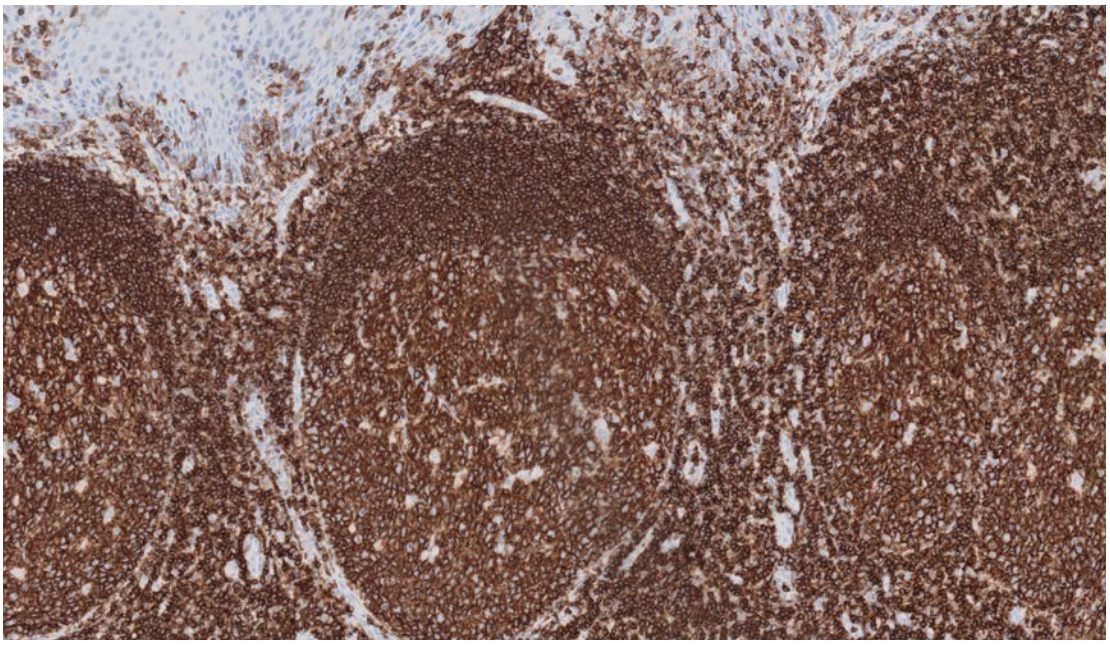
Monoclonal Mouse Anti-Human

Antibody: **CD45, Leucocyte Common Antigen**

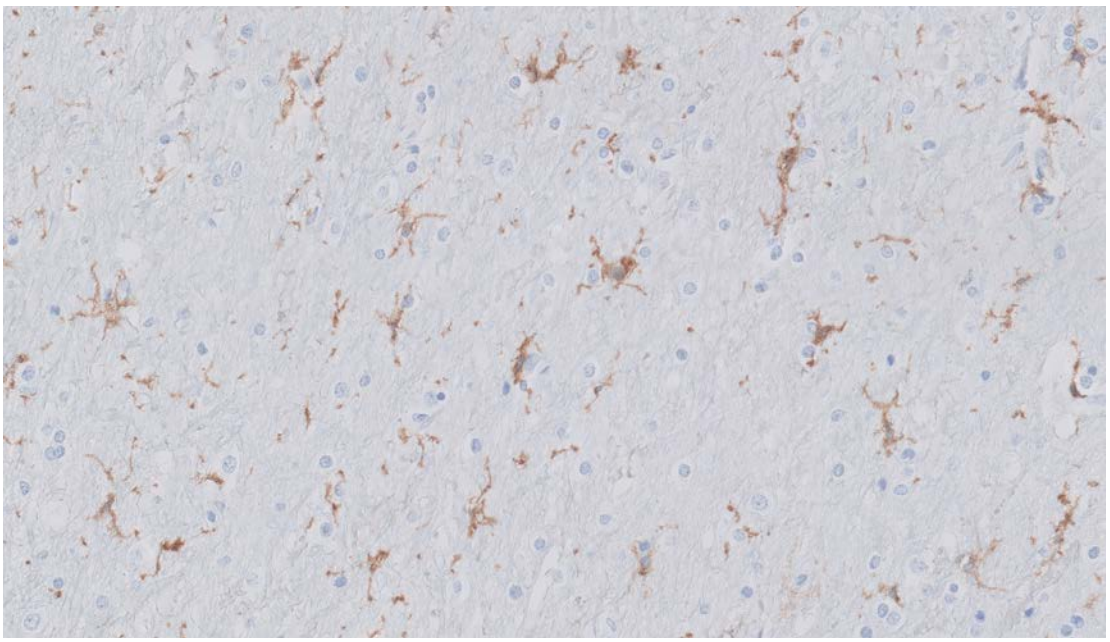
Clone: 2B11 + PD7/26

Code: GA751 | IR751

Reaction Location	Membrane	
Quality Control	**Tonsil**	**Brain**
High Expression	B and T cells show a moderate to strong staining reaction.	NA
Low Expression	NA	Microglial cells show a weak to moderate staining reaction.
Non-expression	NA	NA



Tonsil (10x)



Brain (20x)

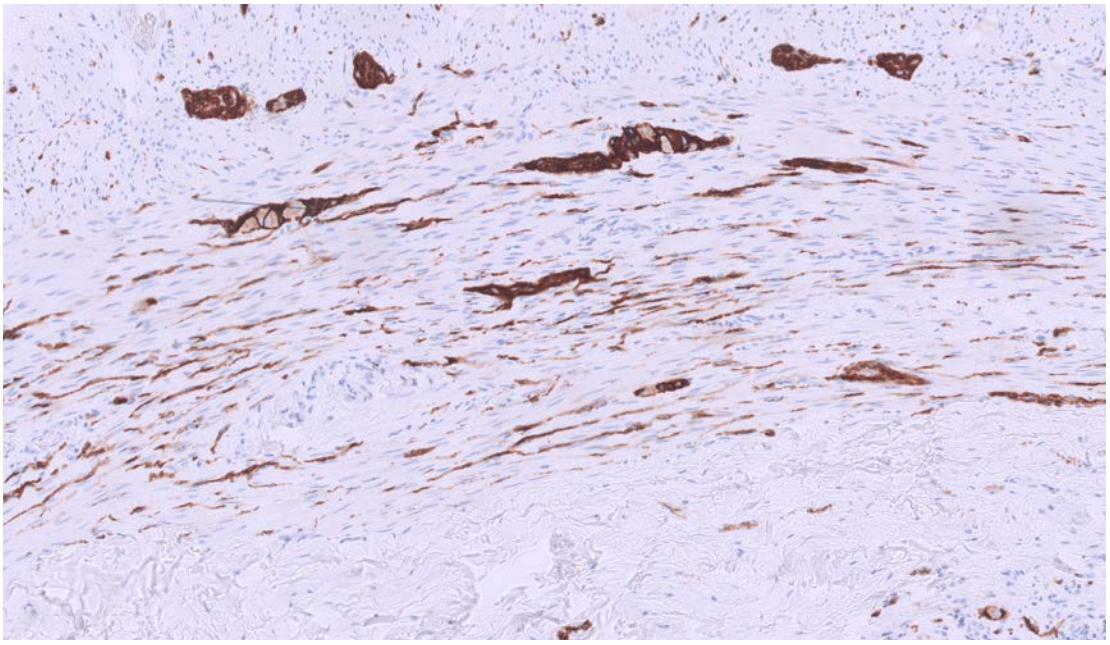
Monoclonal Mouse Anti-Human

Antibody: **CD56**

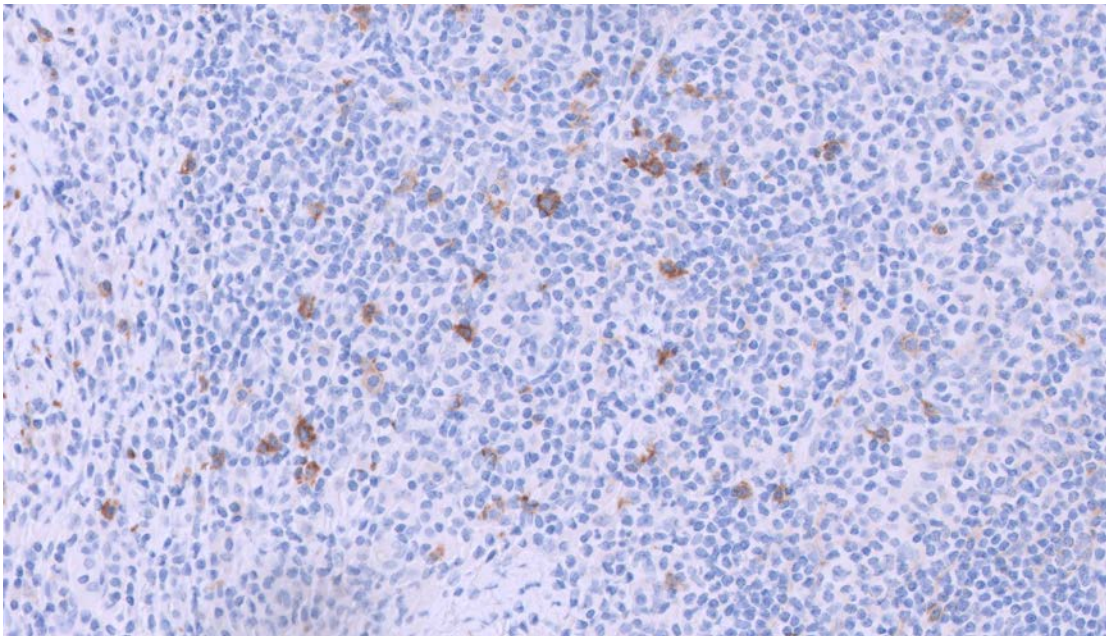
Clone: 123C3

Code: GA628 | IR628

Reaction Location	Cytoplasm and/or membrane	
Quality Control	**Colon/Appendix**	**Tonsil**
High Expression	Ganglion cells and axons of the Auerbach's plexus show a moderate to strong staining reaction.	NA
Low Expression	NA	Isolated T cells (NK cells) in the interfollicular areas show a weak to moderate staining reaction.
Non-expression	NA	NA



Appendix (5x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

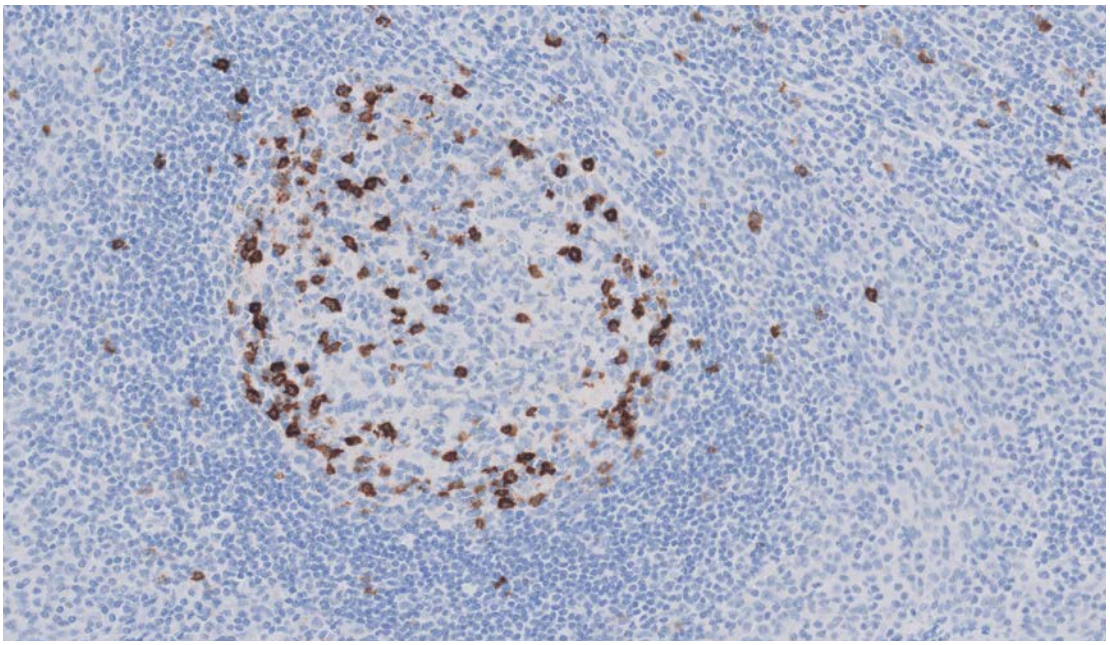
Antibody: **CD57**

Clone: TB01

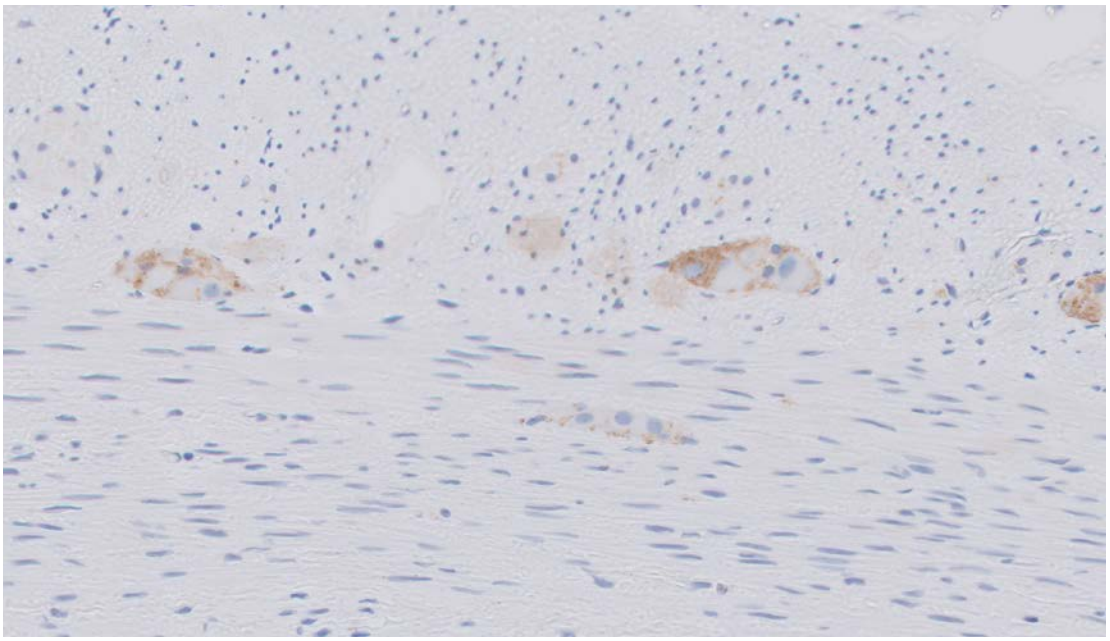
Code: GA647

Reaction Location	Membrane and/or cytoplasm	
Quality Control	**Tonsil**	**Colon/Appendix**
High Expression	NK/T cells in the T zone and at the edge of the germinal centers show a moderate to strong cytoplasmic and/or membrane staining reaction.	NA
Low Expression	NA	Schwann cells and scattered neurons, e.g.., in the Auerbach's and Meissner's plexus, show a weak to moderate cytoplasmic and/or membrane staining reaction.
Non-expression	NA	NA

Note: The NK cells typically show a weaker staining than T cells.



Tonsil (20x)



Appendix (20x)

Monoclonal Mouse Anti-Human

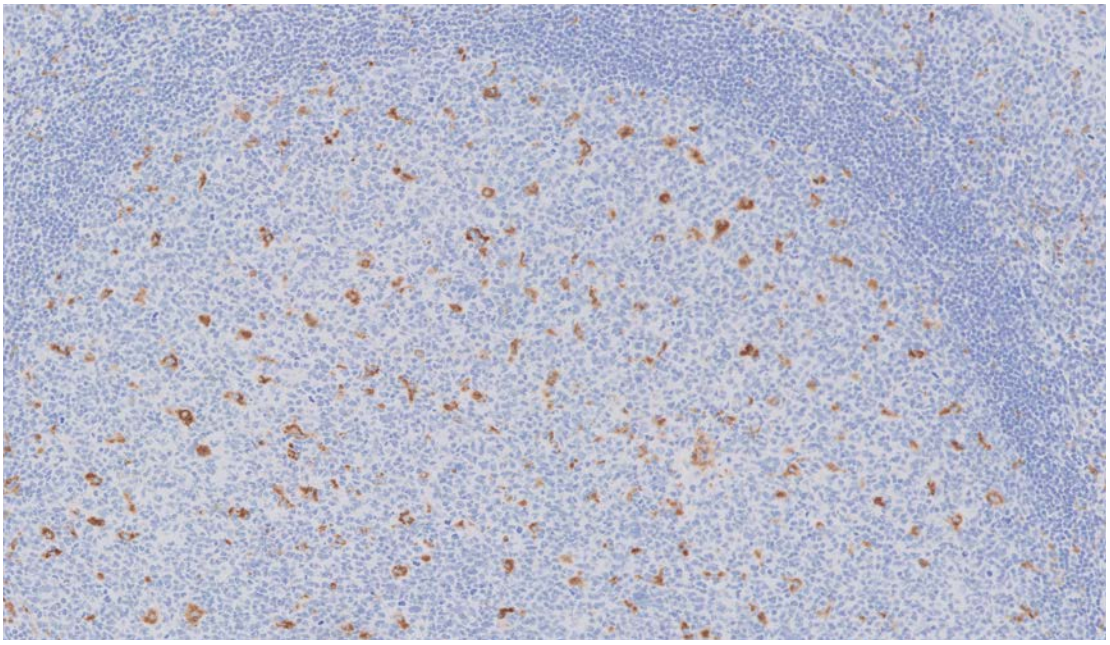
Antibody: **CD68**

Clone: KP1

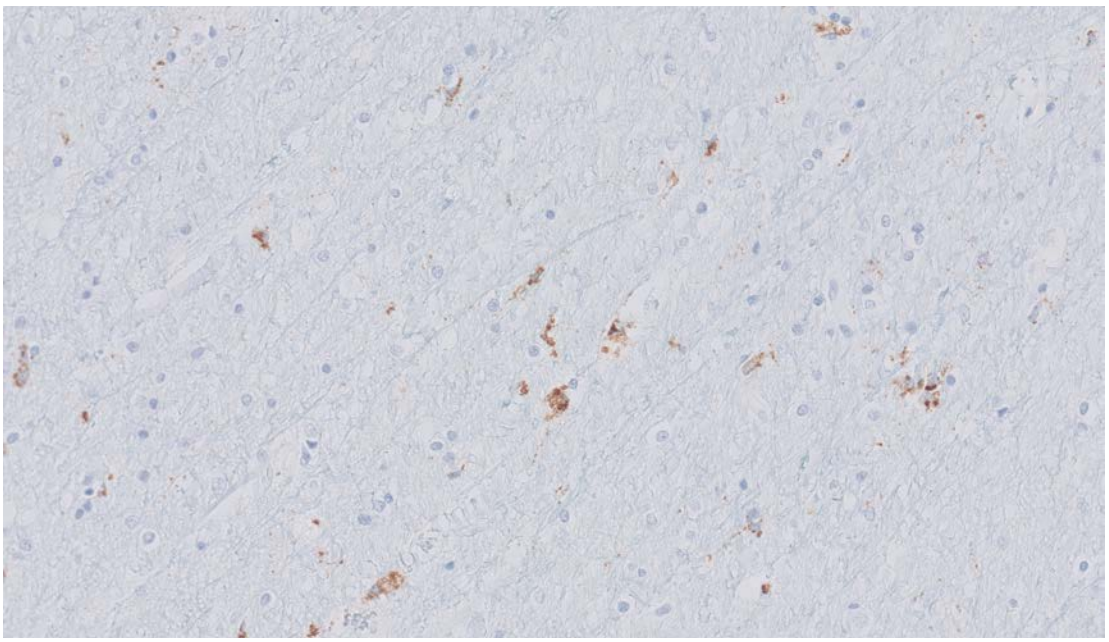
Code: GA609 | IR609

Reaction Location	Cytoplasm	
Quality Control	**Tonsil**	**Brain**
High Expression	Macrophages in the germinal centers show a moderate to strong staining reaction.	NA
Low Expression	NA	Microglial cells show a weak to moderate staining reaction.
Non-expression	Germinal center B cells	NA

Note: In the interfollicular areas of tonsil, the granulocytes and macrophages should show a granular cytoplasmic staining reaction.



Tonsil (20x)



Brain (20x)

Monoclonal Mouse Anti-Human

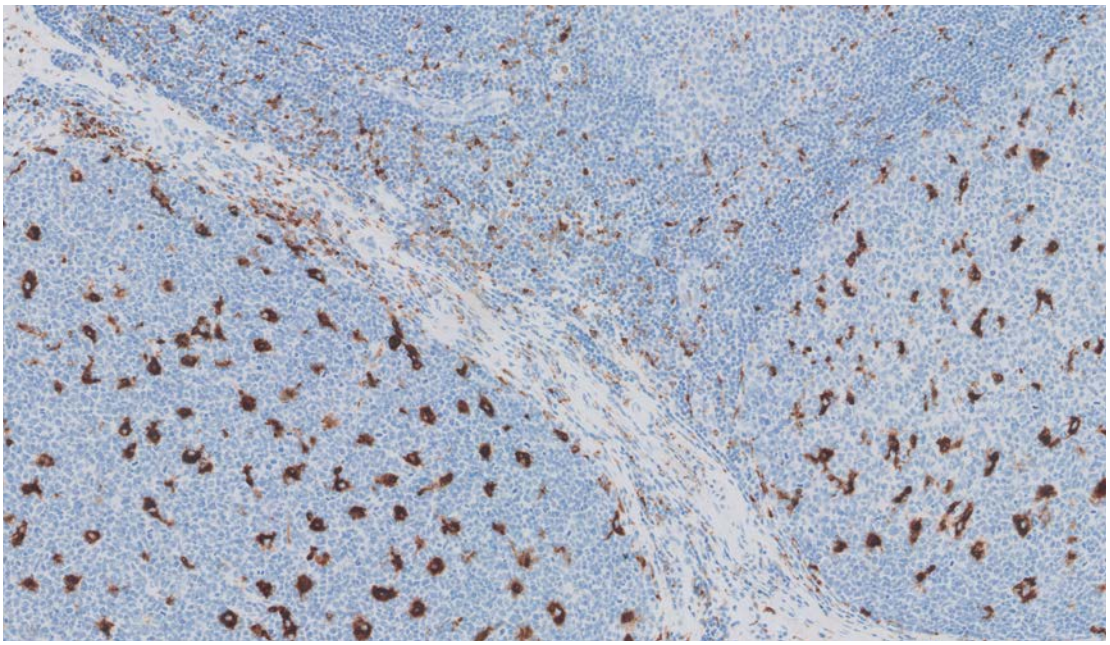
Antibody: **CD68**

Clone: PG-M1

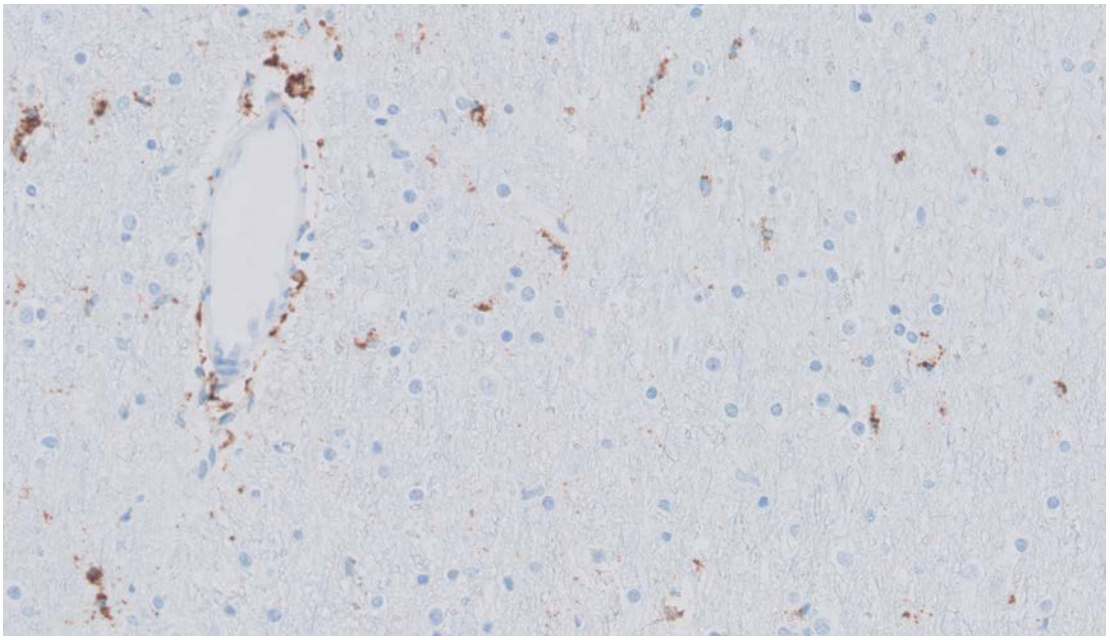
Code: GA613 | IR613

Reaction Location	Cytoplasm	
Quality Control	**Tonsil**	**Brain**
High Expression	Macrophages in the germinal centers show a moderate to strong staining reaction.	NA
Low Expression	NA	Microglial cells show a weak to moderate staining reaction.
Non-expression	Germinal center B cells	NA

Note: In the interfollicular areas of tonsil, the granulocytes and macrophages should show a granular cytoplasmic staining reaction.



Tonsil (10x)



Brain (20x)

Monoclonal Mouse Anti-Human

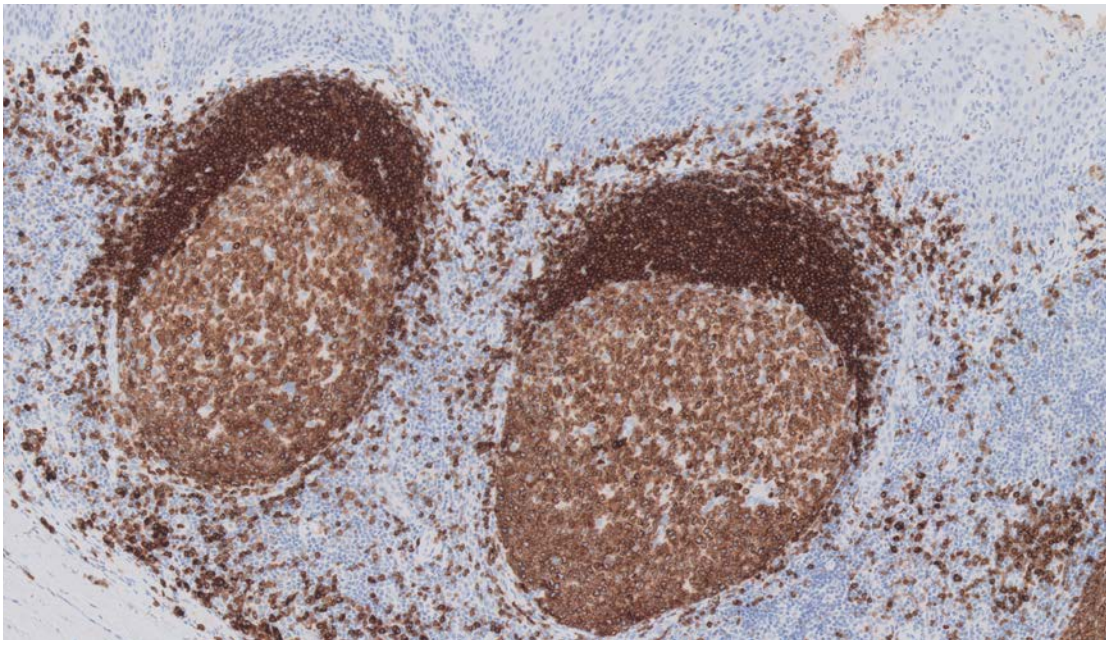
Antibody: **CD79α**

Clone: JCB117

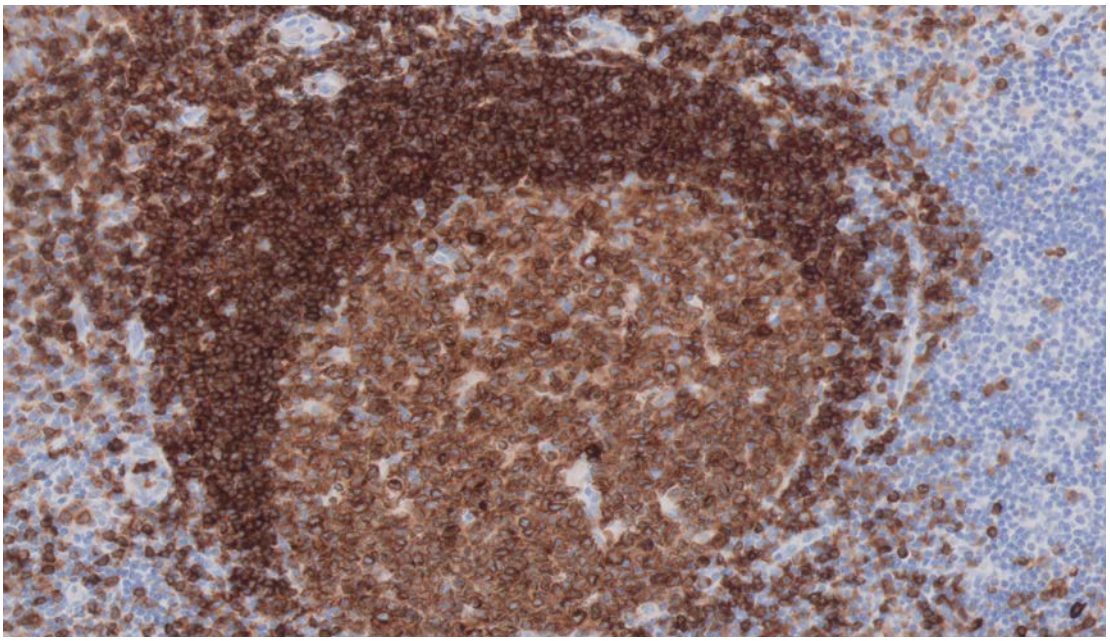
Code: GA621 | IR621

Reaction Location	Membrane and cytoplasm
Quality Control	**Tonsil**
High Expression	Plasma cells show strong cytoplasmic staining reaction. B cells in the mantle zone show a moderate to strong predominantly membranous staining reaction.
Low Expression	B cells in the germinal centers show a weak to moderate staining reaction.
Non-expression	Squamous epithelial cells and T cells

Note: Plasma cells should show a strong cytoplasmic staining reaction.



Tonsil (10x)



Tonsil (20x)

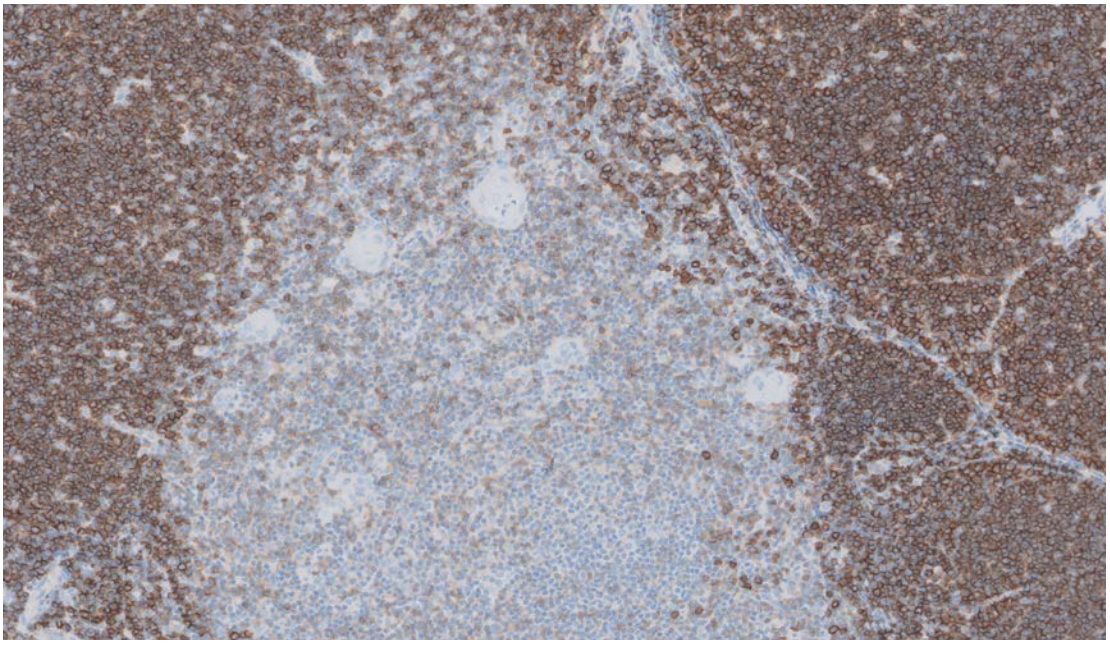
Monoclonal Mouse Anti-Human

Antibody: **CD99, MIC2 Gene Products, Ewing's Sarcoma Marker**

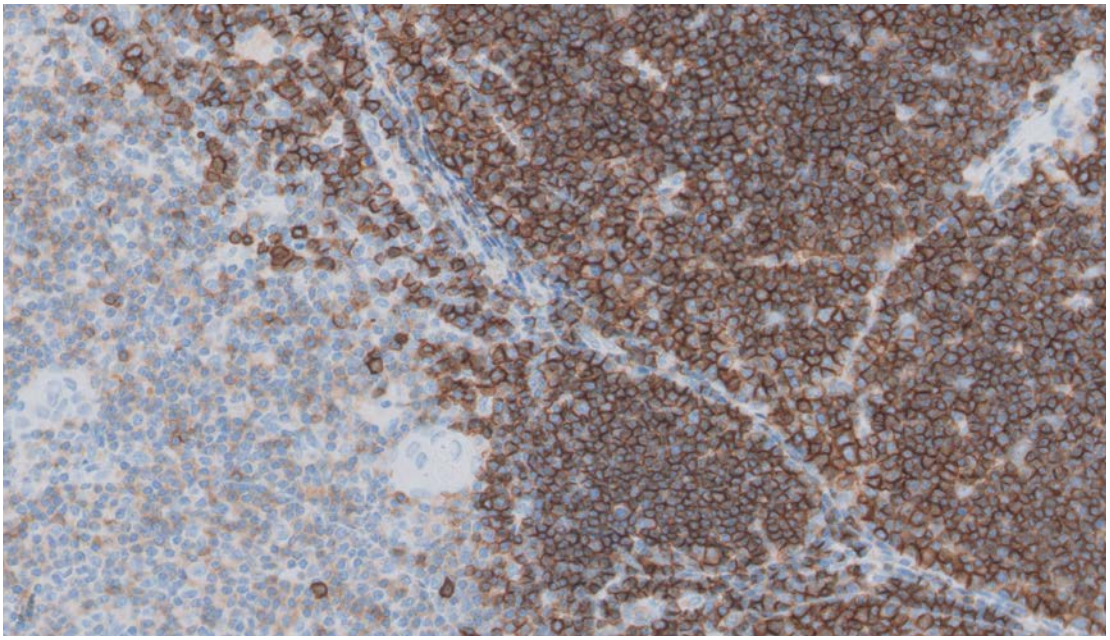
Clone: 12E7

Code: IR057

Reaction Location	Membrane and cytoplasm
Quality Control	**Thymus**
High Expression	Cortical thymocytes show moderate to strong membranous staining reaction.
Low Expression	Dispersed medullary thymocytes show weak to moderate membranous staining reaction.
Non-expression	NA



Thymus (10x)



Thymus (20x)

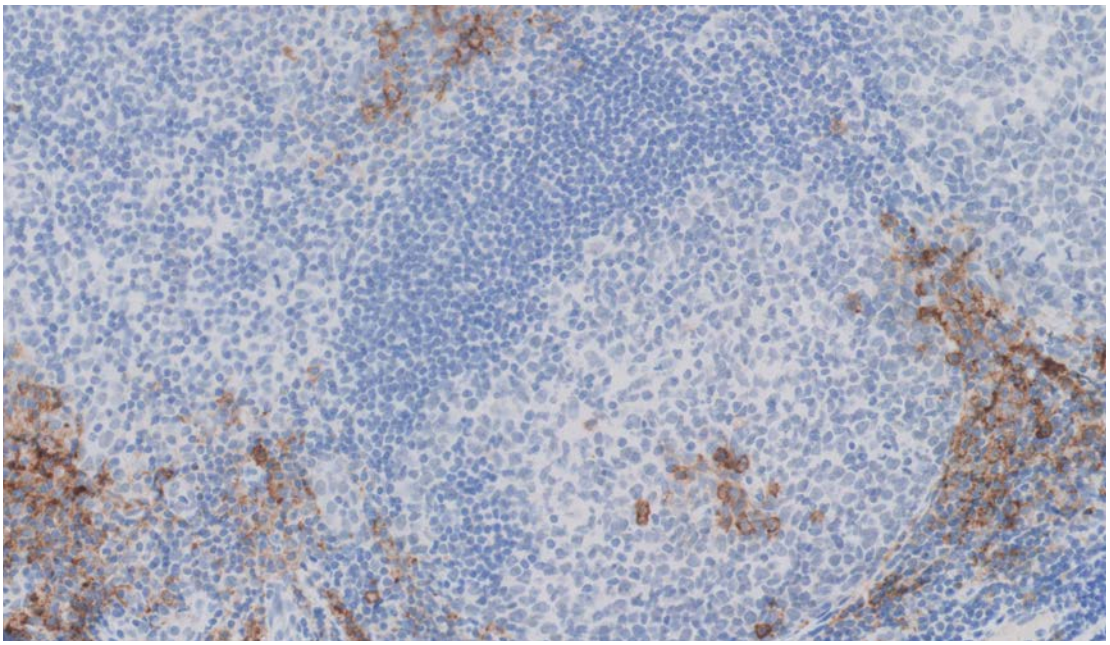
Monoclonal Mouse Anti-Human

Antibody: **CD138**

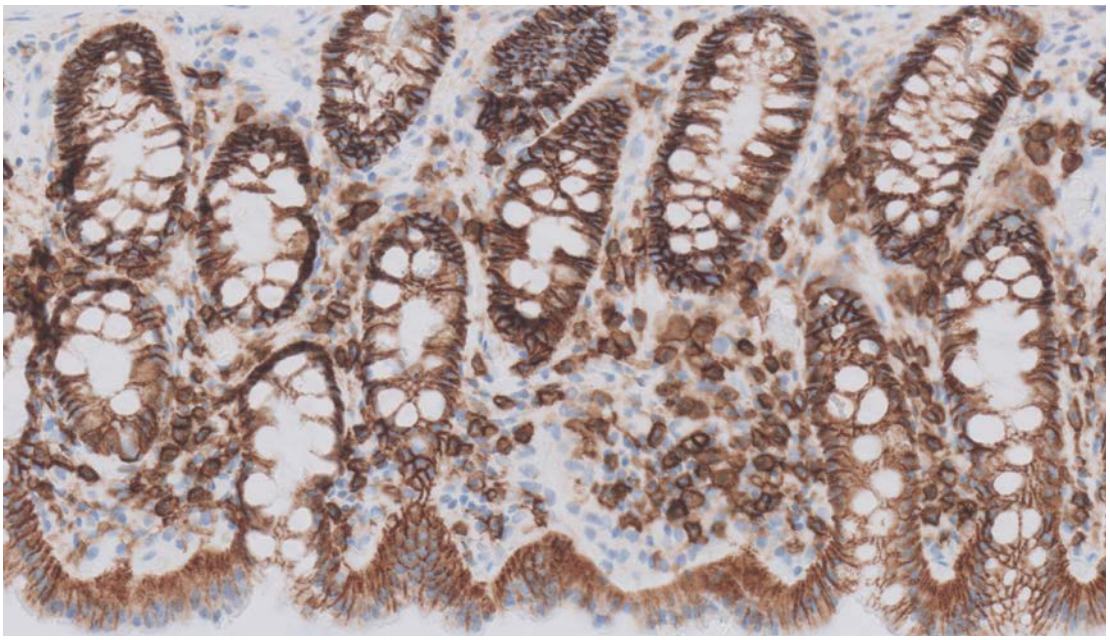
Clone: MI15

Code: GA642 | IR642

Reaction Location	Membrane	
Quality Control	**Tonsil**	**Colon/Appendix**
High Expression	Plasma cells show a moderate to strong staining reaction.	The majority of the plasma cells in lamina propria show a moderate to strong staining reaction. The luminal and basal epithelial cells are demonstrated.
Low Expression	Epithelial cells should show a weak to moderate staining reaction.	NA
Non-expression	The majority of the germinal center cells and peripheral lymphocytes.	NA



Tonsil (20x)



Colon (20x)

Monoclonal Mouse Anti-Human

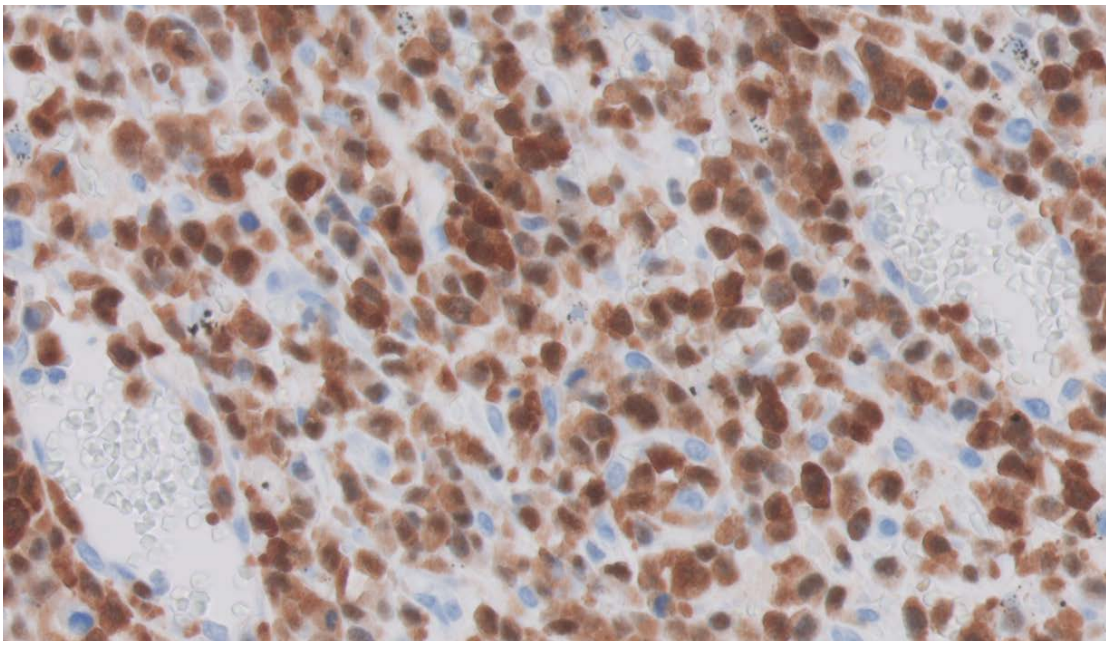
Antibody: **CD246, ALK Protein**

Clone: ALK1

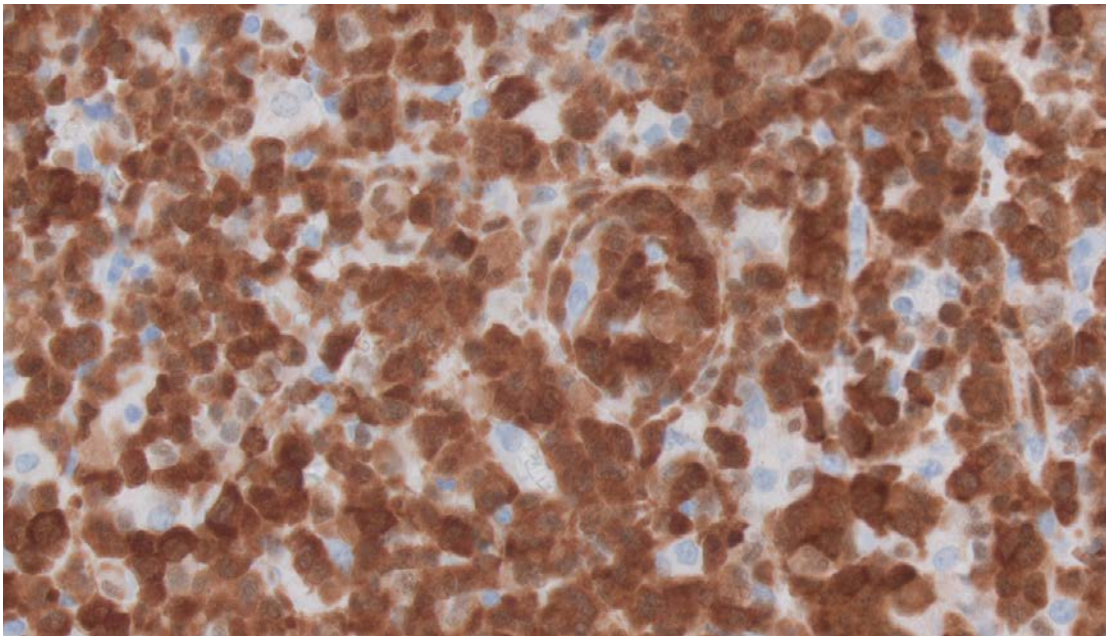
Code: GA641

Reaction Location	Nucleus and/or cytoplasm
Quality Control	**Anaplastic large cell lymphoma with t(2;5) translocation**
High Expression	Neoplastic cells show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	NA

Note: A strong staining in nuclei and a weaker cytoplasmic staining is often seen.



Anaplastic large cell lymphoma (40x)



Anaplastic large cell lymphoma (40x)

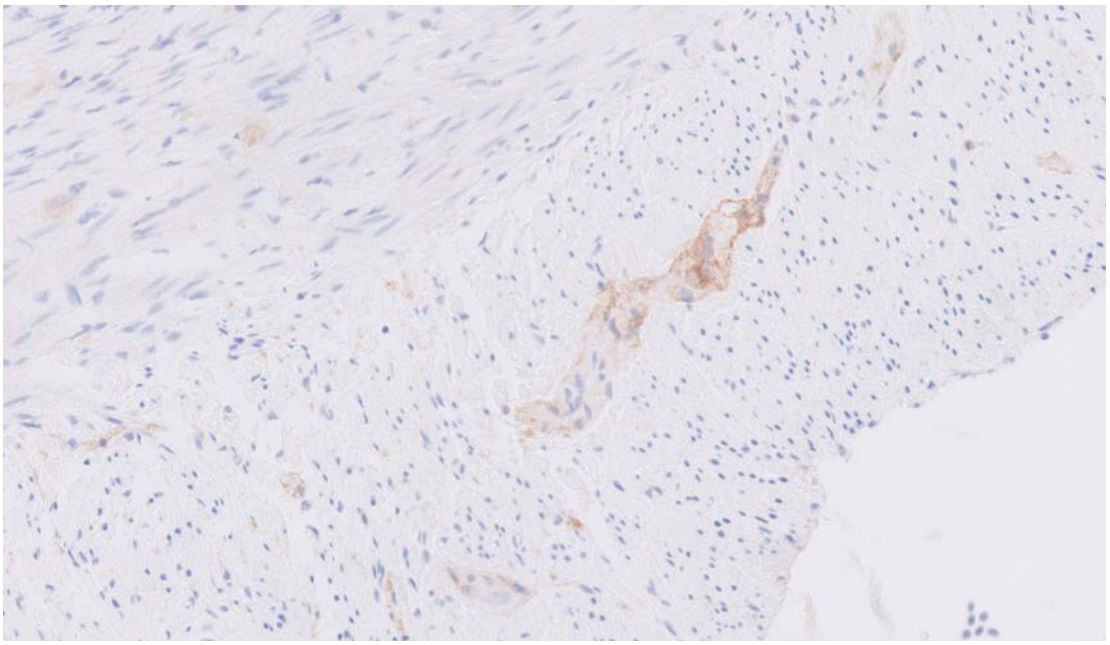
Monoclonal Mouse Anti-Human

Antibody: **CD246, ALK Protein**

Clone: OTI1A4

Code: GA785

Reaction Location	Cytoplasm
Quality Control	**Colon/Appendix**
High Expression	NA
Low Expression	The ganglion cells of the myenteric plexus show a moderate, distinct cytoplasmic staining reaction. The axons show a weak to moderate cytoplasmic staining reaction.
Non-expression	NA



Appendix (20x)

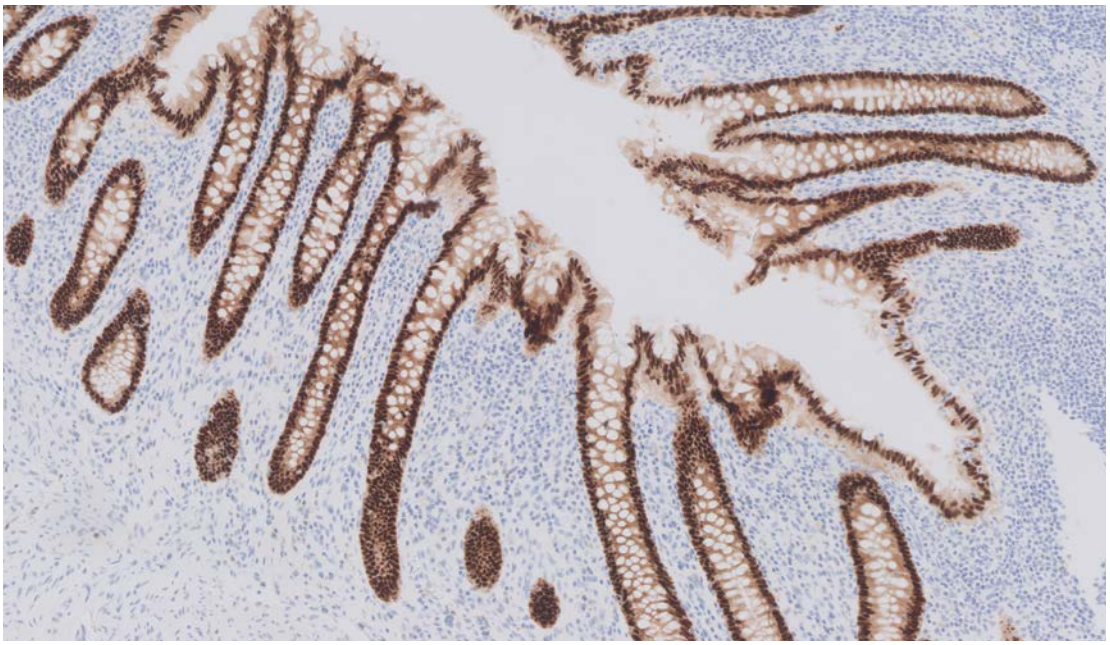
Monoclonal Mouse Anti-Human

Antibody: **CDX-2**

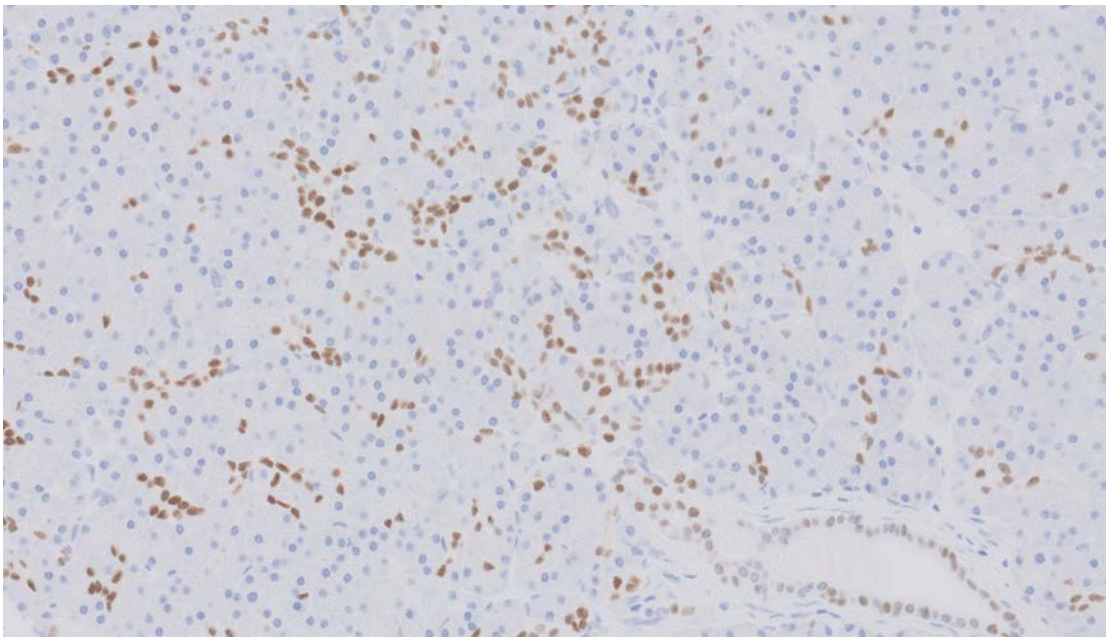
Clone: DAK-CDX-2

Code: GA080 | IR080

Reaction Location	Nucleus	
Quality Control	**Appendix**	**Pancreas**
High Expression	Columnar epithelial cells show a moderate to strong staining reaction.	NA
Low Expression	NA	Ductal and scattered intercalated epithelial cells show a weak to moderate staining reaction.
Non-expression	NA	NA



Appendix (10x)



Pancreas (20x)

Polyclonal Rabbit Anti-Human

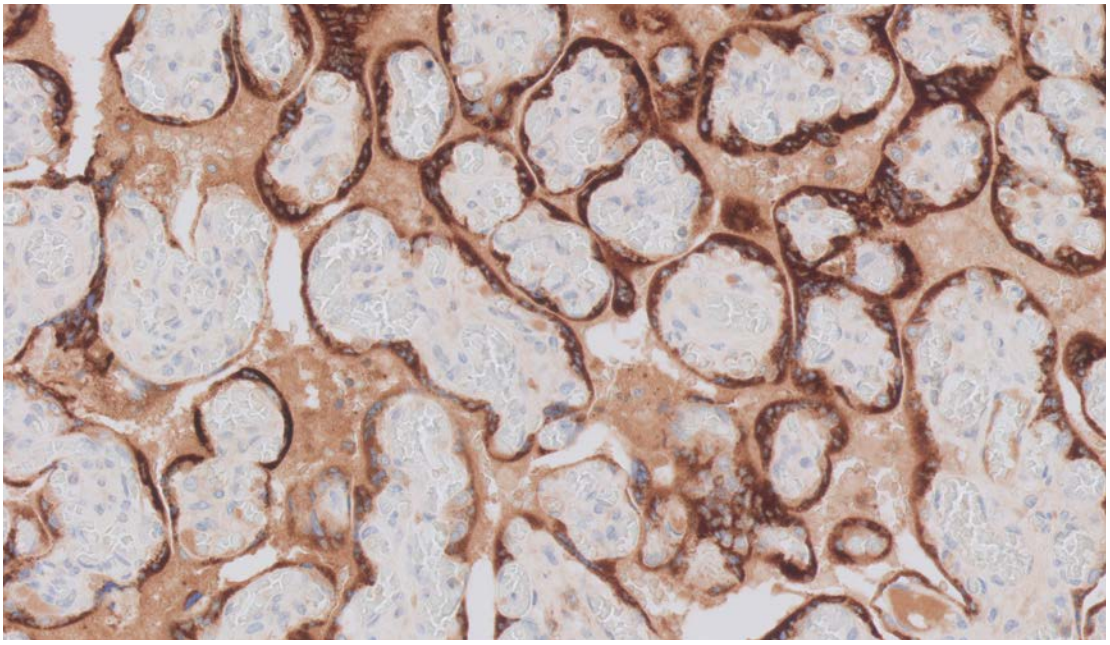
Antibody: **Chorionic Gonadotropin**

Clone: Polyclonal

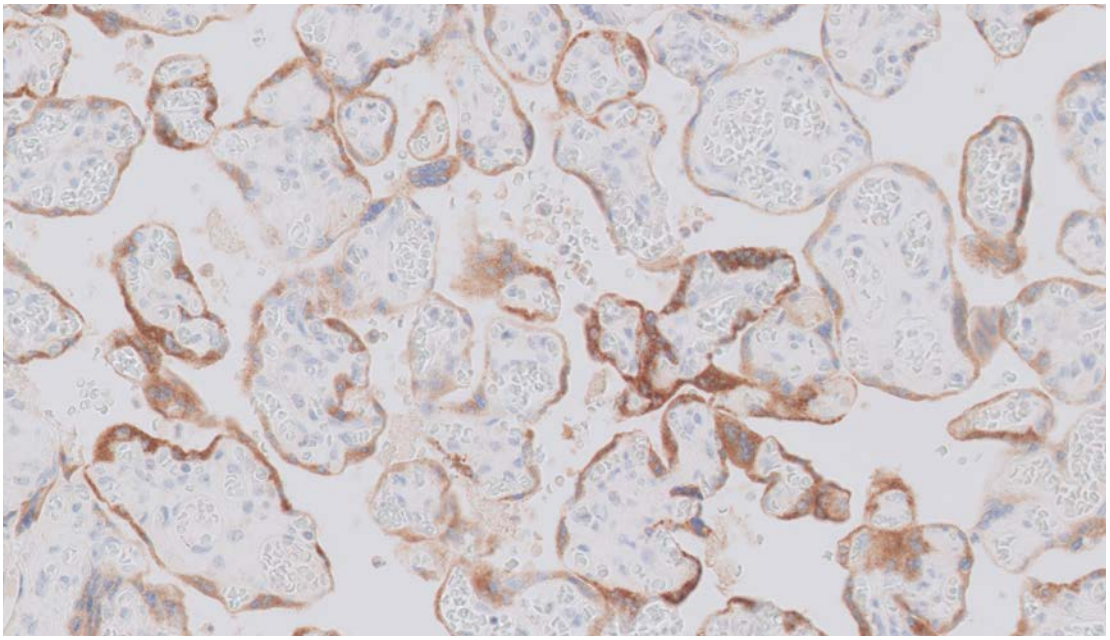
Code: GA508

Reaction Location	Cytoplasm
Quality Control	**Placenta**
High Expression	Trophoblasts and syncytiotrophoblasts show a moderate to strong staining reaction.
Low Expression	Macrophages and serum show a weak staining reaction.
Non-expression	Stroma cells.

Note: The staining pattern in placenta may vary depending on pregnancy stage.



Placenta (20x)



Placenta (20x)

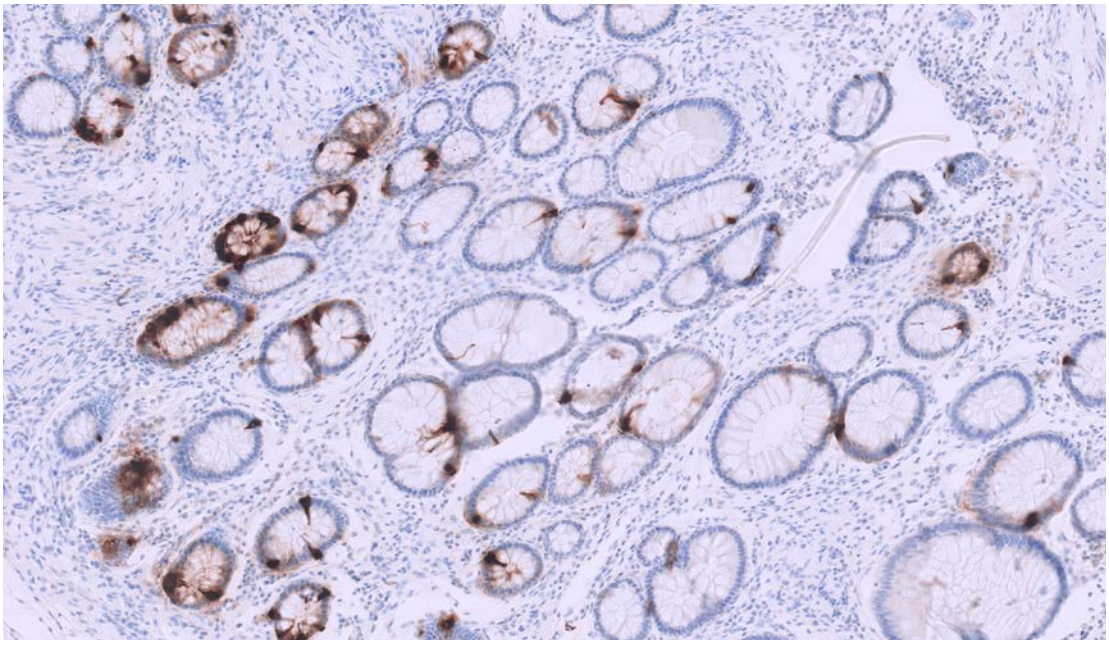
Monoclonal Mouse Anti-Human

Antibody: **Chromogranin A**

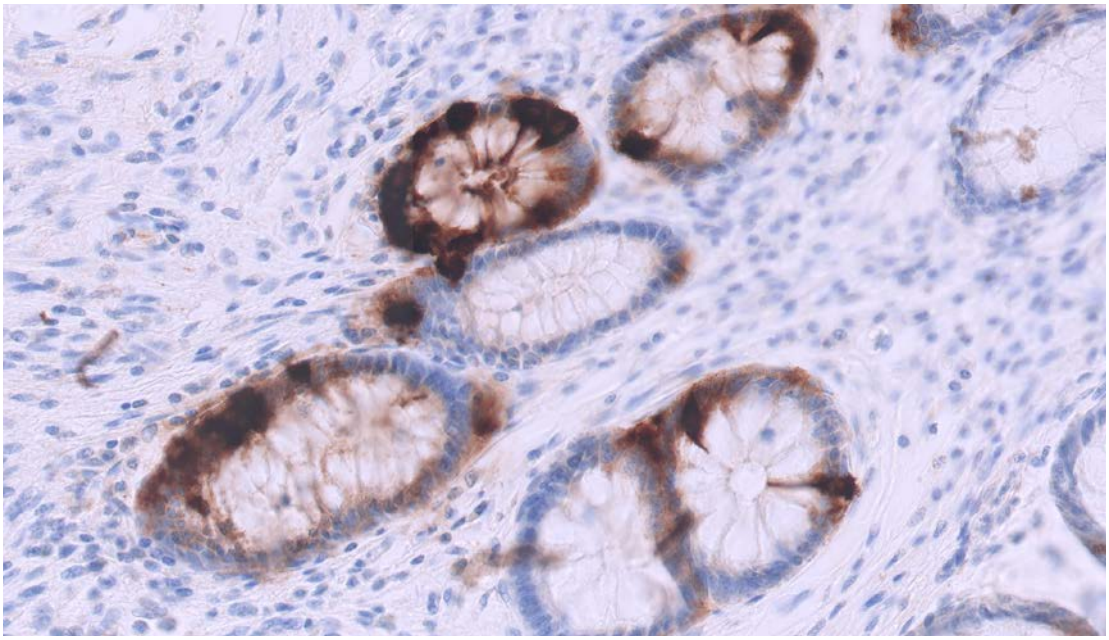
Clone: LK2H10

Code: GA789

Reaction Location	Cytoplasm, granular
Quality Control	**Colon/Appendix**
High Expression	Neuroendocrine cells in the mucosa show a strong cytoplasmic staining reaction and diffusion of the staining in the vicinity of these cells is accepted.
Low Expression	Axons and ganglion cells of the peripheral nerves show a weak to moderate distinct granular staining.
Non-expression	Columnar epithelial cells and smooth muscle cells



Appendix (10x)



Appendix (20x)

Monoclonal Rabbit Anti-Human

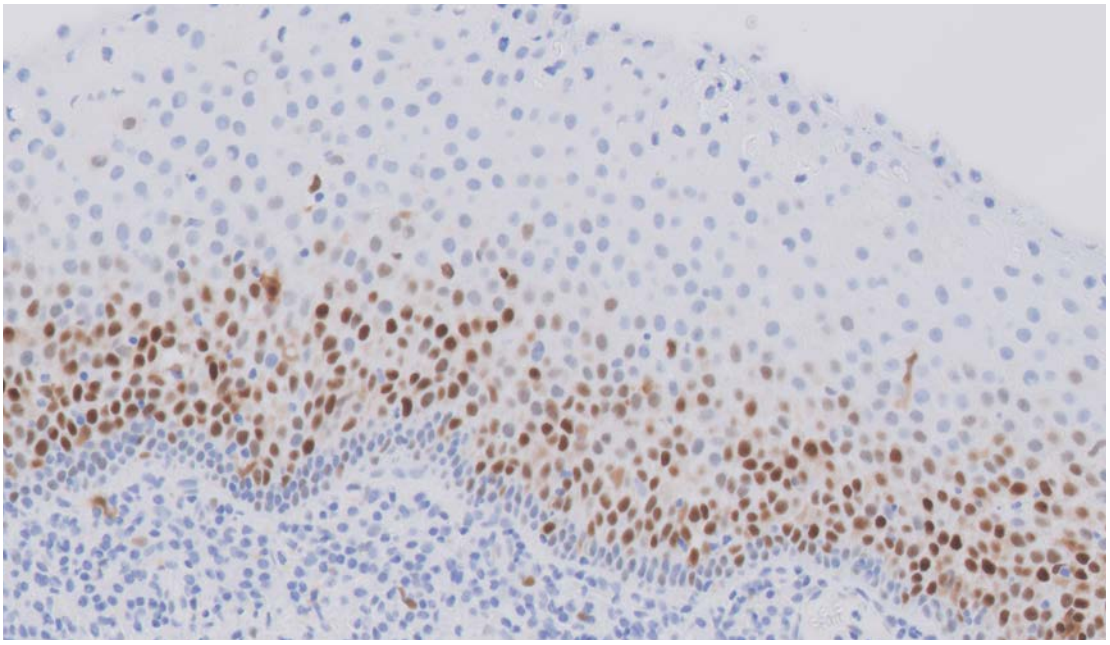
Antibody: **Cyclin D1**

Clone: EP12

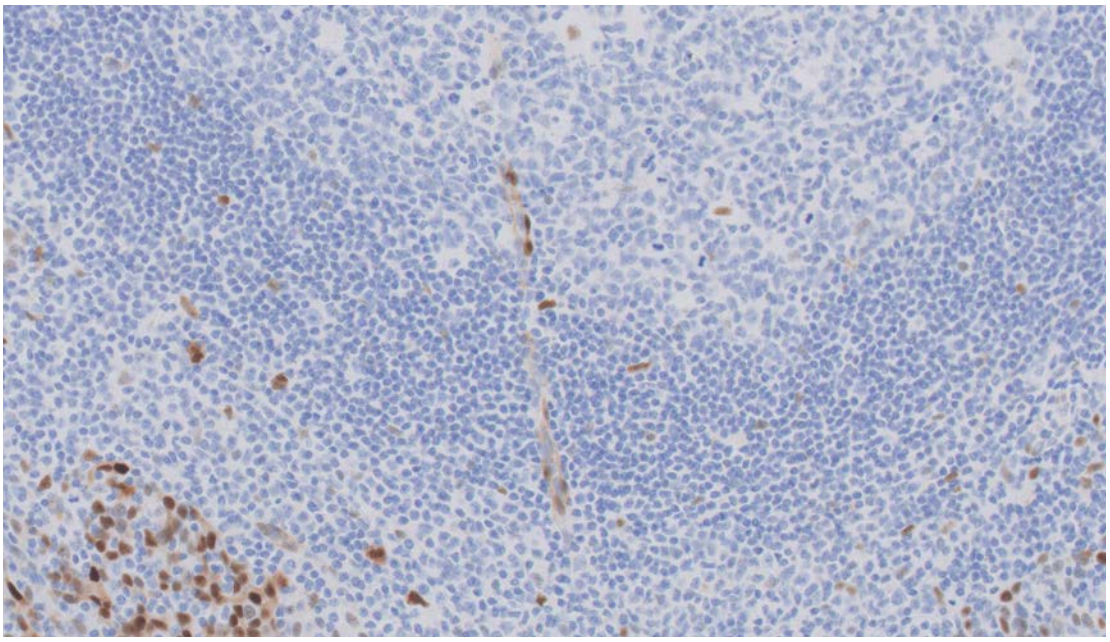
Code: GA083 | IR083

Reaction Location	Nucleus
Quality Control	**Tonsil**
High Expression	Suprabasal squamous epithelial cells show a weak to strong staining reaction.
Low Expression	Scattered endothelial cells show a weak to moderate staining reaction.
Non-expression	Vast majority of lymphoid cells.

Note: A weak cytoplasmic staining reaction together with the specific nuclear reaction is acceptable.



Tonsil (20x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

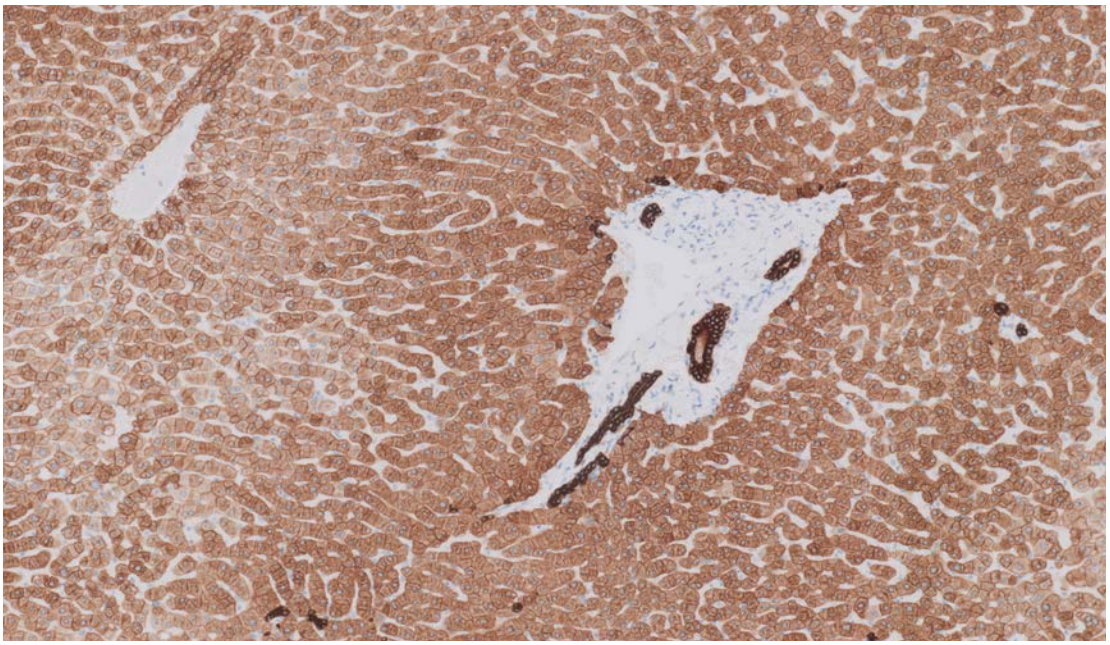
Antibody: **Cytokeratin**

Clone: AE1/AE3

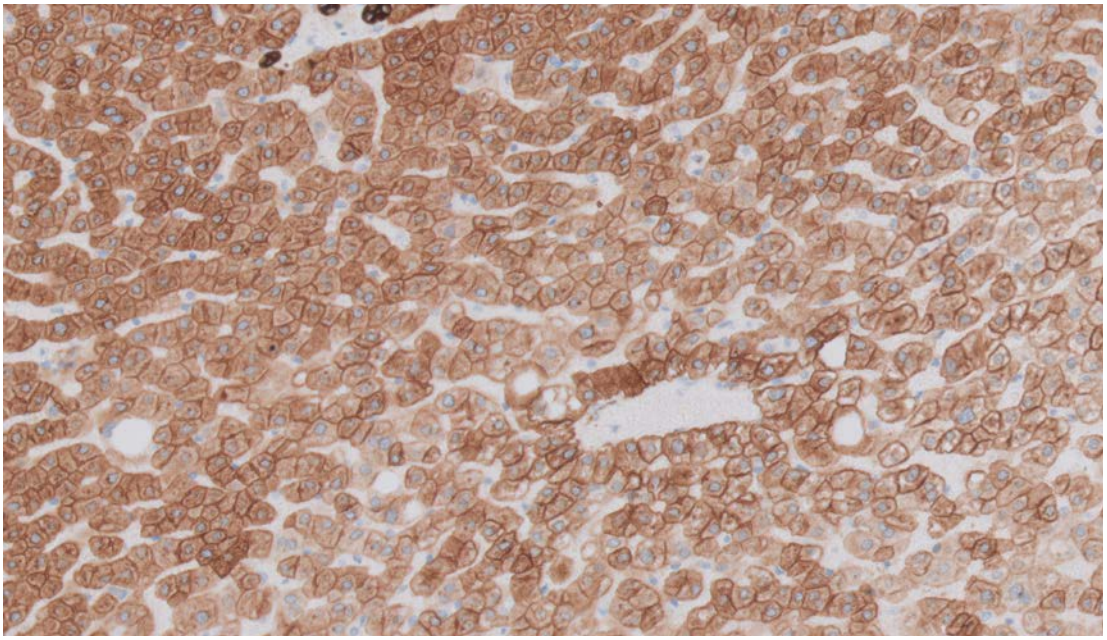
Code: GA053 | IR053

Reaction Location	Cytoplasm
Quality Control	**Liver**
High Expression	Bile ducts cells show a moderate to strong staining reaction.
Low Expression	Hepatocytes show a weak to moderate, predominantly membranous, staining reaction.
Non-expression	Stroma cells

Note: The interdigitating reticulum cells in lymphoid tissue can be positive.



Liver (10x)



Liver (20x)

Monoclonal Mouse Anti-Human

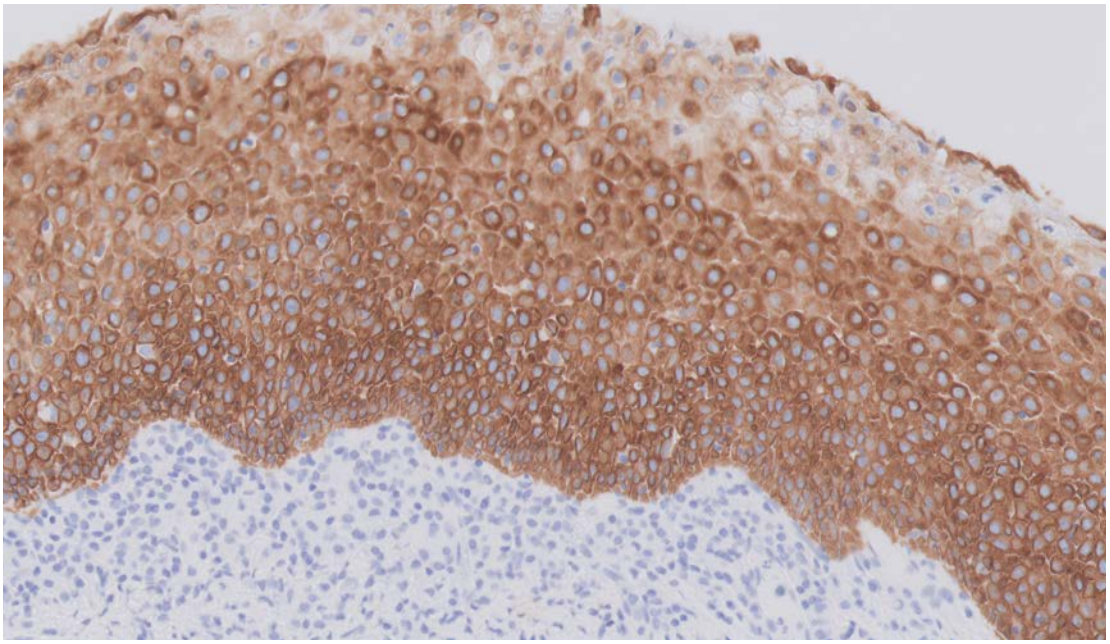
Antibody: **Cytokeratin 5/6**

Clone: D5/16 B4

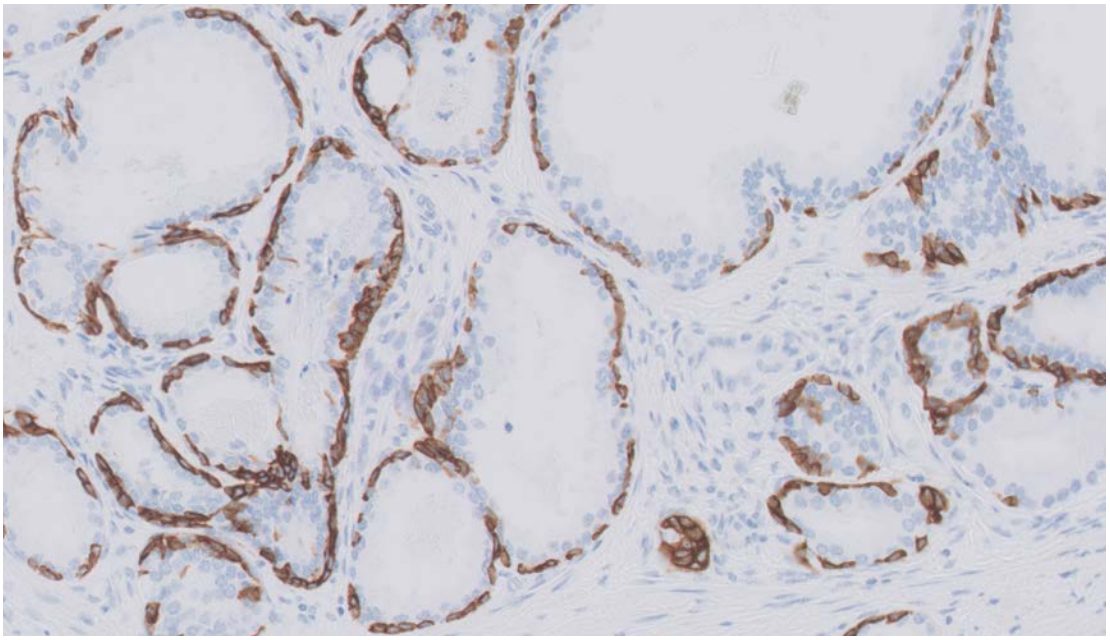
Code: GA780 | IR780

Reaction Location	Cytoplasm	
Quality Control	**Tonsil**	**Prostate**
High Expression	Squamous epithelial cells show a moderate to strong staining reaction.	Basal cells show a moderate to strong cytoplasmic staining reaction with no or only focal reaction in the secretory cells.
Low Expression	NA	NA
Non-expression	NA	NA

Note: The staining reaction is seen in all cell layers in the epithelial surface.



Tonsil (20x)



Prostate (20x)

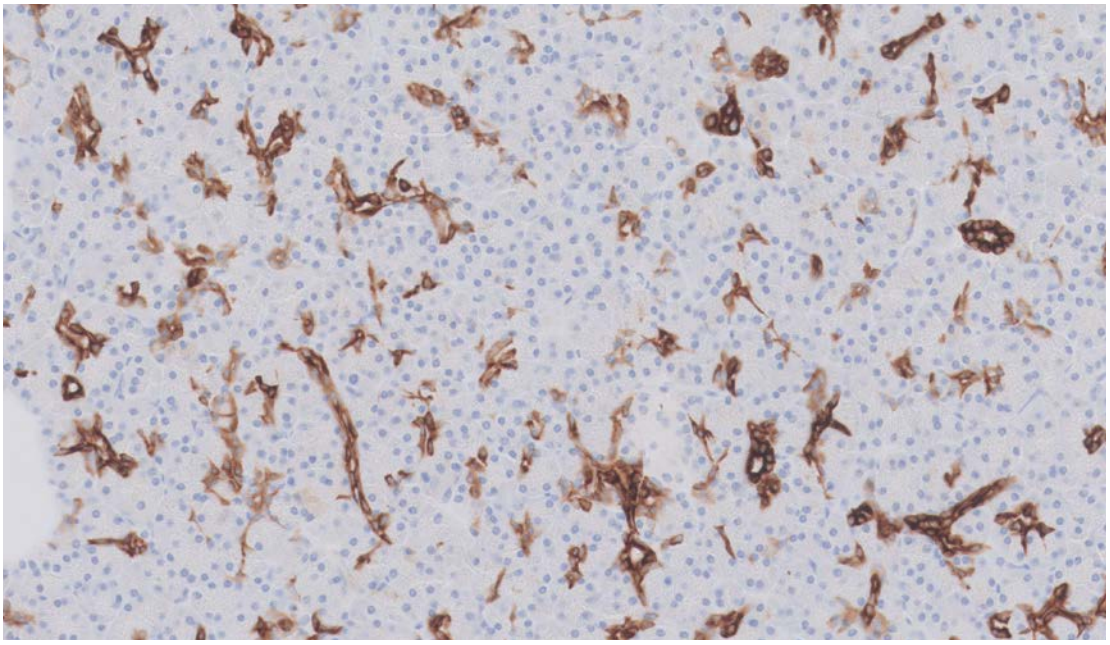
Monoclonal Mouse Anti-Human

Antibody: **Cytokeratin 7**

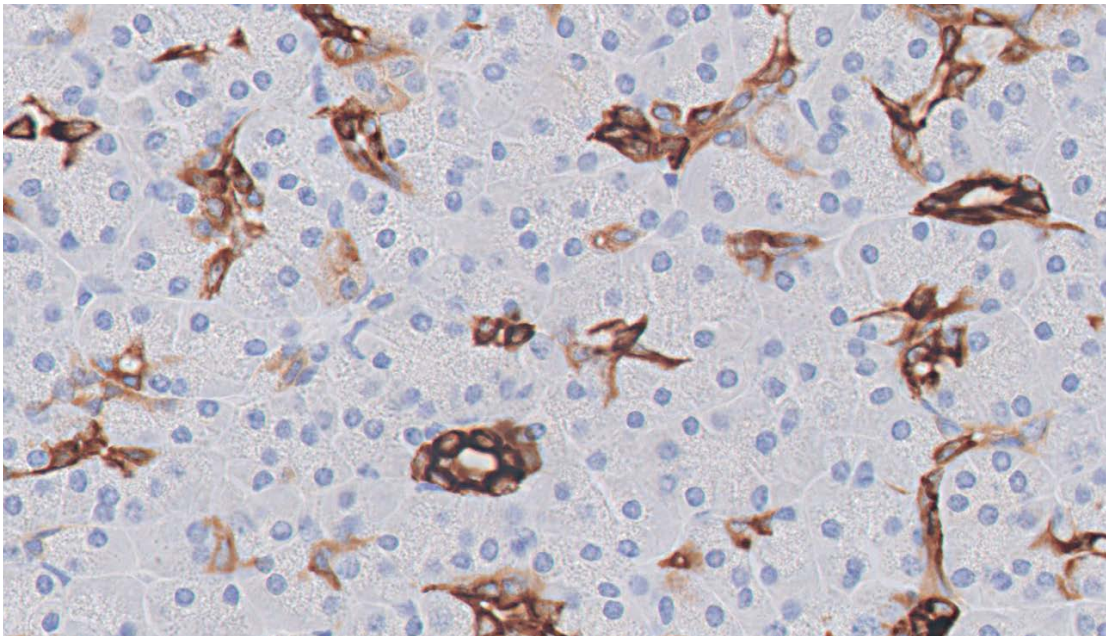
Clone: OV-TL12/30

Code: GA619 | IR619

Reaction Location	Cytoplasm
Quality Control	**Pancreas**
High Expression	Epithelial cells of the large acinar ducts show a moderate to strong staining reaction.
Low Expression	Epithelial cells of intercalating pancreatic ducts show a weak to moderate staining reaction.
Non-expression	Pancreatic acinar cells.



Pancreas (20x)



Pancreas (40x)

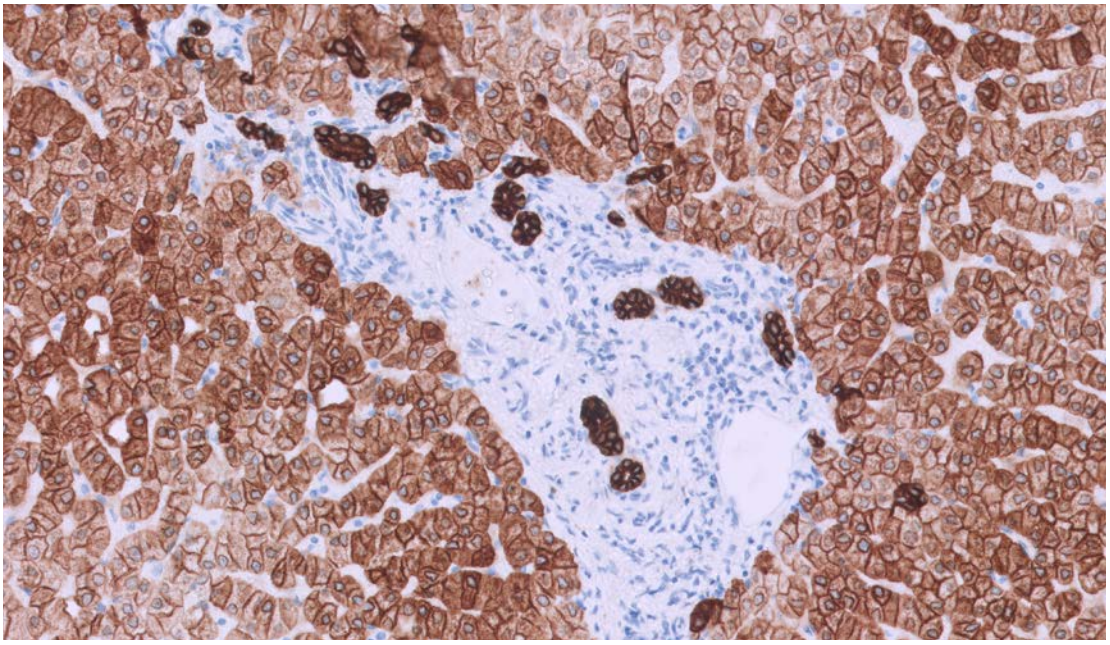
Monoclonal Rabbit Anti-Human

Antibody: **Cytokeratin 8/18**

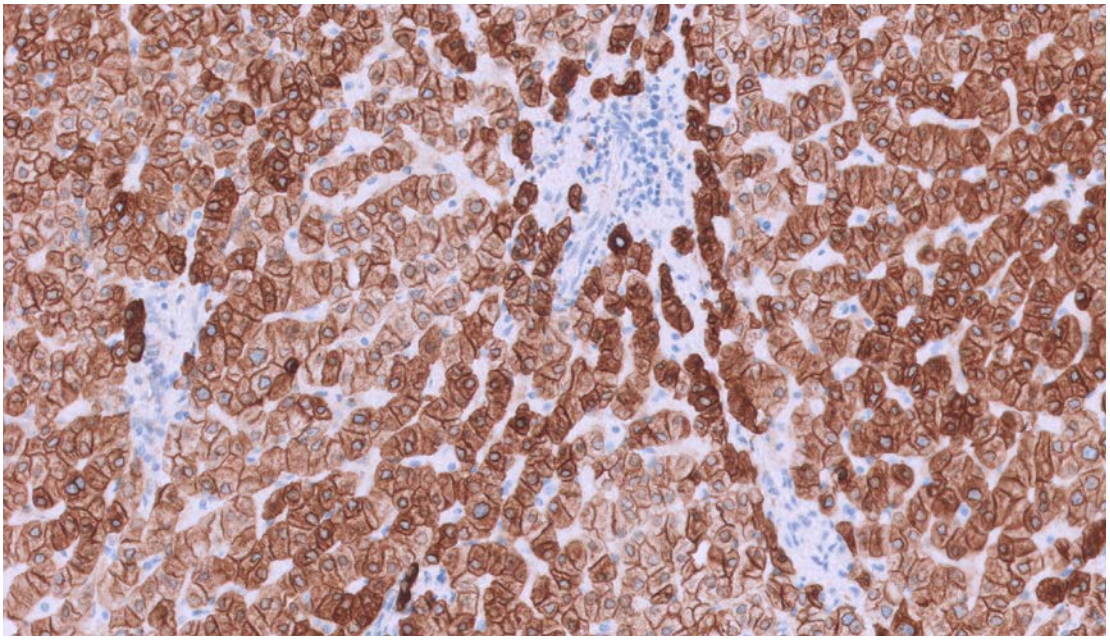
Clone: EP17/EP30

Code: GA094

Reaction Location	Cytoplasm and membrane
Quality Control	**Liver**
High Expression	Bile ducts show a moderate to strong cytoplasmic and membranous staining reaction.
Low Expression	Hepatocytes show a weak to strong cytoplasmic and membranous staining reaction.
Non-expression	NA



Liver (20x)



Liver (20x)

Monoclonal Rabbit Anti-Human

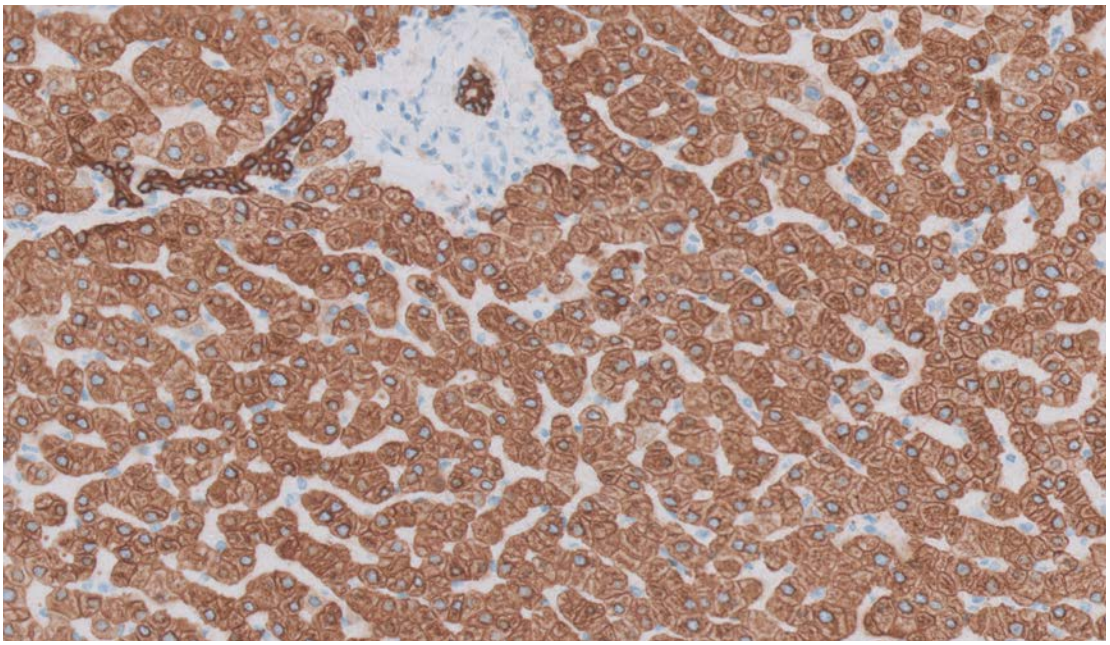
Antibody: **Cytokeratin 8/18**

Clone: EP17/EP30

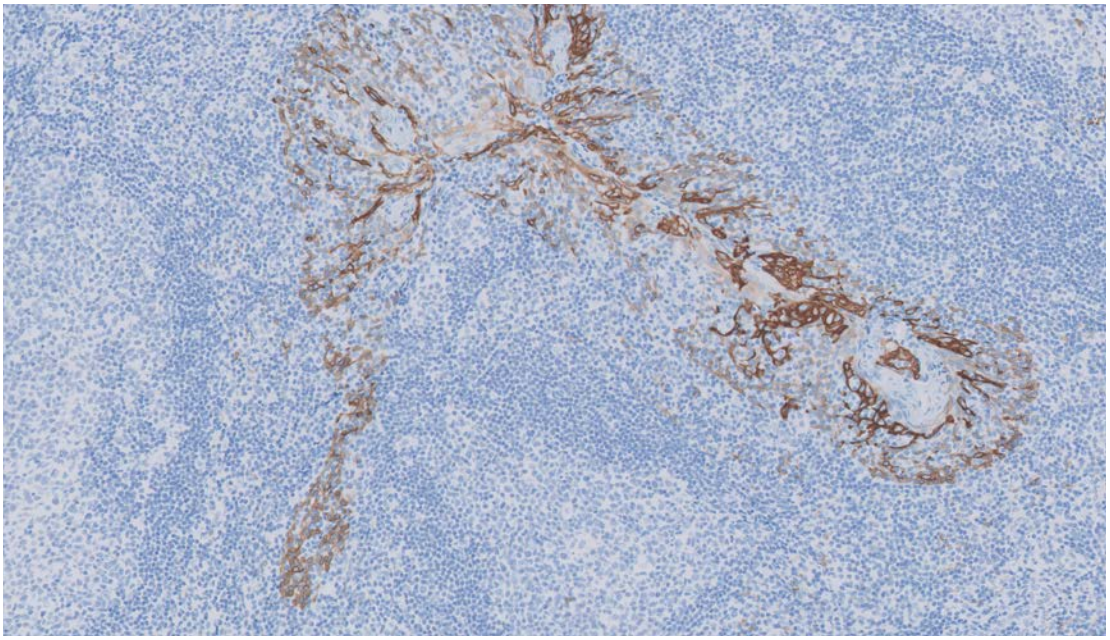
Code: IR094

Reaction Location	Membrane and/or cytoplasm	
Quality Control	**Liver**	**Tonsil**
High Expression	Epithelial cells of bile ducts show a moderate to strong staining reaction.	Reactive squamous epithelial cells show a moderate to strong staining reaction.
Low Expression	Hepatocytes show a weak to moderate staining reaction.	NA
Non-expression	NA	NA

Note: Staining of interdigitating reticulum cells may be observed within lymphoid tissues.



Liver (20x)



Tonsil (10x)

Monoclonal Mouse Anti-Human

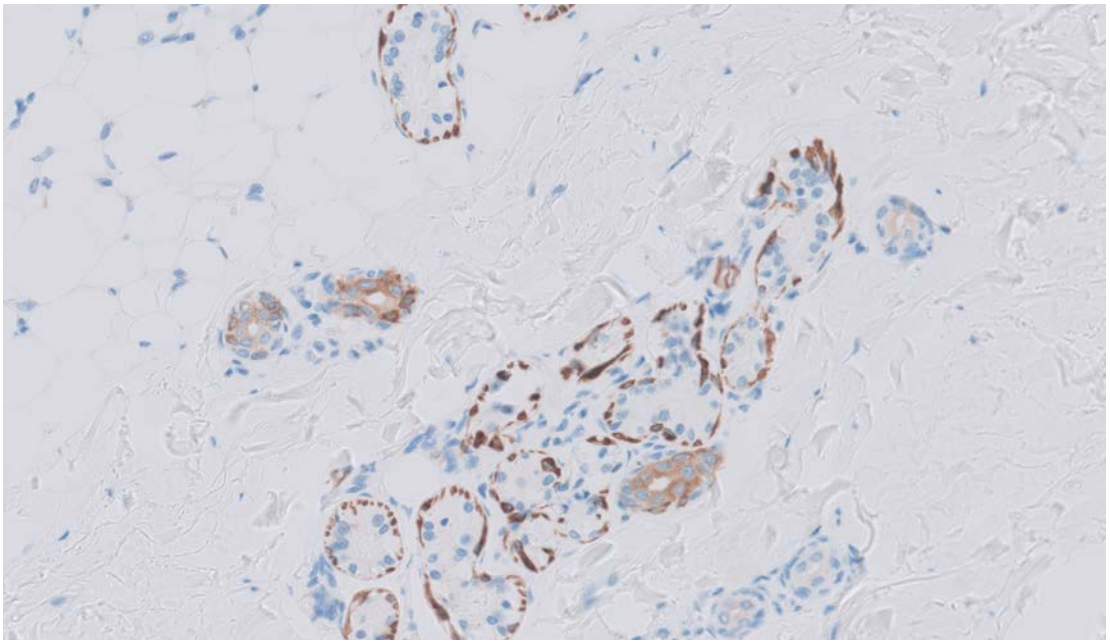
Antibody: **Cytokeratin 17**

Clone: E3

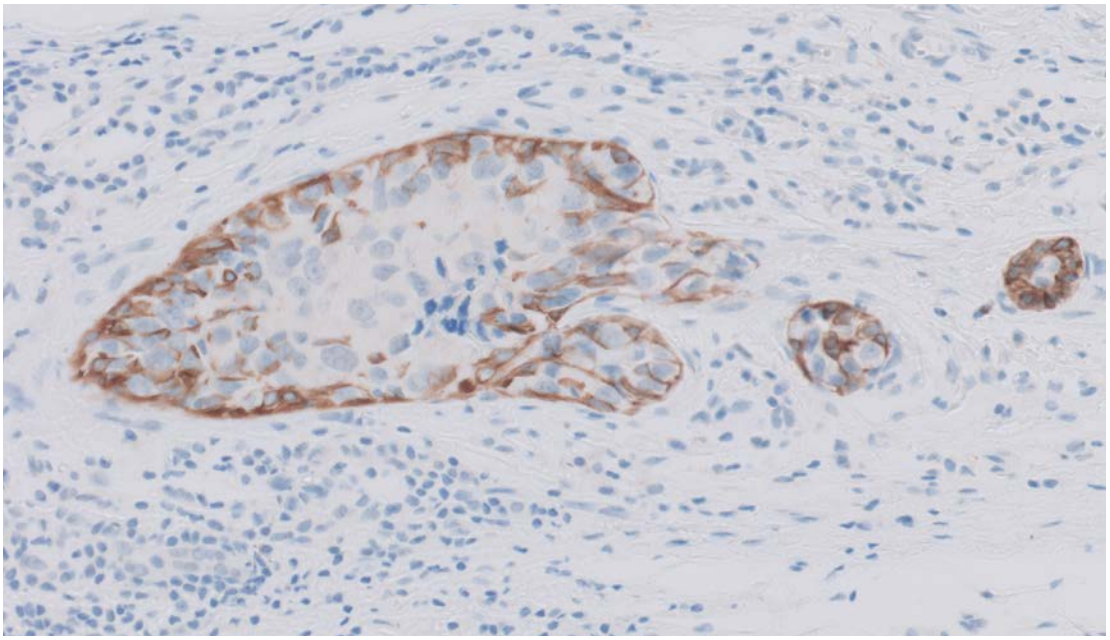
Code: IR620

Reaction Location	Cytoplasm and/or membrane	
Quality Control	**Skin**	**Breast hyperplasia**
High Expression	Myoepithelial cells of the sweat glands show a moderate to strong staining reaction.	Myoepithelial cells of the epithelial glands show a strong and distinct staining reaction with no staining in the epithelial cells.
Low Expression	NA	NA
Non-expression	Normal gland epithelial cells and squamous epithelial cells	NA

Note: Some gland epithelial cells may display staining of cytoplasm.



Skin (20x)



Breast hyperplasia (20x)

Monoclonal Mouse Anti-Human

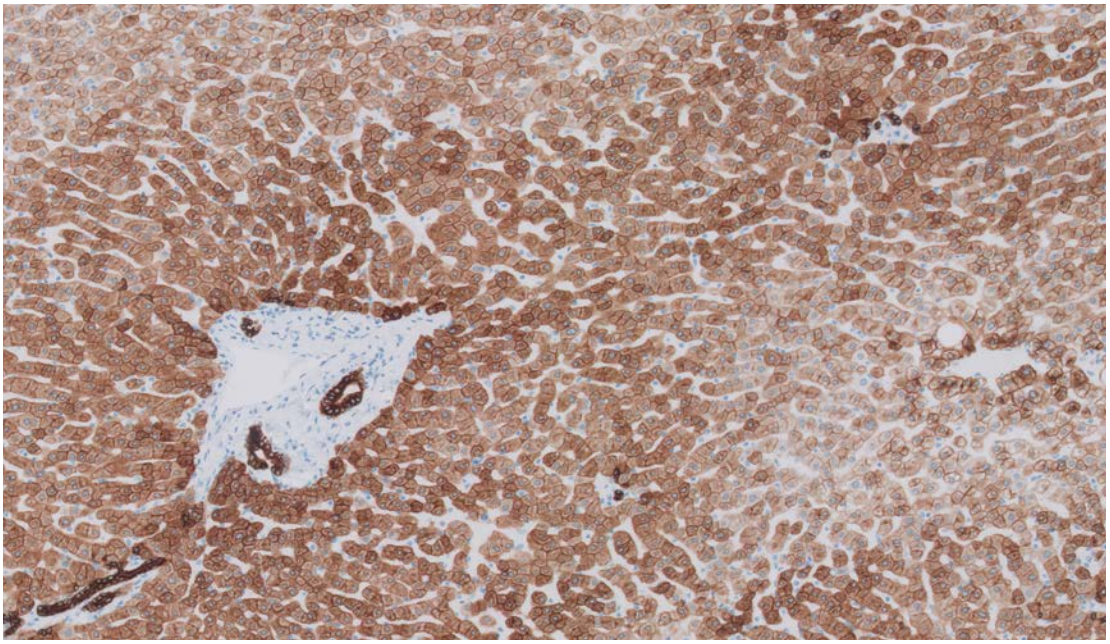
Antibody: **Cytokeratin 18**

Clone: DC10

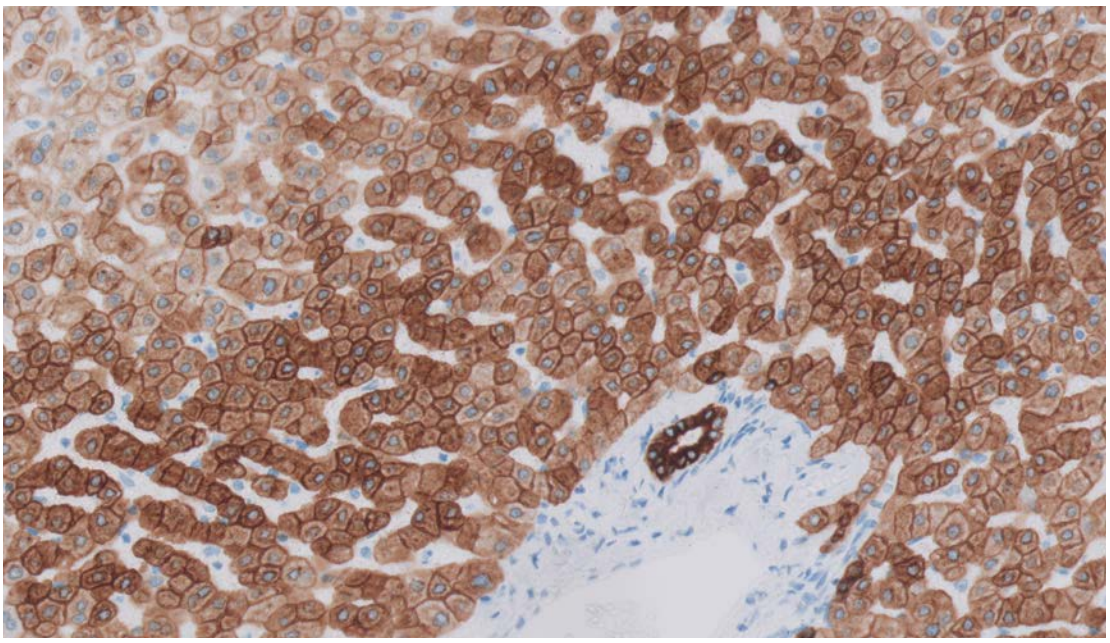
Code: GA618

Reaction Location	Membrane and cytoplasm
Quality Control	**Liver**
High Expression	Epithelial cells of the bile ducts show a moderate to strong staining reaction.
Low Expression	Membranes of hepatocytes show a weak to moderate staining reaction.
Non-expression	Kupffer cells

Note: The staining reaction can be heterogeneous with the strongest staining reaction in the periportal zones.



Liver (10x)



Liver (20x)

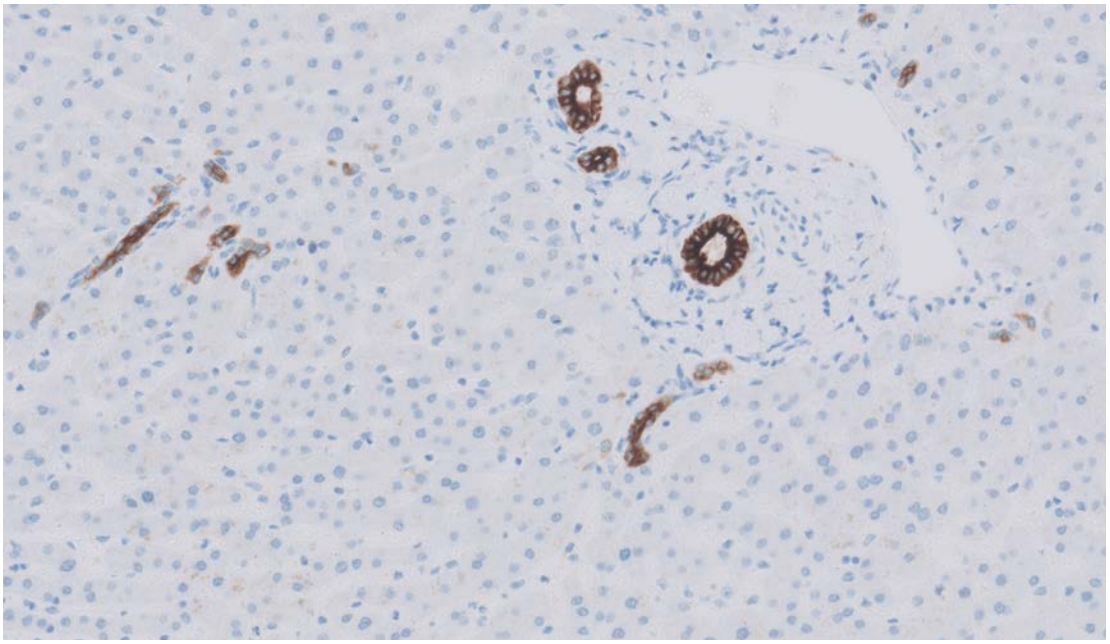
Monoclonal Mouse Anti-Human

Antibody: **Cytokeratin 19**

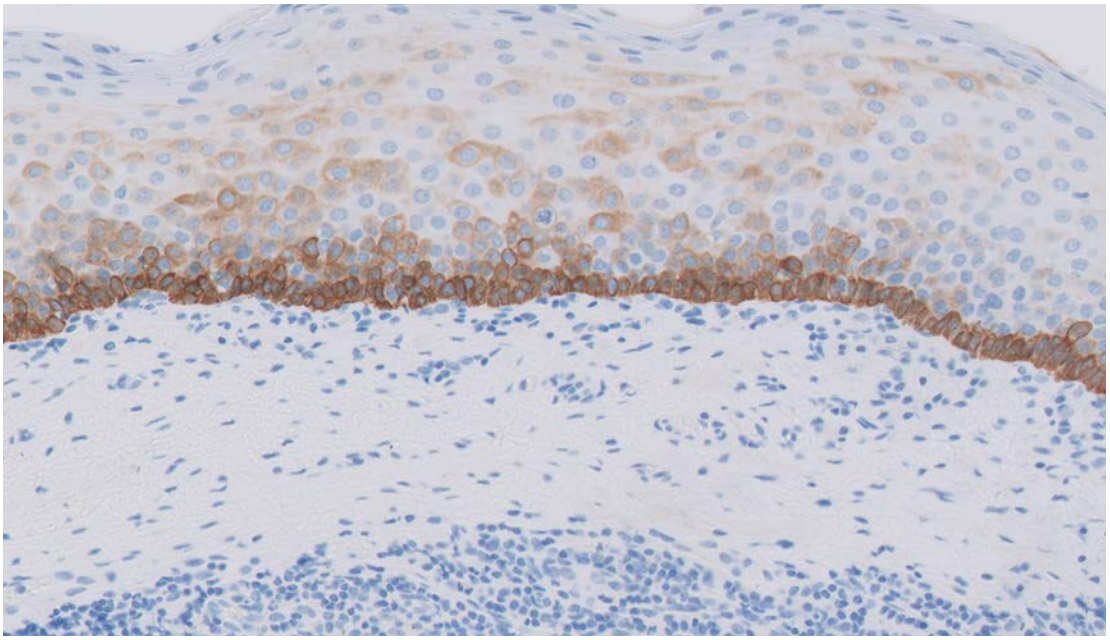
Clone: RCK108

Code: GA615 | IR615

Reaction Location	Cytoplasm	
Quality Control	**Liver**	**Tonsil**
High Expression	Epithelial cells of bile ducts show a moderate to strong staining reaction.	NA
Low Expression	NA	Squamous epithelial cells focally show a weak to moderate staining reaction that is strongest in the basal layer.
Non-expression	Hepatocytes	NA



Liver (10x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

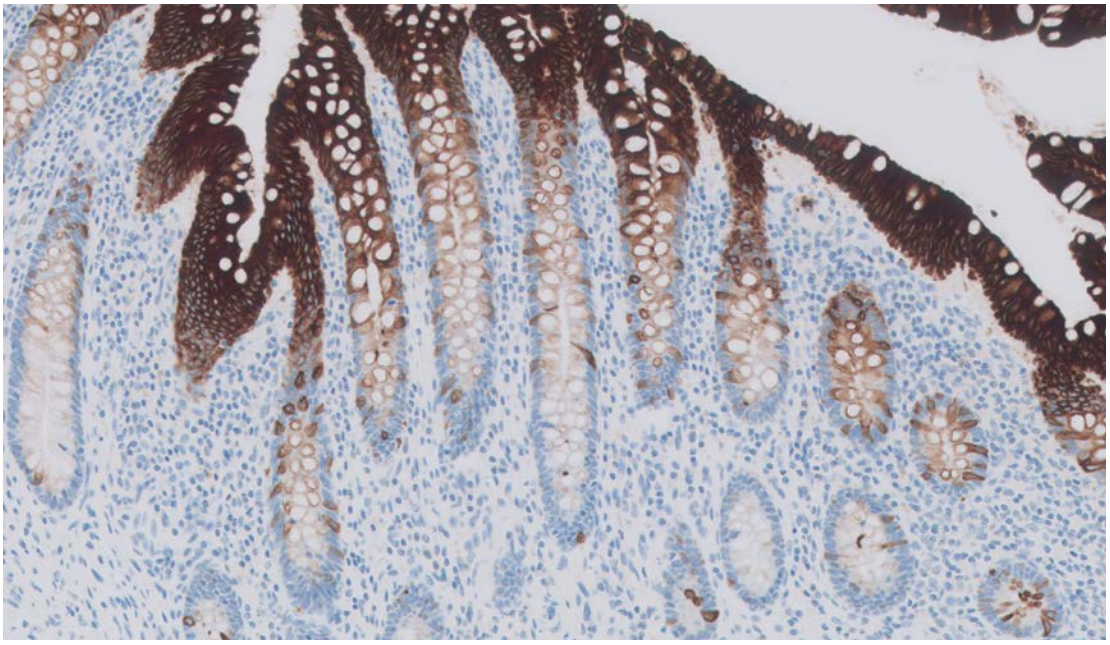
Antibody: **Cytokeratin 20**

Clone: Ks20.8

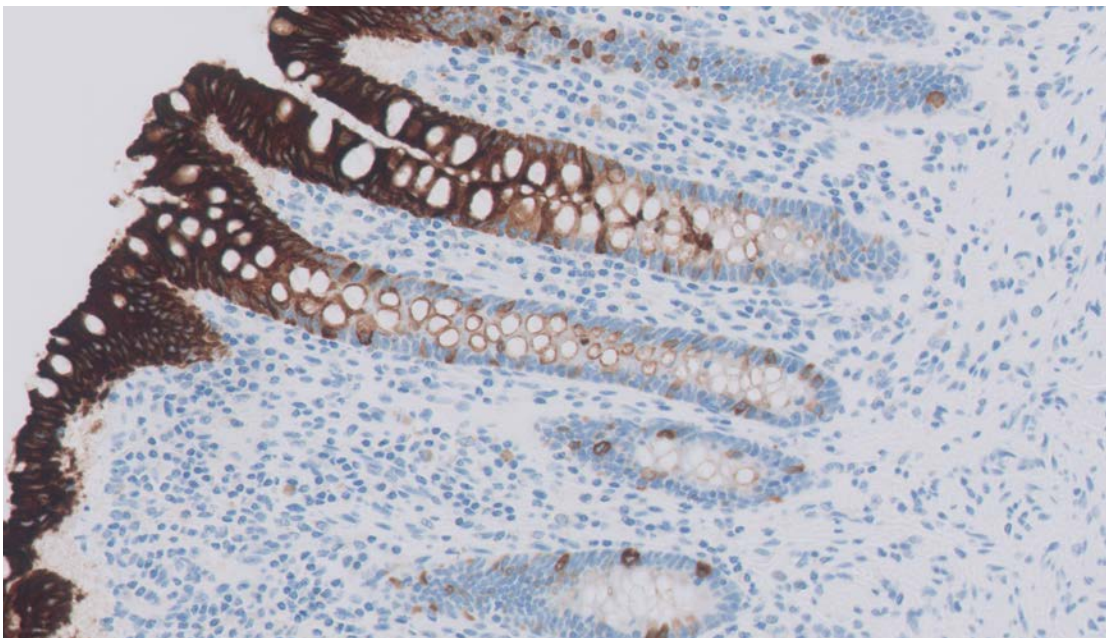
Code: GA777 | IR777

Reaction Location	Cytoplasm
Quality Control	**Colon/Appendix**
High Expression	In columnar epithelium, the luminal cells show a moderate to strong staining reaction.
Low Expression	Basal to intermediate cells show a weak to moderate staining reaction.
Non-expression	NA

Note: Endocrine cells in basal crypts should show a moderate to strong staining reaction.



Appendix (10x)



Appendix (20x)

Monoclonal Mouse Anti-Human

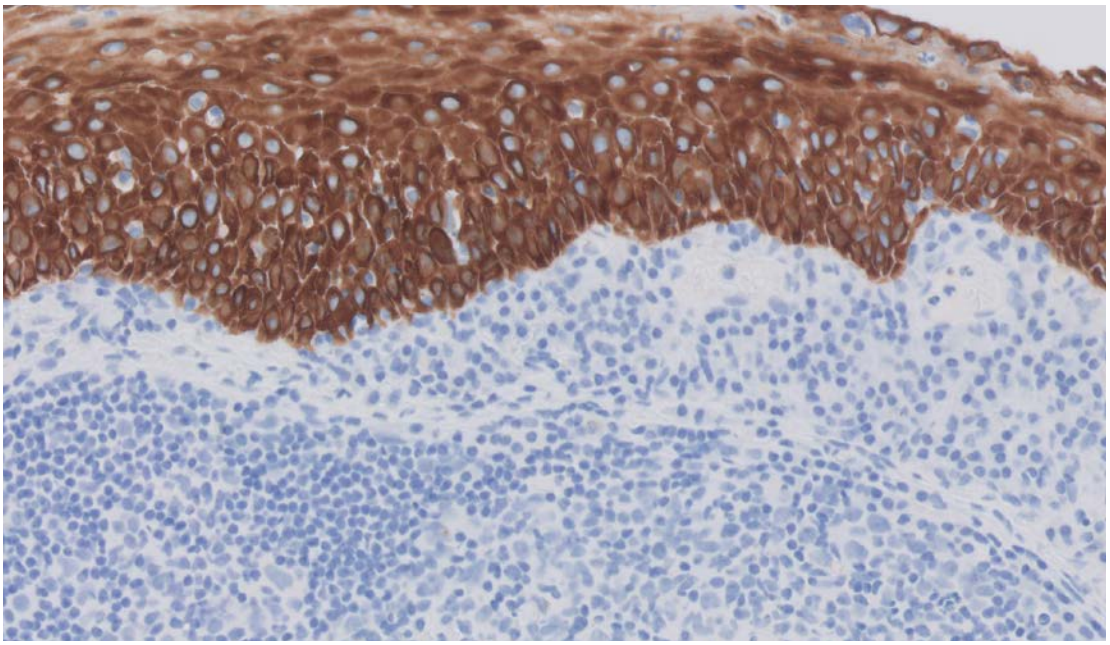
Antibody: **Cytokeratin, High Molecular Weight**

Clone: 34βE12

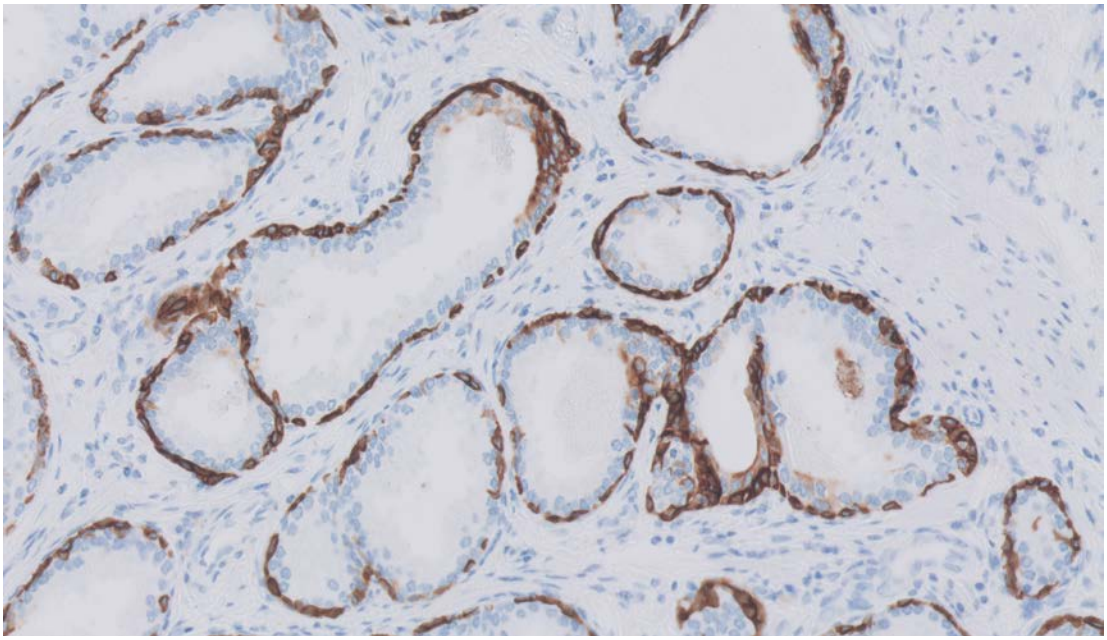
Code: GA051 | IR051

Reaction Location	Cytoplasm	
Quality Control	**Tonsil**	**Prostate**
High Expression	Squamous epithelial cells show a moderate to strong staining reaction.	Basal cells show a strong cytoplasmic staining reaction with no or only focal reaction in the secretory cells.
Low Expression	NA	NA
Non-expression	NA	NA

Note: The staining reaction is seen in all cell layers in the epithelial surface.



Tonsil (20x)



Prostate (20x)

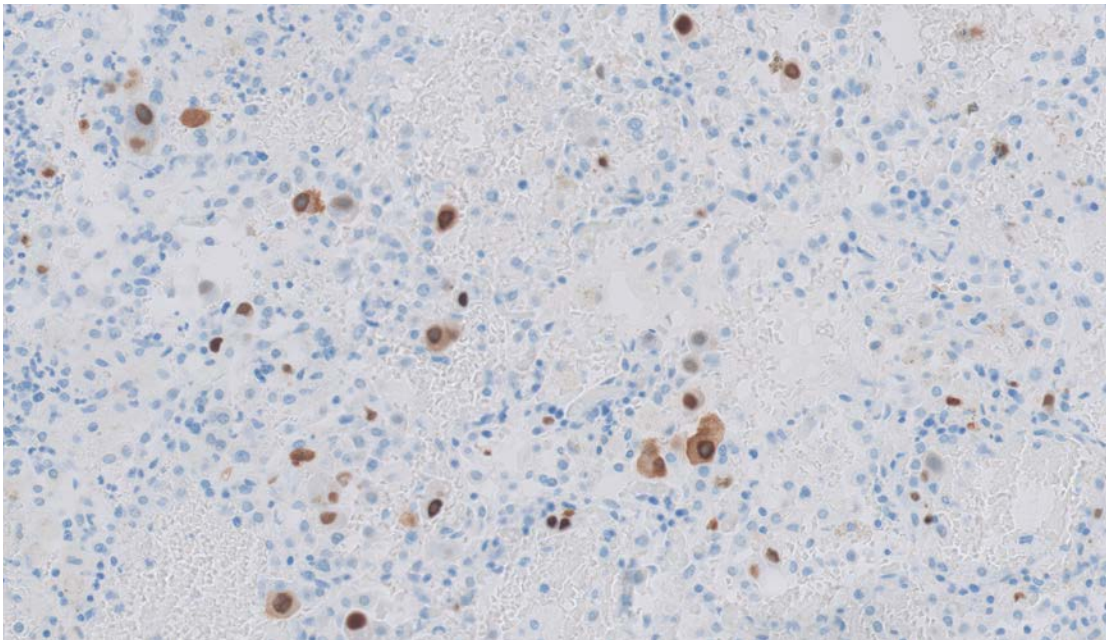
Antibody: Monoclonal Mouse Anti-**Cytomegalovirus**

Clone: CCH2 + DDG9

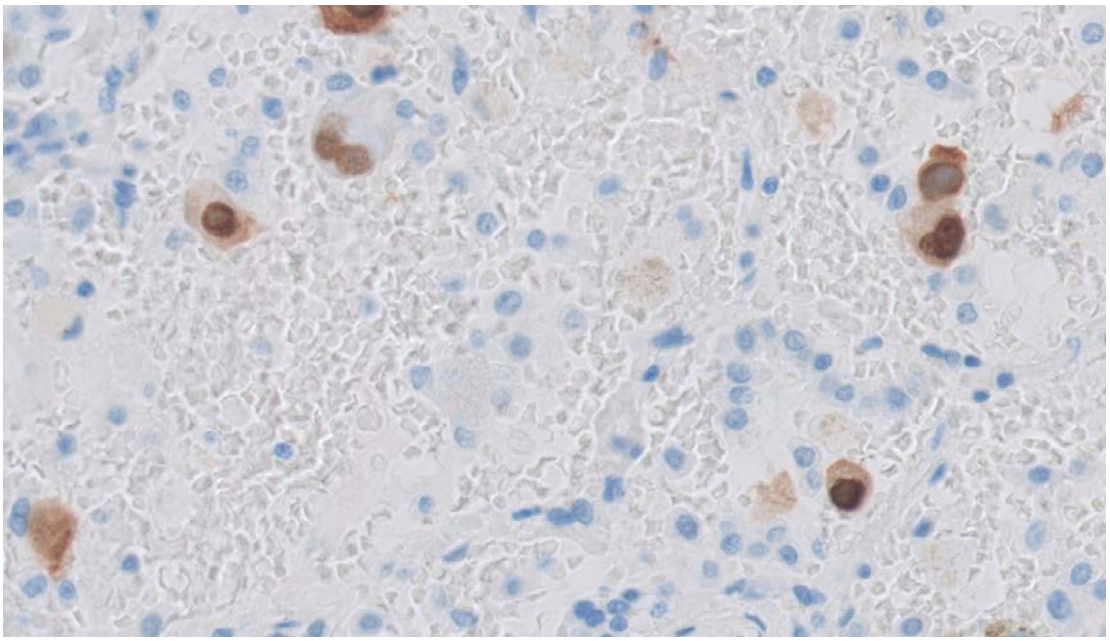
Code: GA752 | IR752 *Not available in the US*

Reaction Location	Nucleus and cytoplasm
Quality Control	**Cytomegalovirus-infected tissue**
High Expression	Cells infected with cytomegalovirus show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	NA

Note: No background staining should be seen.



Cytomegalovirus-infected tissue (20x)



Cytomegalovirus-infected tissue (40x)

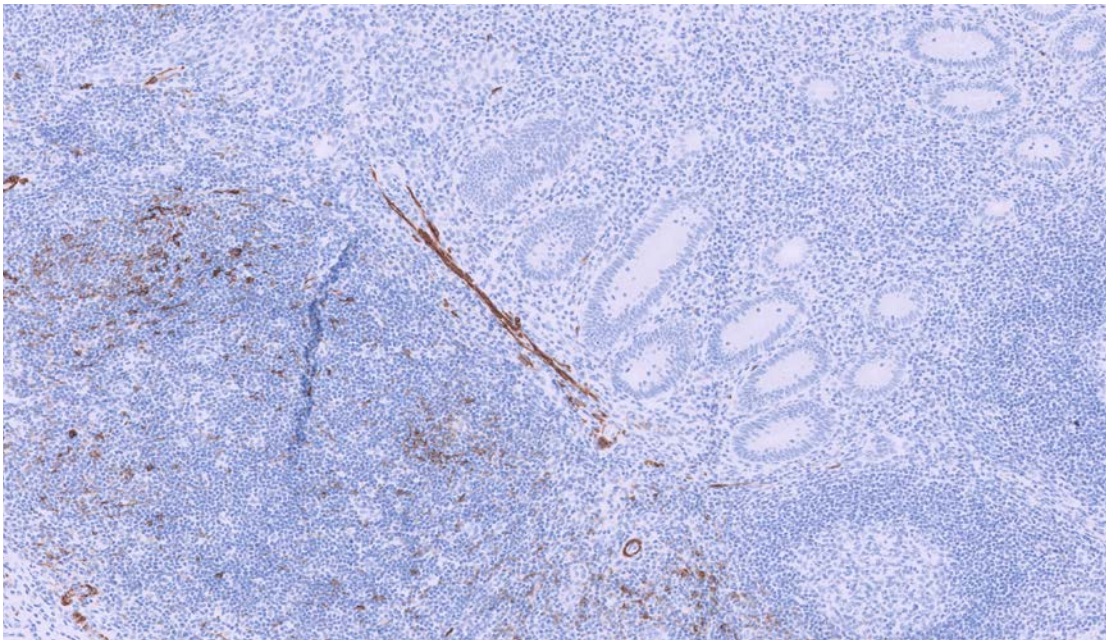
Monoclonal Mouse Anti-Human

Antibody: **Desmin**

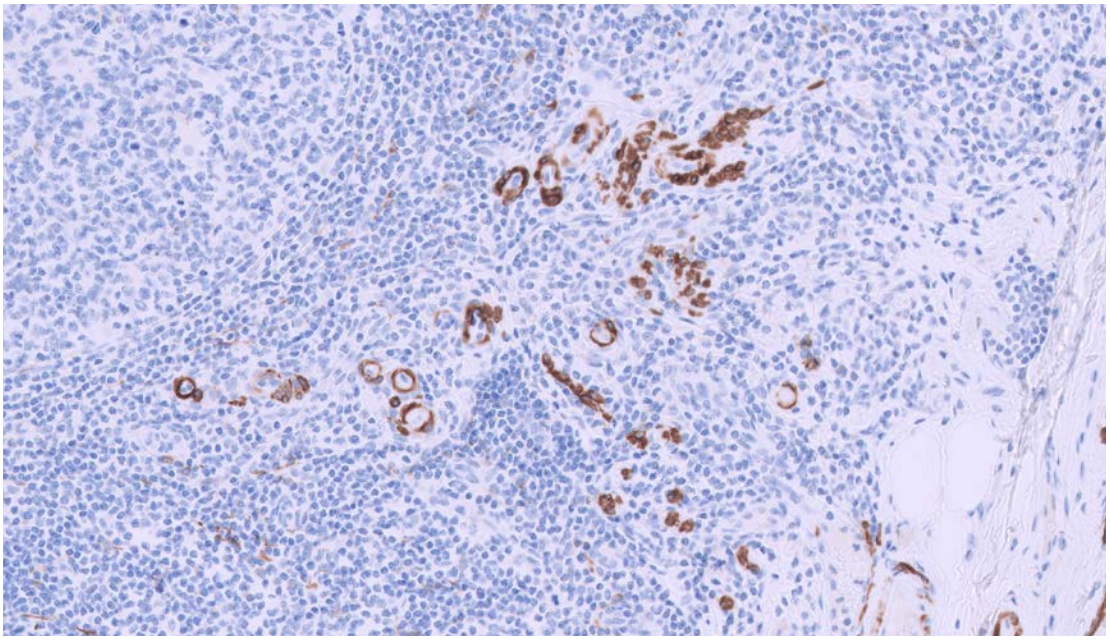
Clone: DAK-Desmin

Code: GA793

Reaction Location	Cytoplasm
Quality Control	**Colon/Appendix**
High Expression	Virtually all smooth muscle cells in lamina muscularis mucosae and muscularis propria show a moderate to strong, distinct cytoplasmic staining reaction.
Low Expression	Most smooth muscle cells of vessels show at least weak to moderate cytoplasmic staining reaction.
Non-expression	Epithelial cells.



Appendix (5x)



Appendix (10x)

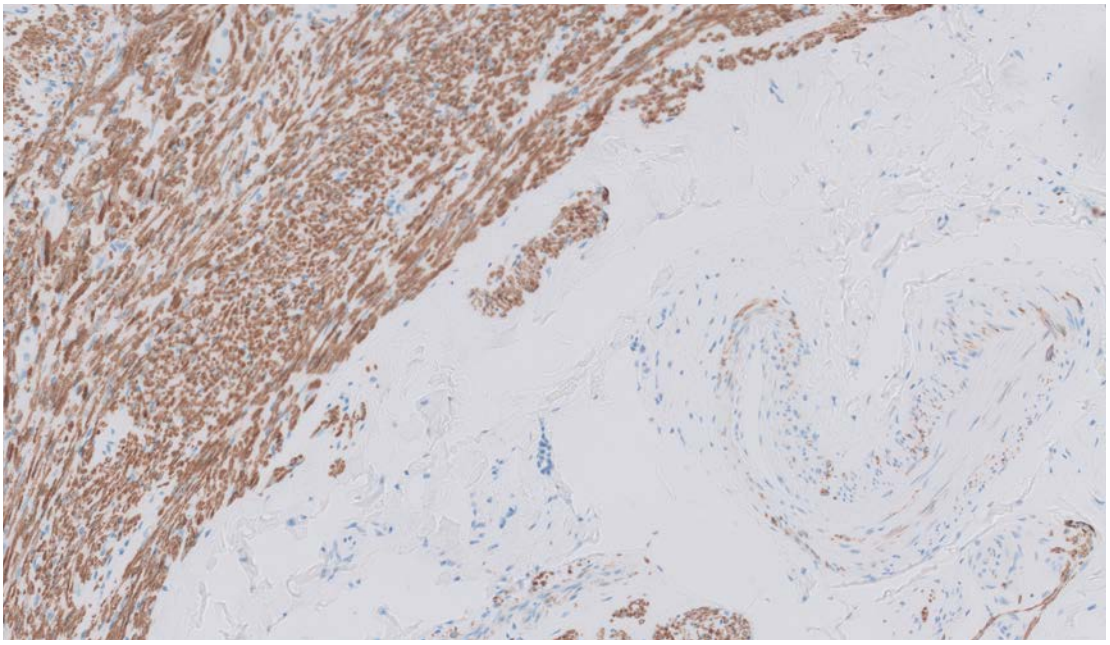
Monoclonal Mouse Anti-Human

Antibody: **Desmin**

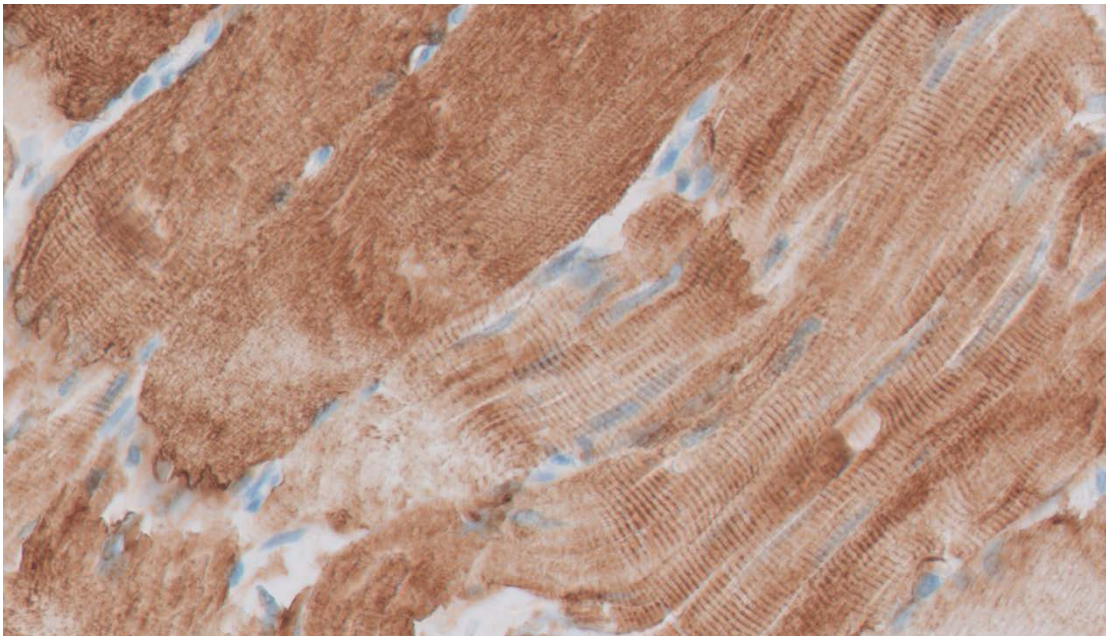
Clone: D33

Code: IR606

Reaction Location	Cytoplasm	
Quality Control	**Colon/Appendix**	**Striated muscle**
High Expression	Smooth muscle cells in the tunica muscularis show a moderate to strong staining reaction.	Muscle cells in the Z-bands show strong staining reaction.
Low Expression	Smooth muscle cells in the small vessels in the lamina propria show a weak to moderate staining reaction.	NA
Non-expression	Columnar epithelial cells	NA



Appendix (10x)



Striated muscle (40x)

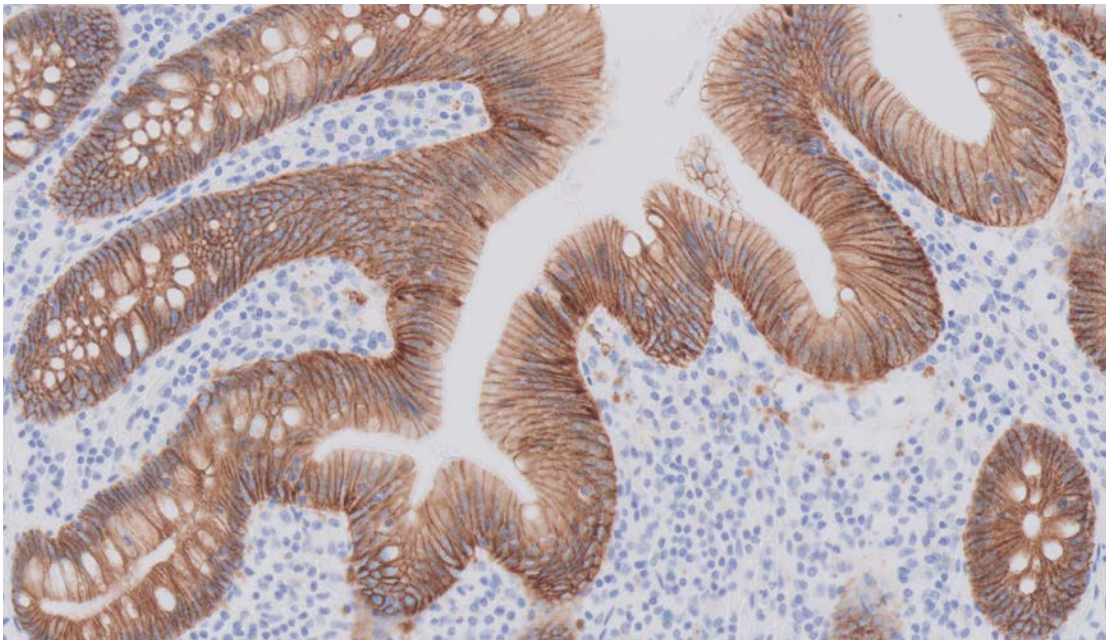
Monoclonal Mouse Anti-Human

Antibody: **E-Cadherin**

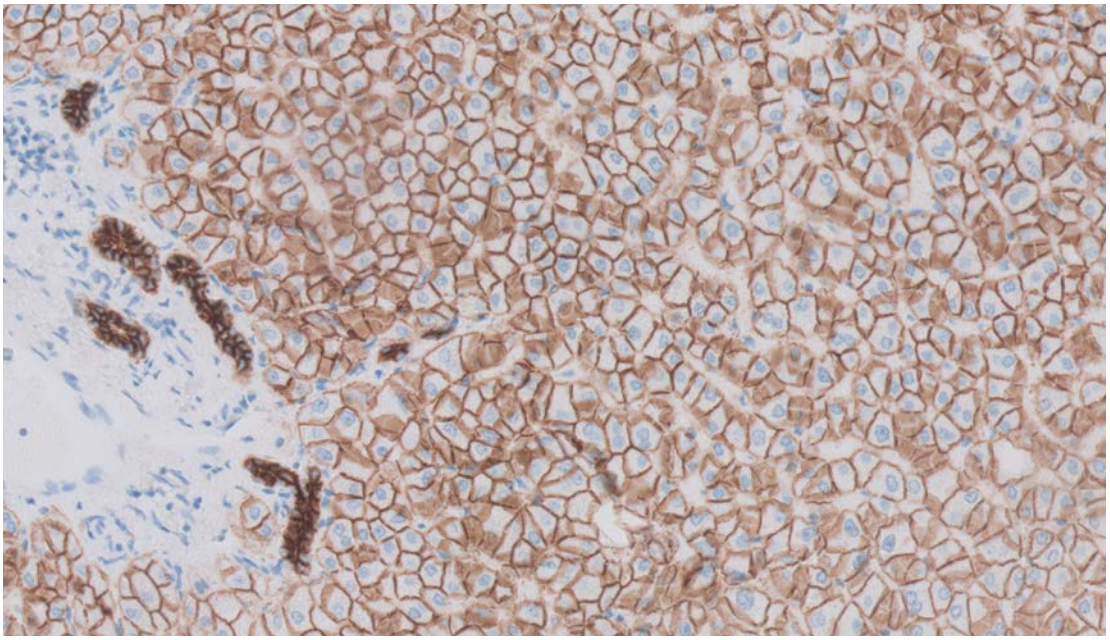
Clone: NCH-38

Code: GA059 | IR059

Reaction Location	Membrane	
Quality Control	**Colon/Appendix**	**Liver**
High Expression	Columnar epithelial cells show a moderate to strong staining reaction.	Bile ductal cells show a moderate to strong reaction.
Low Expression	NA	Hepatocytes show at least weak to moderate staining reaction.
Non-expression	NA	NA



Appendix (20x)



Liver (20x)

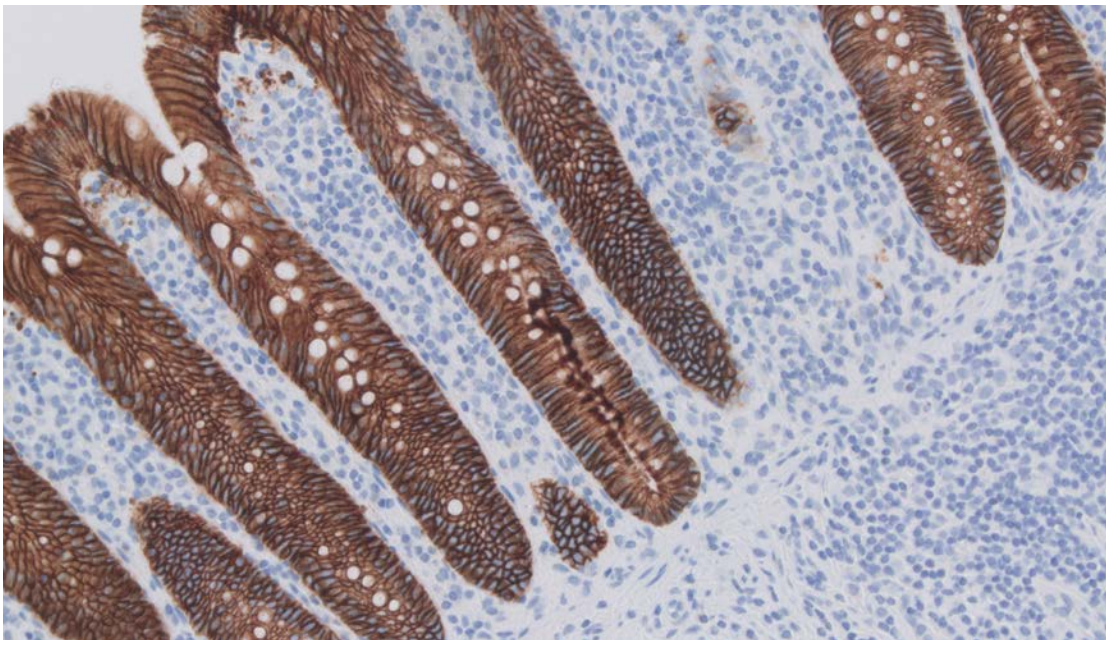
Monoclonal Mouse Anti-Human

Antibody: **Epithelial Antigen**

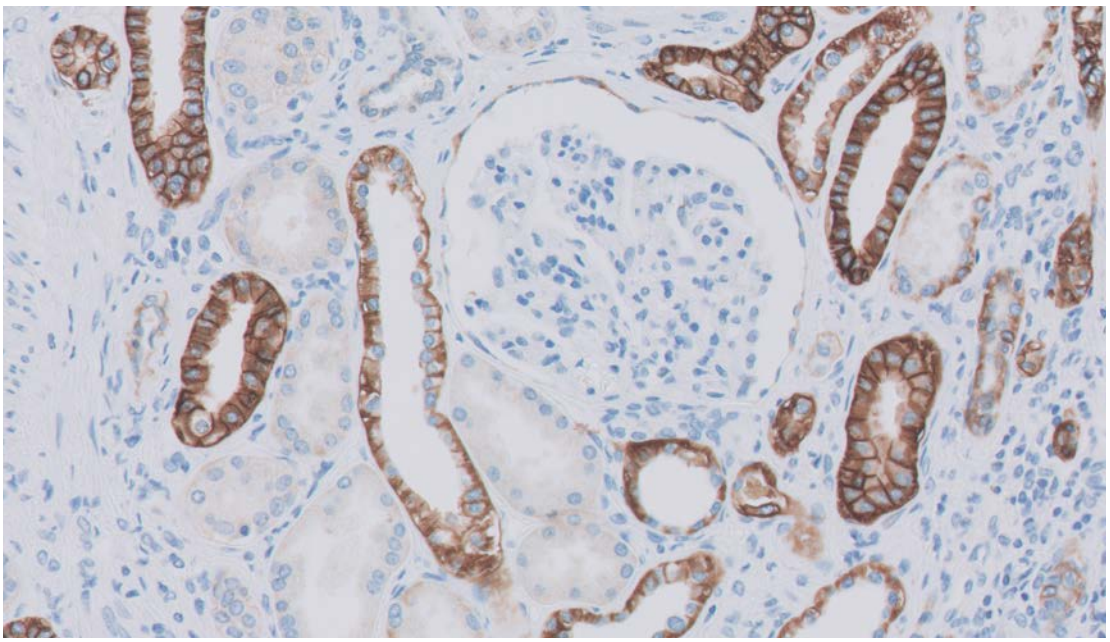
Clone: Ber-EP4

Code: GA637 | IR637

Reaction Location	Membrane and cytoplasm	
Quality Control	**Colon/Appendix**	**Kidney**
High Expression	Columnar epithelial cells show a moderate to strong staining reaction.	Epithelial cells in the collecting ducts and distal tubules show a moderate to strong staining reaction.
Low Expression	NA	Epithelial cells lining the bowman capsule show a weak to moderate staining reaction.
Non-expression	Lymphocytes, apart from cytoplasmic staining reaction in macrophages in lamina propria.	NA



Appendix (20x)



Kidney (20x)

Monoclonal Mouse Anti-Human

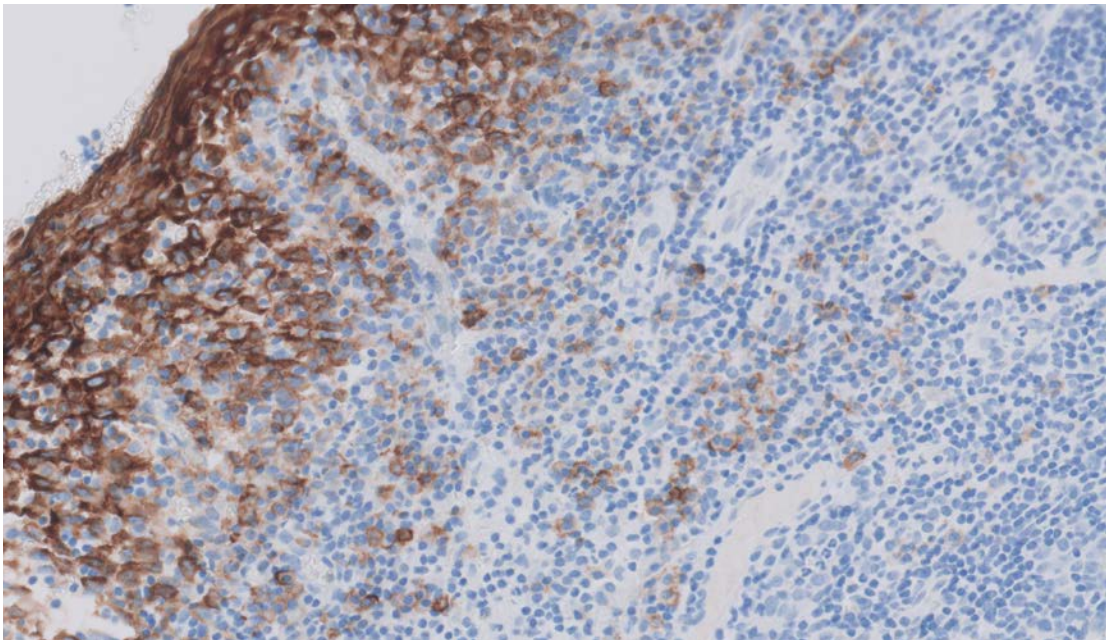
Antibody: **Epithelial Membrane Antigen**

Clone: E29

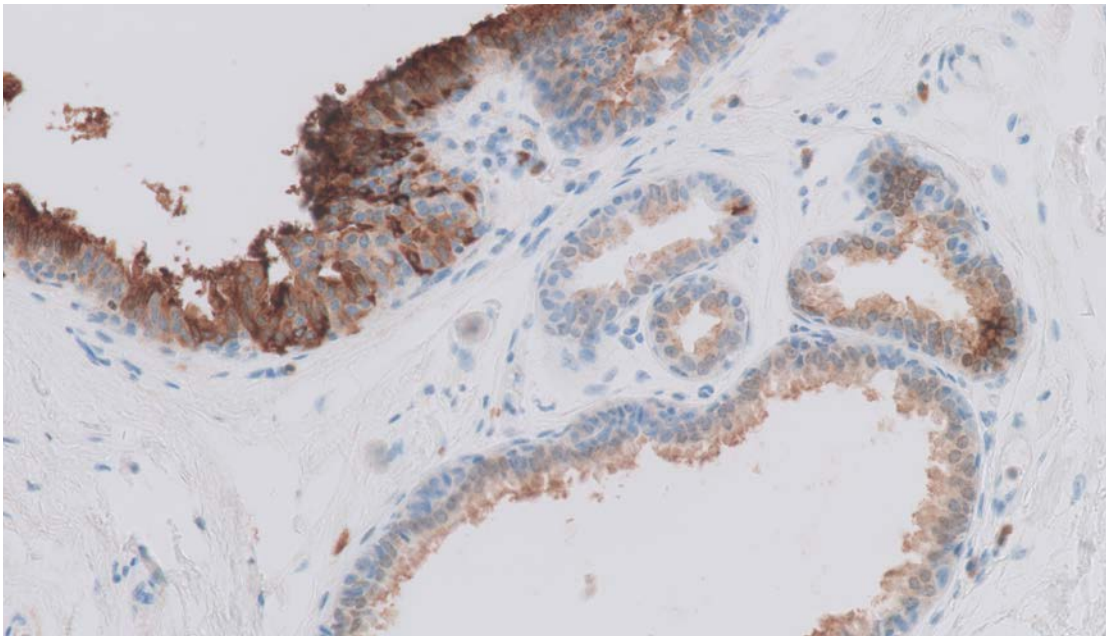
Code: GA629 | IR629

Reaction Location	Membrane and cytoplasm	
Quality Control	**Tonsil**	**Breast**
High Expression	Squamous epithelial cells show a moderate to strong cytoplasmic staining reaction.	Ductal epithelial cells show a moderate to strong membranous staining reaction.
Low Expression	Plasma cells show a weak to moderate staining reaction.	NA
Non-expression	NA	NA

Note: A granular cytoplasmic staining reaction can also be observed.



Tonsil (20x)



Breast (20x)

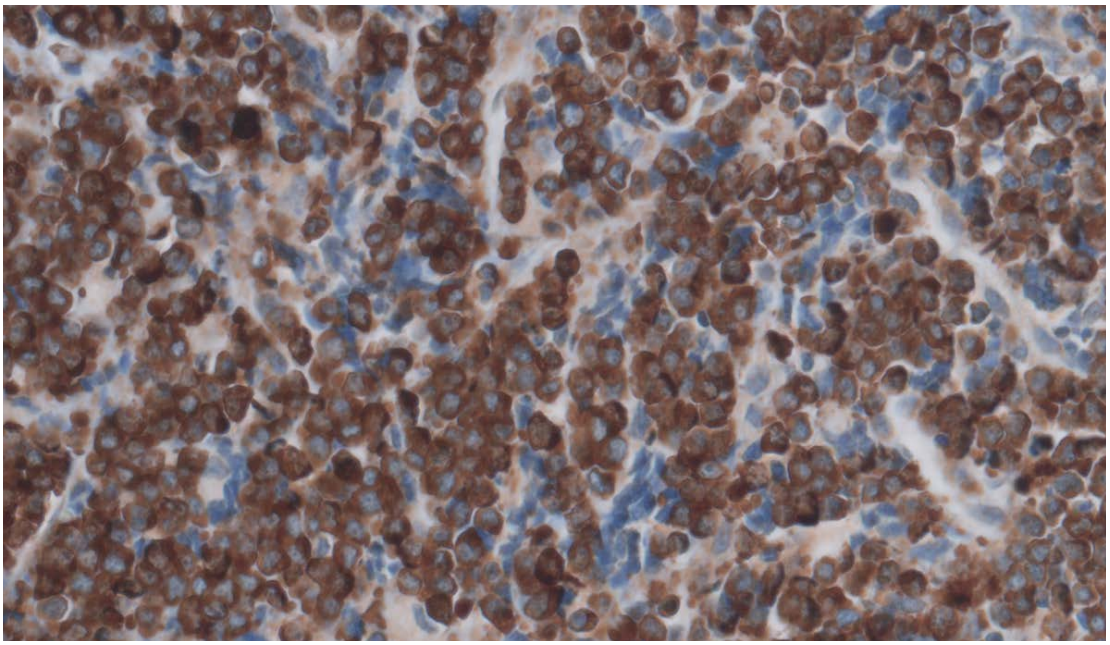
Antibody: Monoclonal Mouse Anti-**Epstein-Barr Virus, LMP**

Clone: CS.1-4

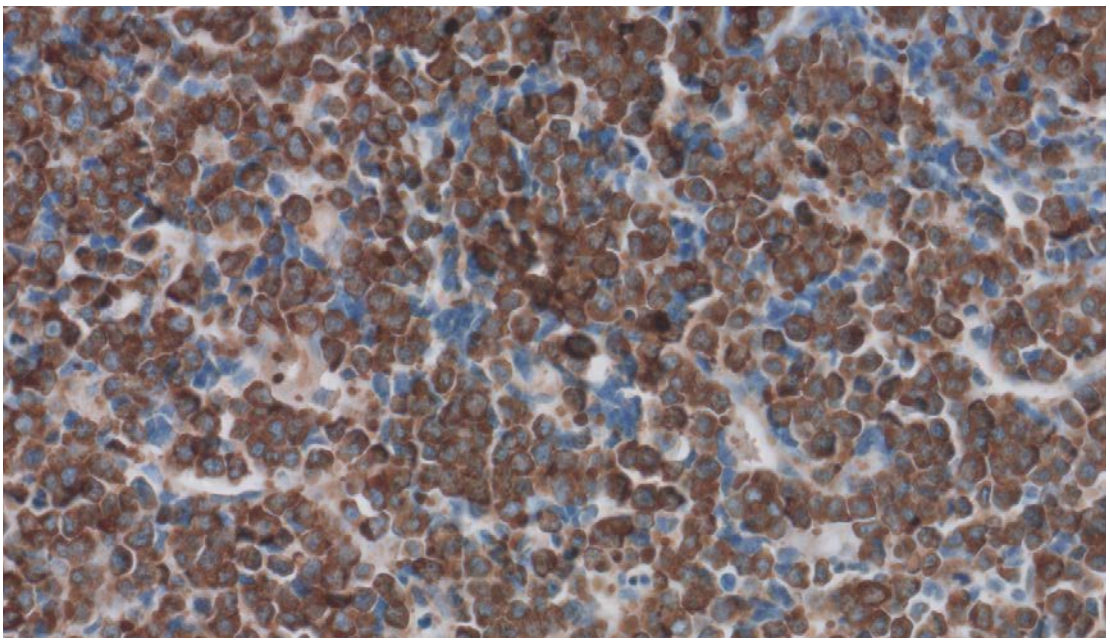
Code: IR753 *Not available in the US*

Reaction Location	Membrane and cytoplasm
Quality Control	**Burkitt lymphoma/leukemia (EBV+)**
High Expression	Neoplastic cells show a moderate to strong predominantly membranous, but also cytoplasmic staining reaction.
Low Expression	NA
Non-expression	NA

Note: Occasionally, the staining reaction shows a dot-like pattern.



Burkitt lymphoma (40x)



Burkitt lymphoma (40x)

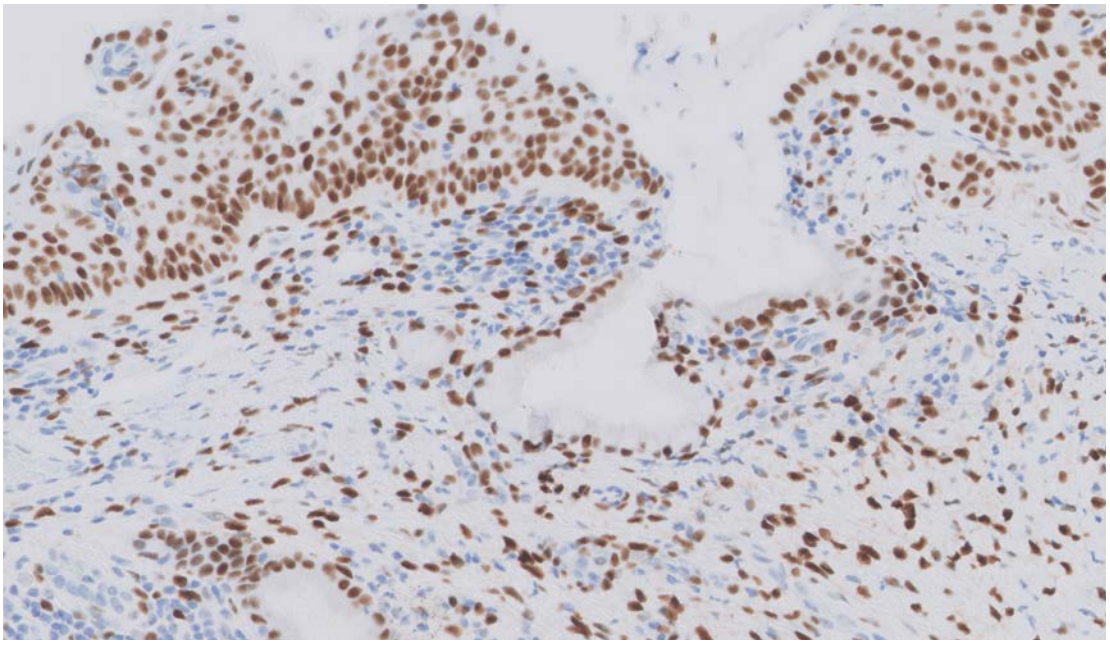
Monoclonal Rabbit Anti-Human

Antibody: **Estrogen Receptor α**

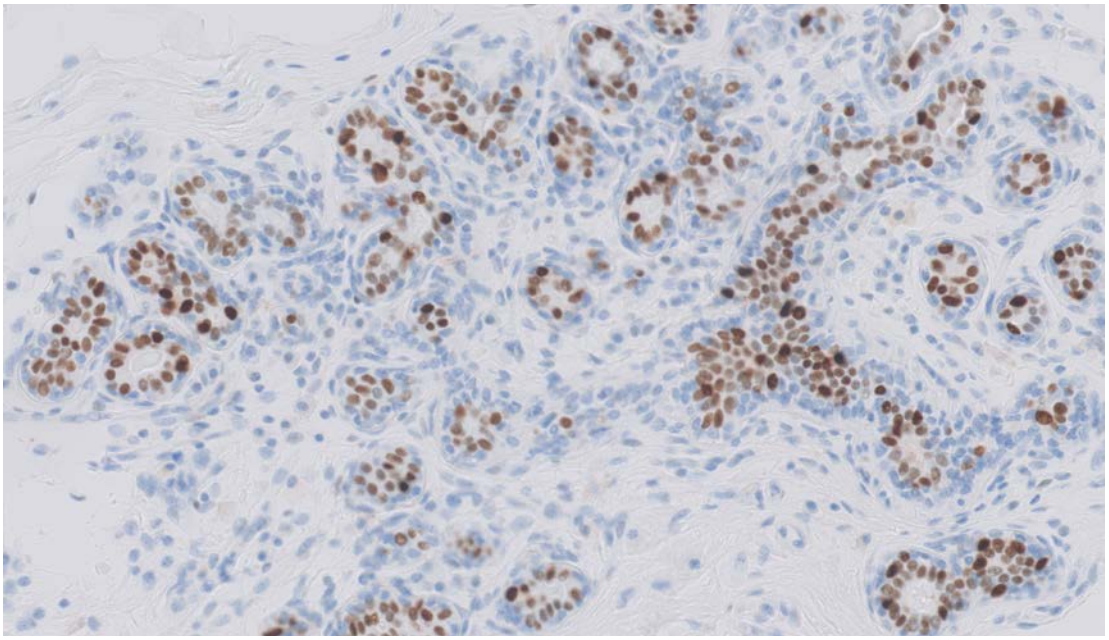
Clone: EP1

Code: GA084 | IR084

Reaction Location	Nucleus	
Quality Control	**Cervix**	**Breast hyperplasia**
High Expression	Columnar epithelial cells and stromal cells show a moderate to strong staining reaction.	The neoplastic cells show a weak to strong staining reaction.
Low Expression	Intermediate and superficial squamous epithelial cells show a weak to moderate staining reaction.	The neoplastic cells show a weak to strong staining reaction.
Non-expression	Endothelial cells and lymphocytes	NA



Cervix (20x)



Breast hyperplasia (20x)

Monoclonal Rabbit Anti-Human

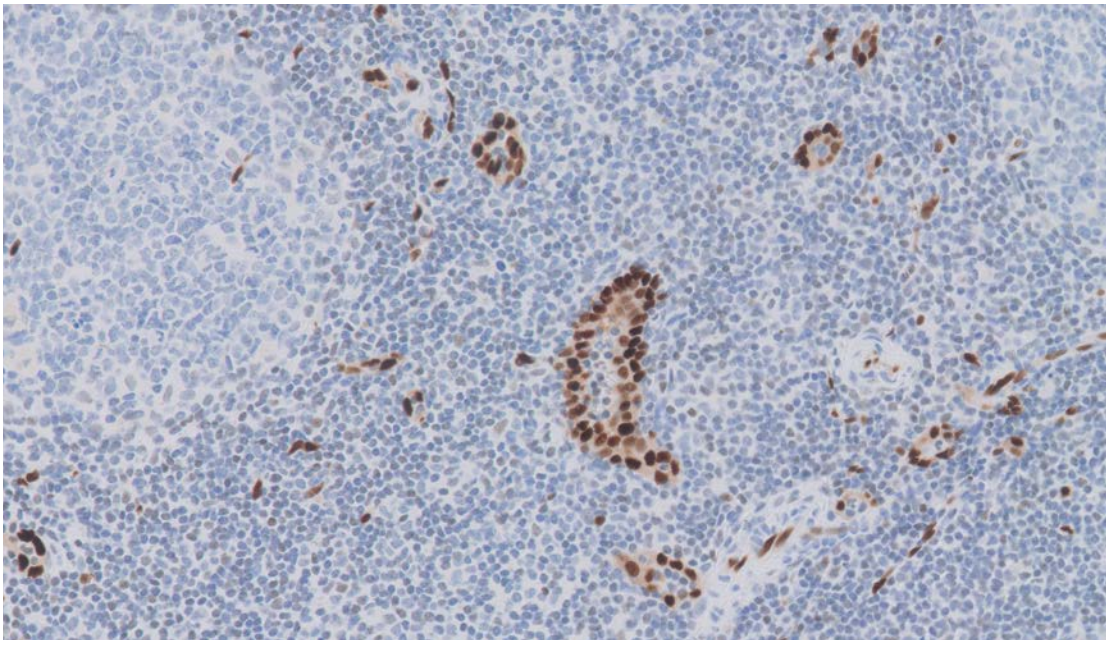
Antibody: **Ets-Related Gene (ERG)**

Clone: EP111

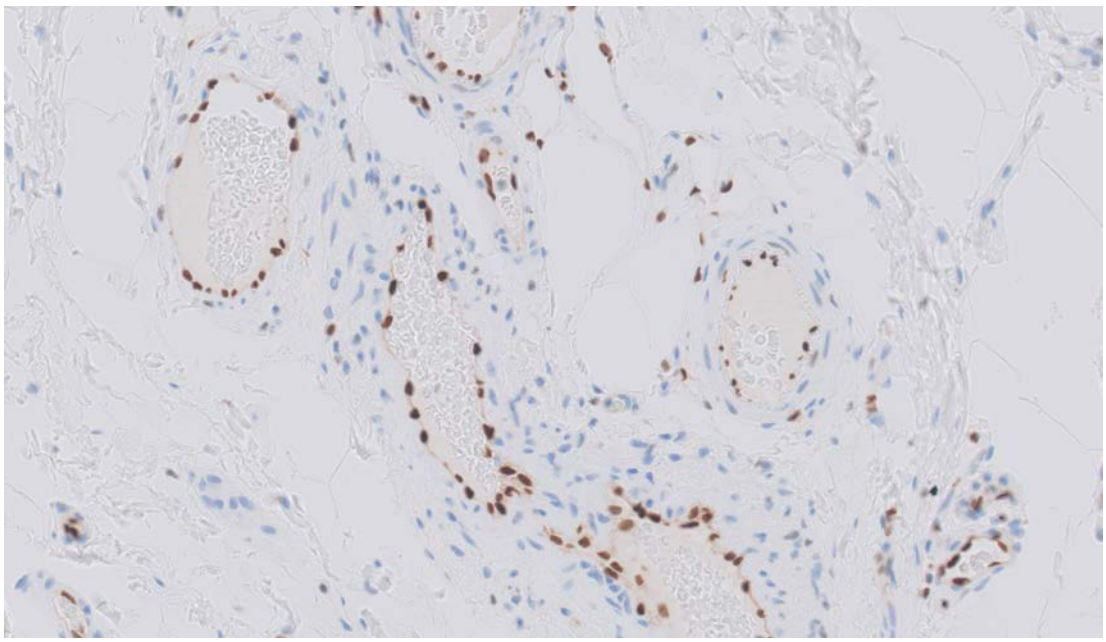
Code: GA659

Reaction Location	Nucleus	
Quality Control	**Tonsil**	**Colon/Appendix**
High Expression	Endothelial cells show a moderate to strong staining reaction.	Endothelial cells show a moderate to strong staining reaction.
Low Expression	NA	NA
Non-expression	NA	NA

Note: Peripheral lymphocytes may show a weak staining reaction.



Tonsil (20x)



Colon (20x)

Polyclonal Rabbit Anti-Human

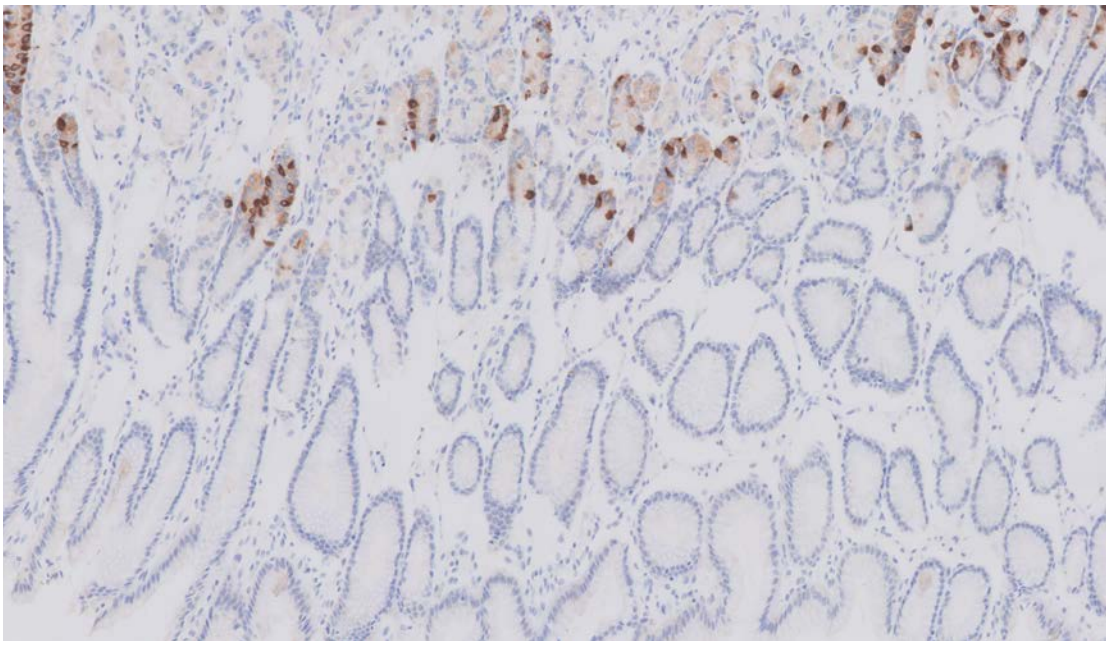
Antibody: **Gastrin**

Clone: Polyclonal

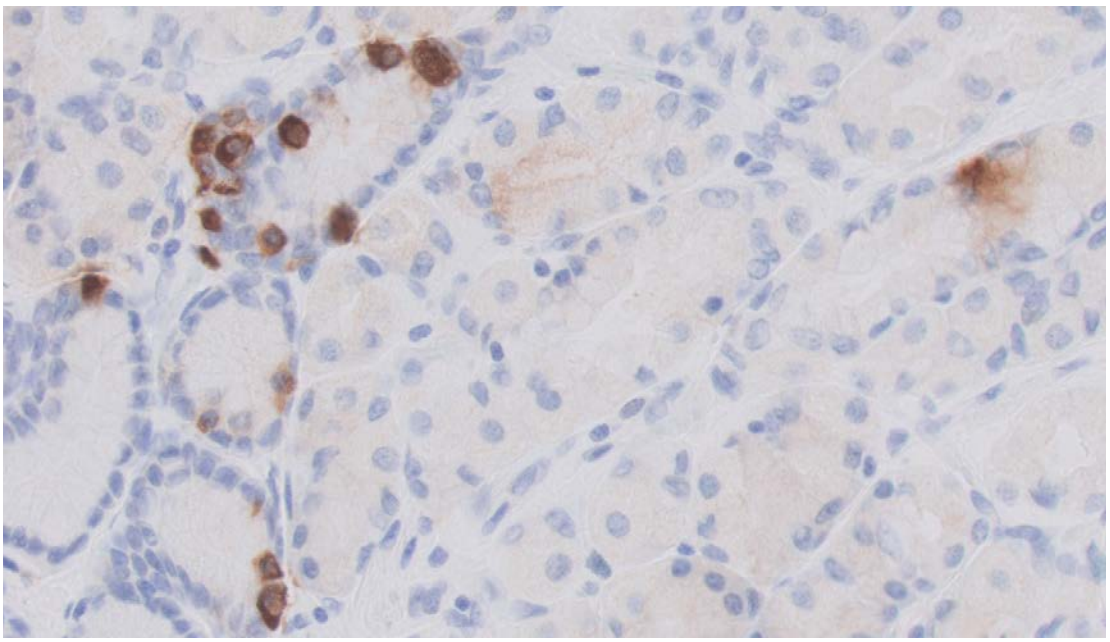
Code: GA519

Reaction Location	Cytoplasm
Quality Control	**Stomach**
High Expression	G cells in the pyloric antrum show moderate to strong staining reaction.
Low Expression	NA
Non-expression	Epithelial cells

Note: Occasionally, a slightly diffuse background reaction in the vicinity of G cells can be observed.



Stomach (10x)



Stomach (40x)

Monoclonal Mouse Anti-Human

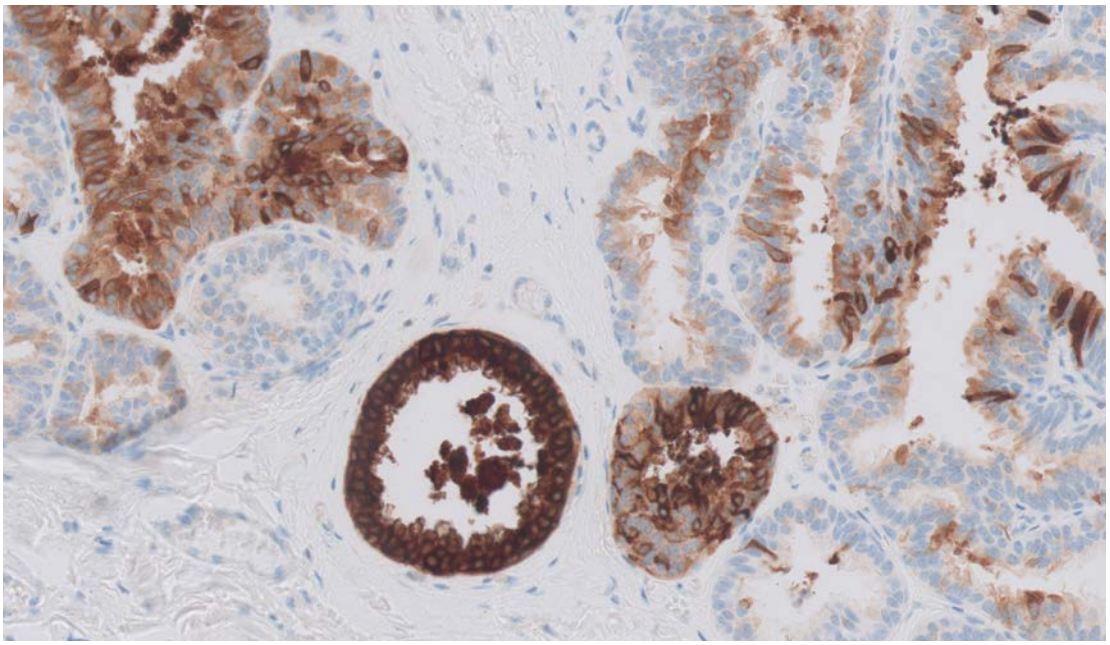
Antibody: **GCDFP-15**

Clone: 22A3

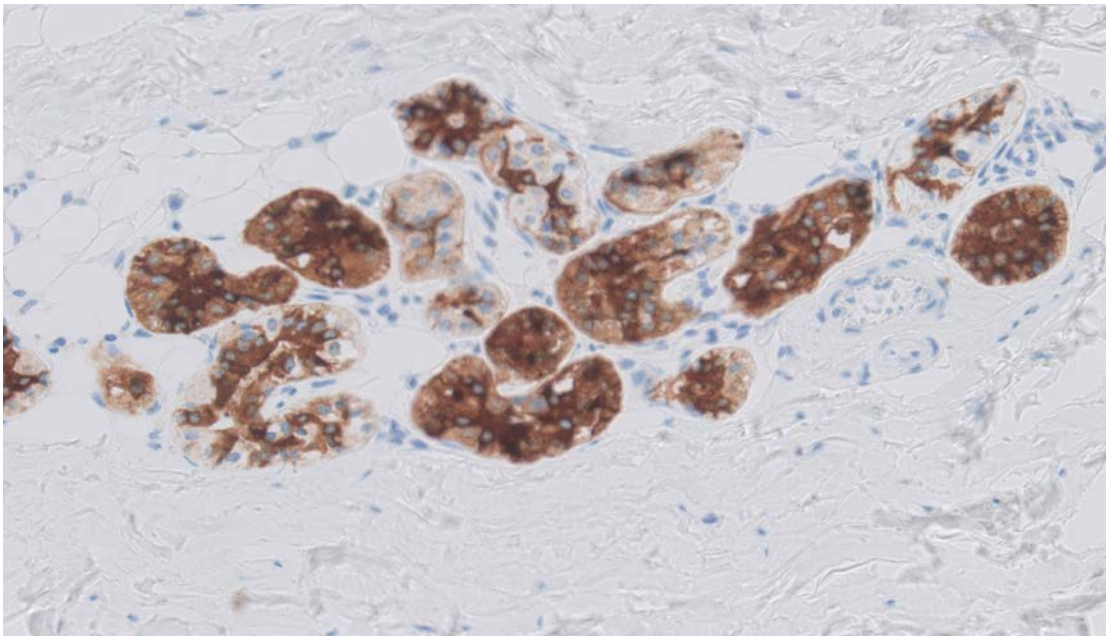
Code: GA077

Reaction Location	Cytoplasm	
Quality Control	**Breast hyperplasia**	**Skin**
High Expression	Glandular and ductal epithelial cells show at least a moderate to strong focal staining reaction.	Epithelial cells of the sweat glands show a moderate to strong, at least focally, staining reaction.
Low Expression	NA	NA
Non-expression	NA	Squamous epithelial cells

Note: A weak background staining can be expected.



Breast hyperplasia (20x)



Skin (20x)

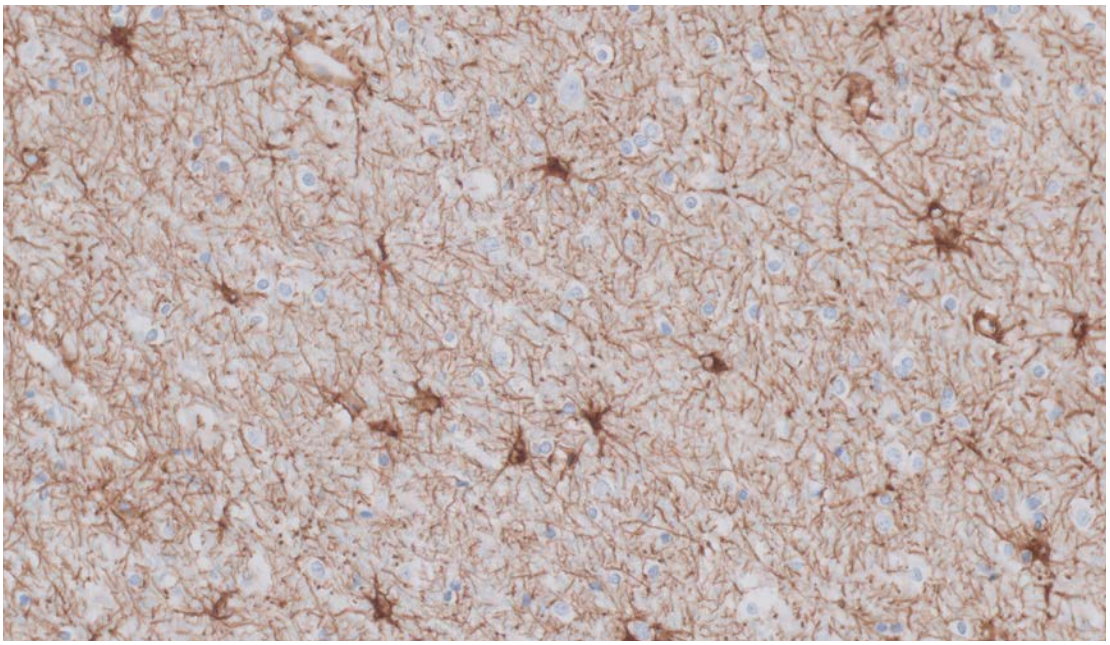
Polyclonal Rabbit Anti-Human

Antibody: **Glial Fibrillary Acidic Protein**

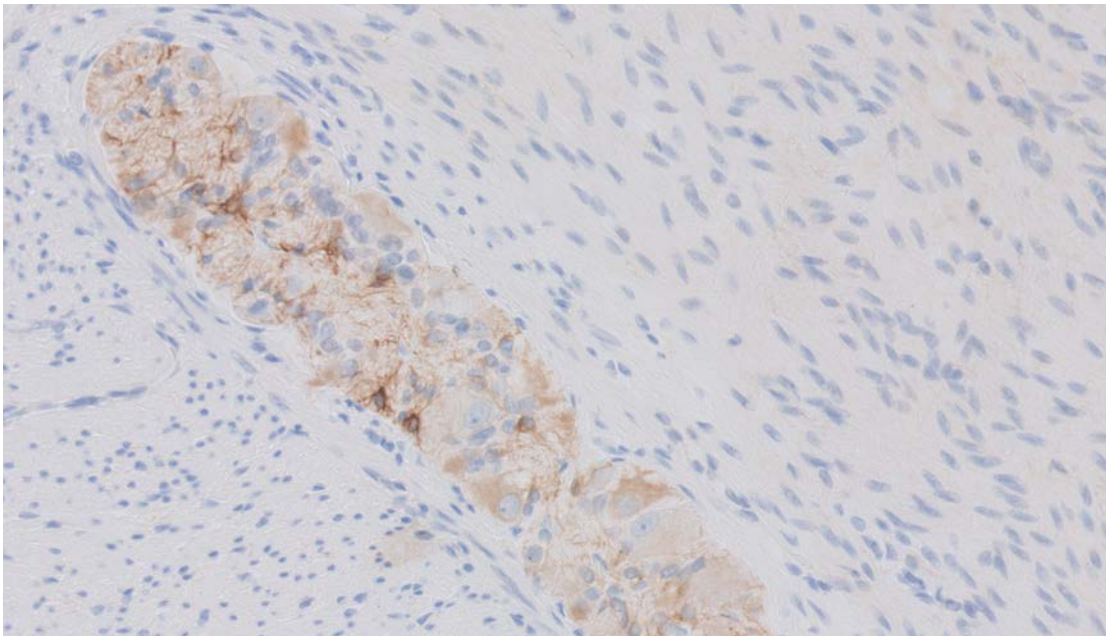
Clone: Polyclonal

Code: GA524 | IR524

Reaction Location	Cytoplasm	
Quality Control	**Brain**	**Colon**
High Expression	Astrocytes show a moderate to strong staining reaction.	NA
Low Expression	NA	Ganglion cells in the Auerbach's and Meissner's plexus show a weak to moderate staining reaction.
Non-expression	NA	NA



Brain (20x)



Colon (20x)

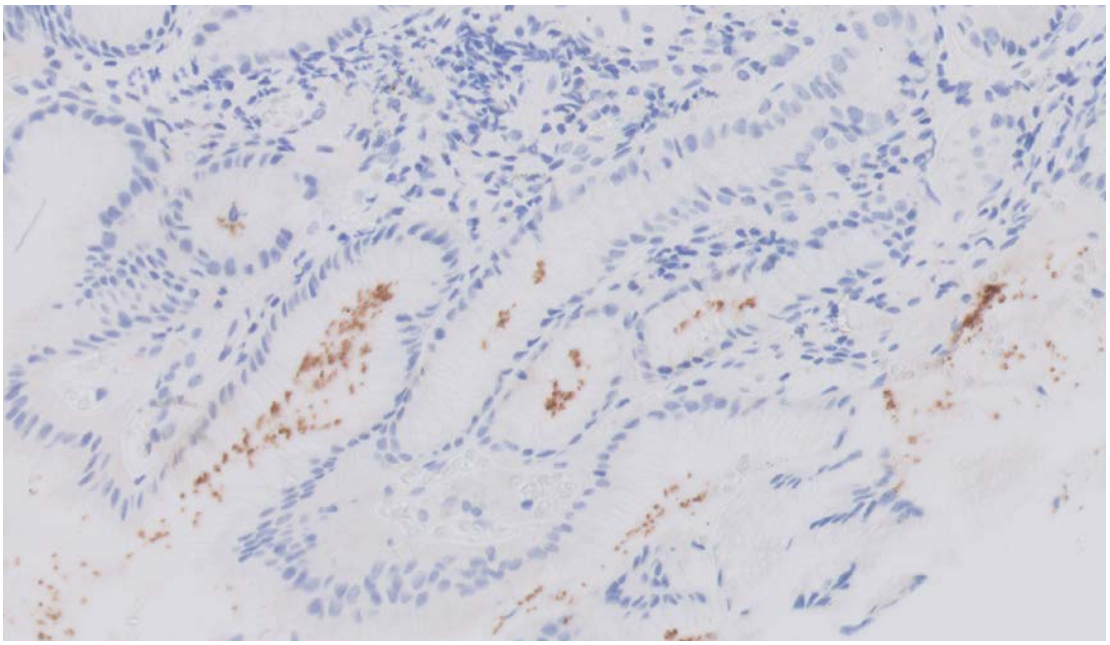
Antibody: Polyclonal Rabbit Anti-**Helicobacter Pylori**

Clone: Polyclonal

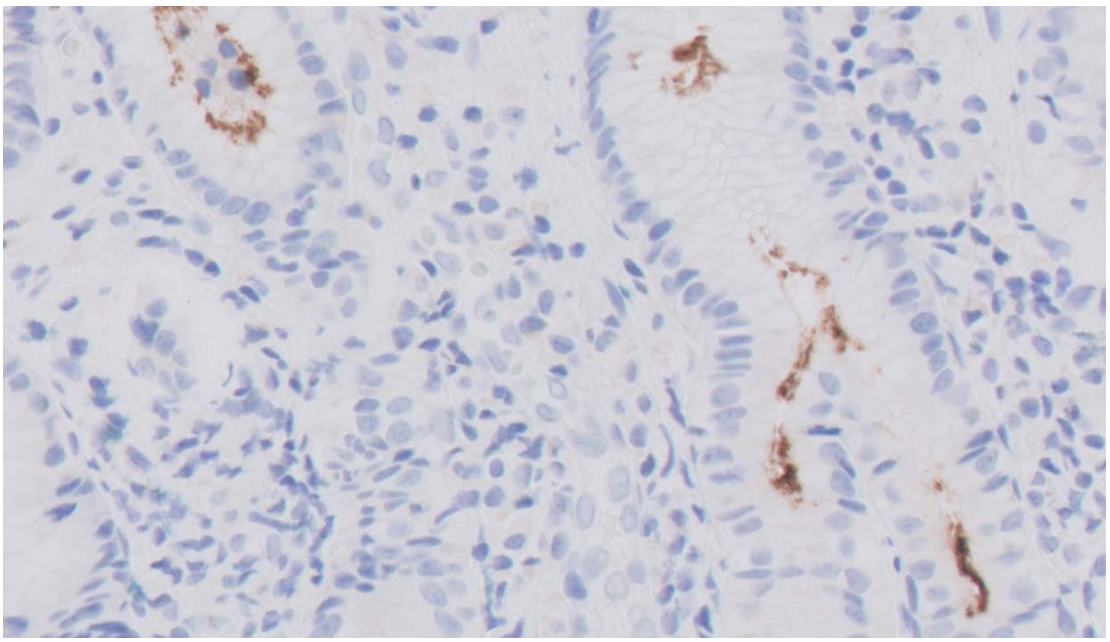
Code: GA523 | IR523 *Not available in the US*

Reaction Location	Bacteria
Quality Control	**Gastric mucosa**
High Expression	Helicobacter pylori bacteria lining gastric mucosa show a weak to strong staining reaction.
Low Expression	Helicobacter pylori bacteria lining gastric mucosa show a weak to strong staining reaction.
Non-expression	No staining reaction is seen in the epithelial cells. In the lamina propria, scattered macrophages can show a staining reaction.

Note: Precipitates may form in the tissue during the IHC staining procedure, which in some cases can resemble *Helicobacter Pylori* staining. It is therefore essential to always use normal tissue known to be negative for *Helicobacter Pylori* to identify unexpected precipitates.



Gastric (20x)



Gastric (40x)

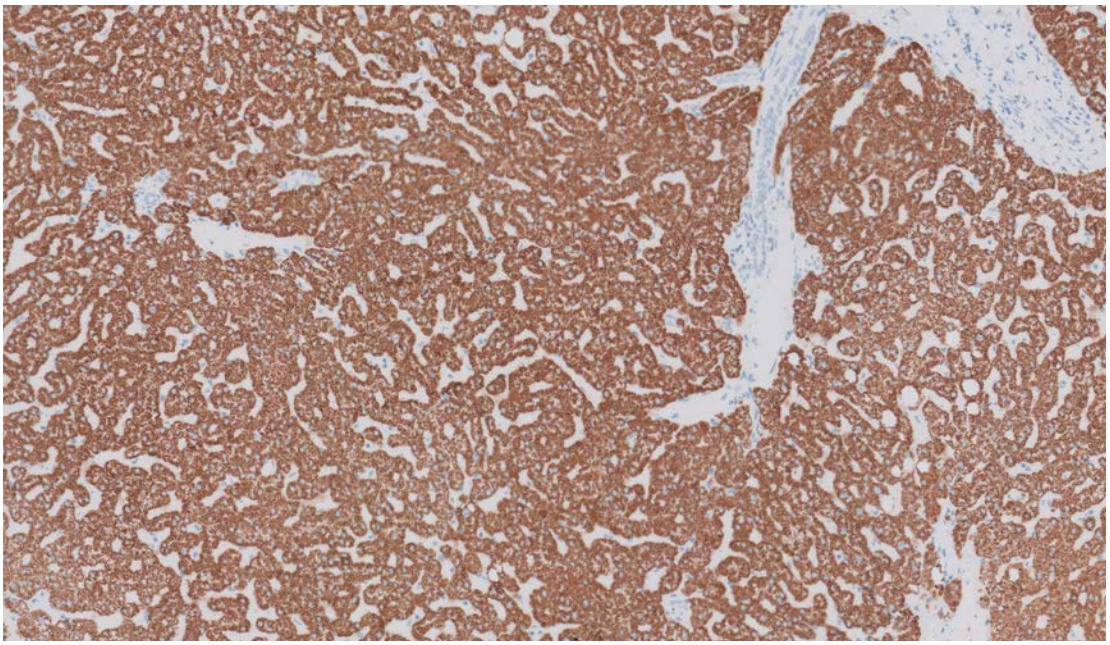
Monoclonal Mouse Anti-Human

Antibody: **Hepatocyte**

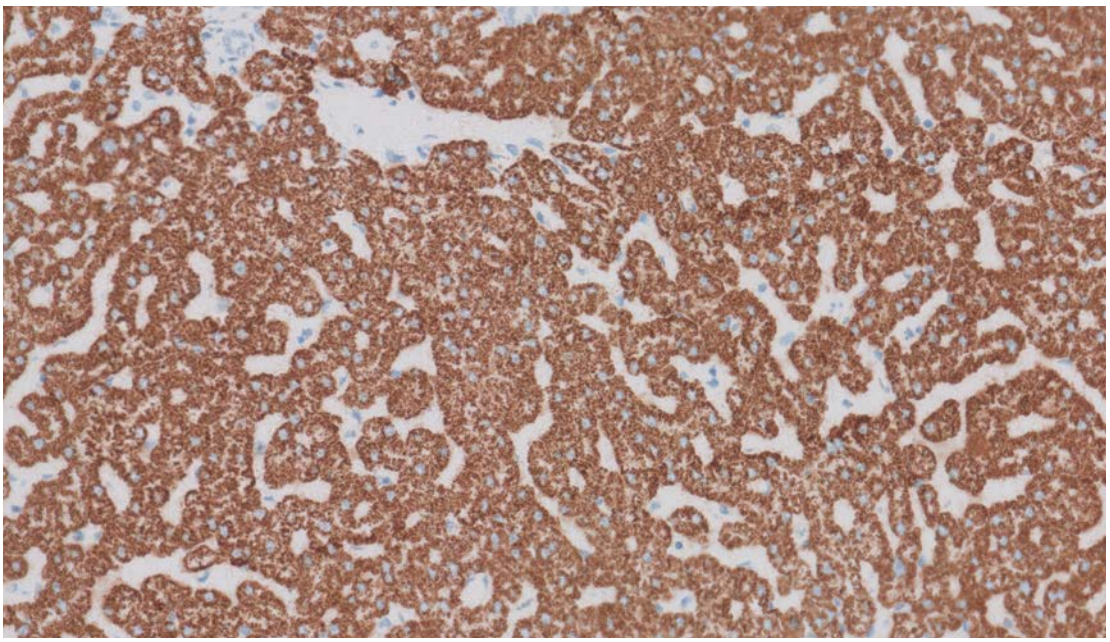
Clone: OCH1E5

Code: GA624

Reaction Location	Cytoplasm
Quality Control	**Liver**
High Expression	Hepatocytes show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	Bile duct epithelial cells



Liver (10x)



Liver (20x)

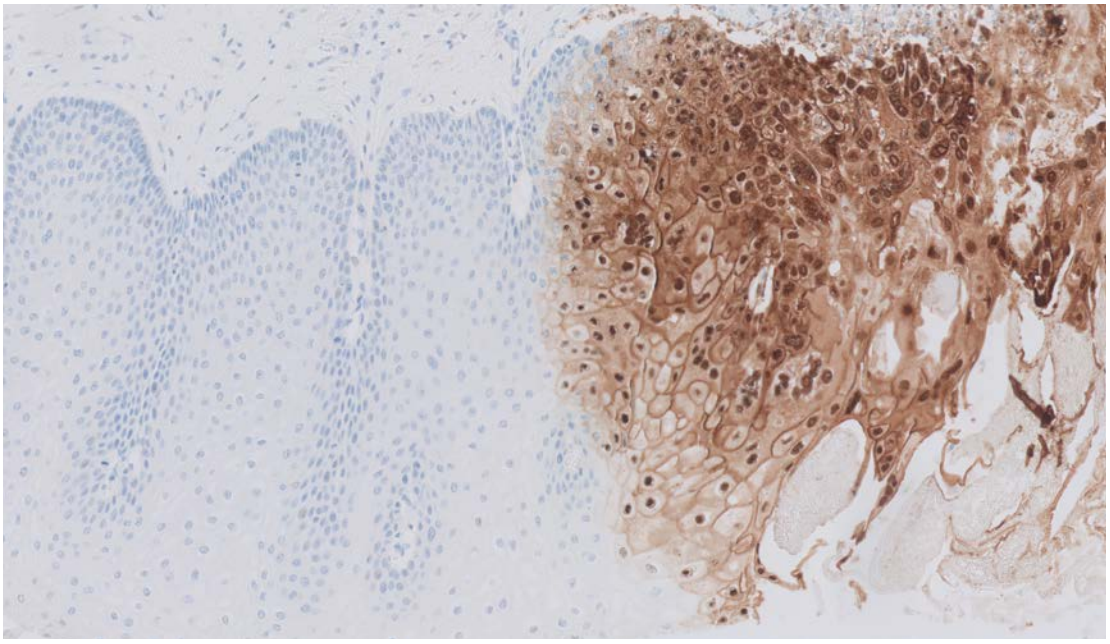
Antibody: Polyclonal Rabbit Anti-**Herpes Simplex Virus Type 1**

Clone: Polyclonal

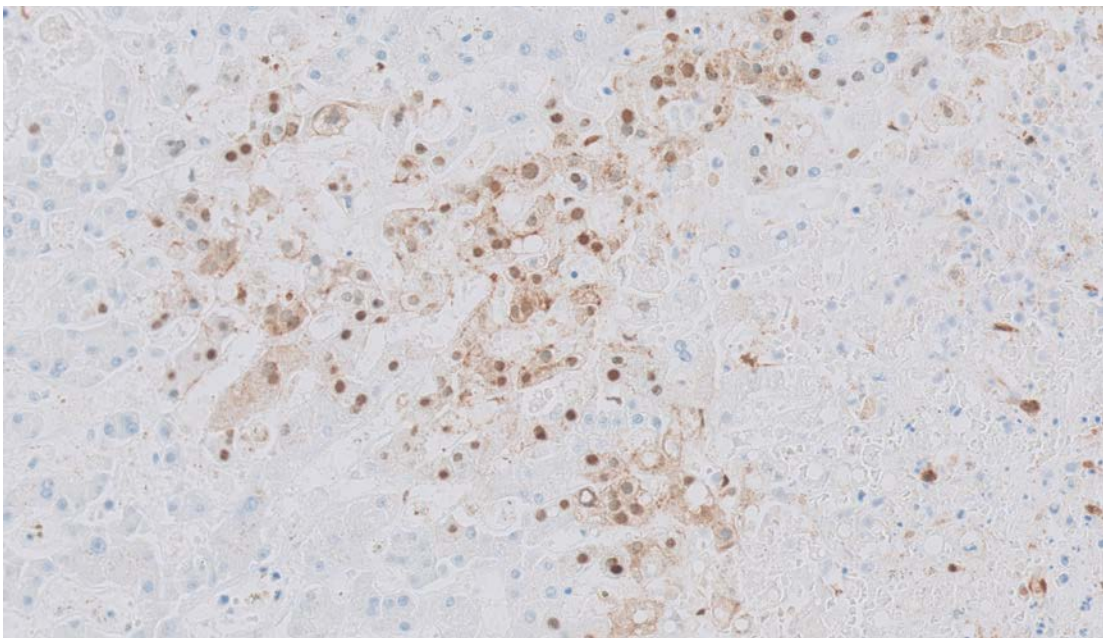
Code: GA521 *Not available in the US*

Reaction Location	Nucleus
Quality Control	**Lesion with HSV**
High Expression	T cells infected with herpes simplex virus (type 1 or type 2) show a moderate to strong staining reaction.
Low Expression	T cells infected with herpes simplex virus (type 1 or type 2) show a weak to moderate staining reaction.
Non-expression	NA

Note: The staining reaction intensity may vary from low to high depending of the level of protein expression.



Esophagus (10x)



Liver (20x)

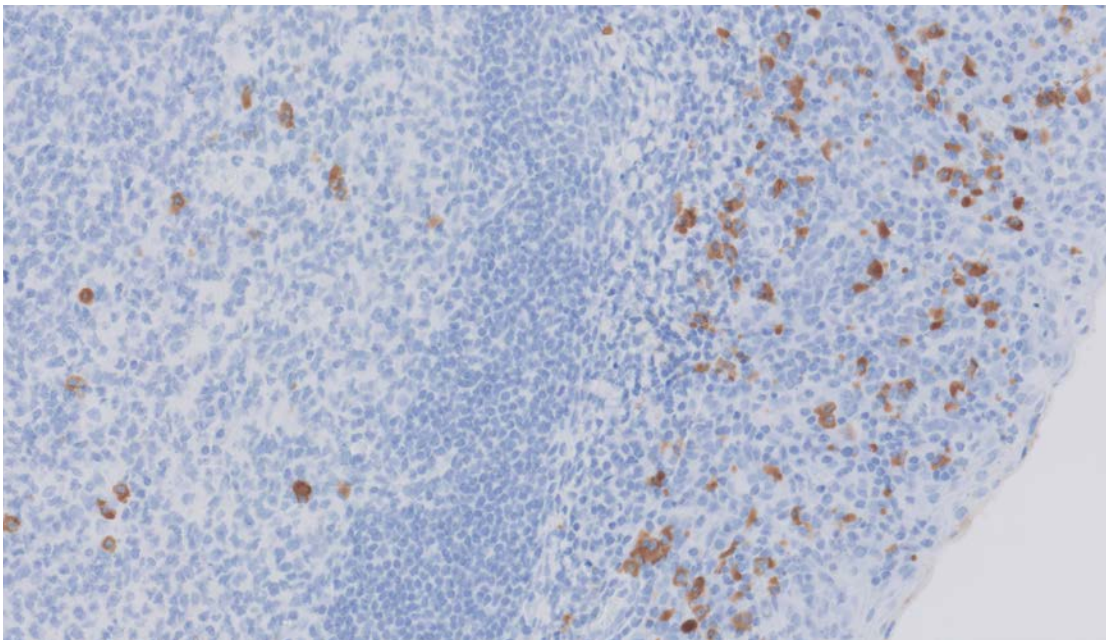
Polyclonal Rabbit Anti-Human

Antibody: **IgA**

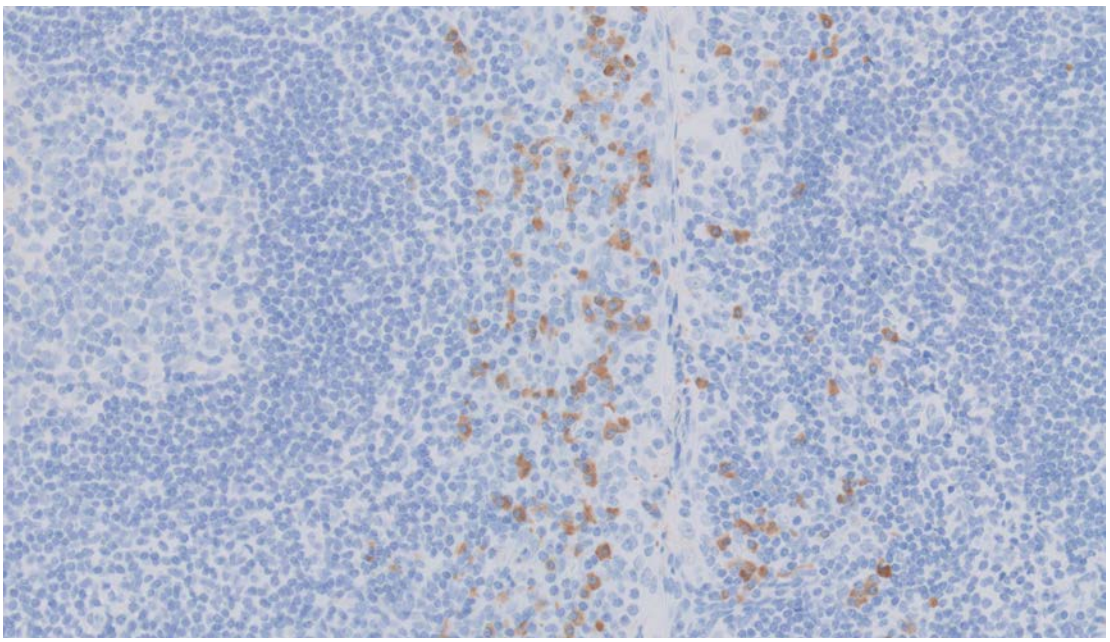
Clone: Polyclonal

Code: GA510

Reaction Location	Cytoplasm and/or membrane
Quality Control	**Tonsil**
High Expression	Plasma cells and germinal center immunoblasts show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	NA



Tonsil (20x)



Tonsil (20x)

Polyclonal Rabbit Anti-Human

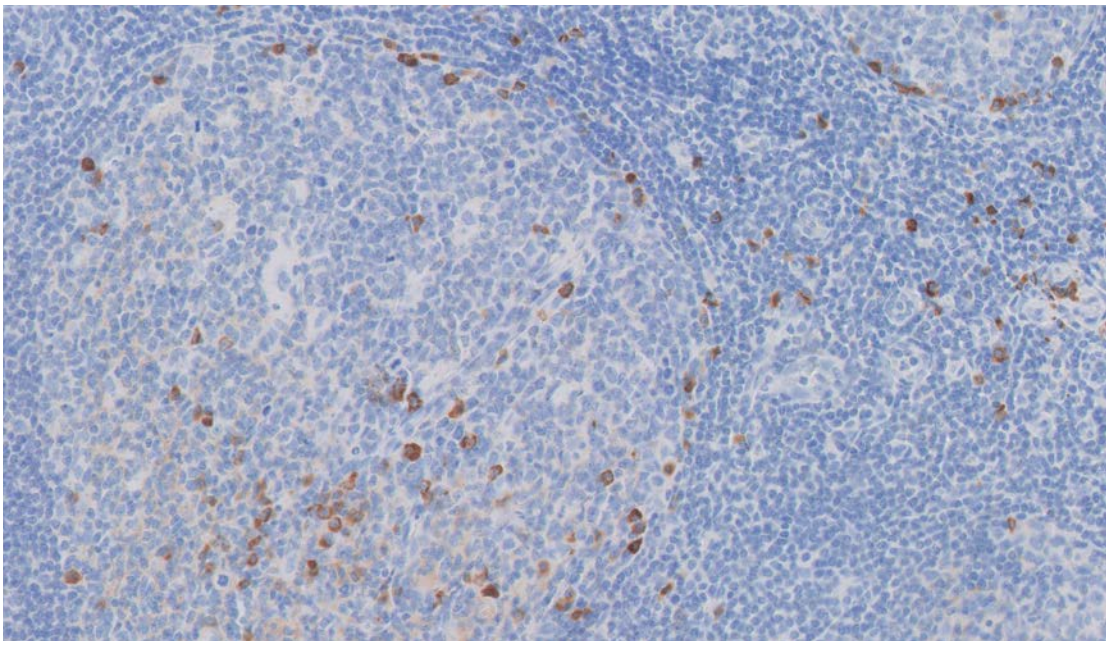
Antibody: **IgG**

Clone: Polyclonal

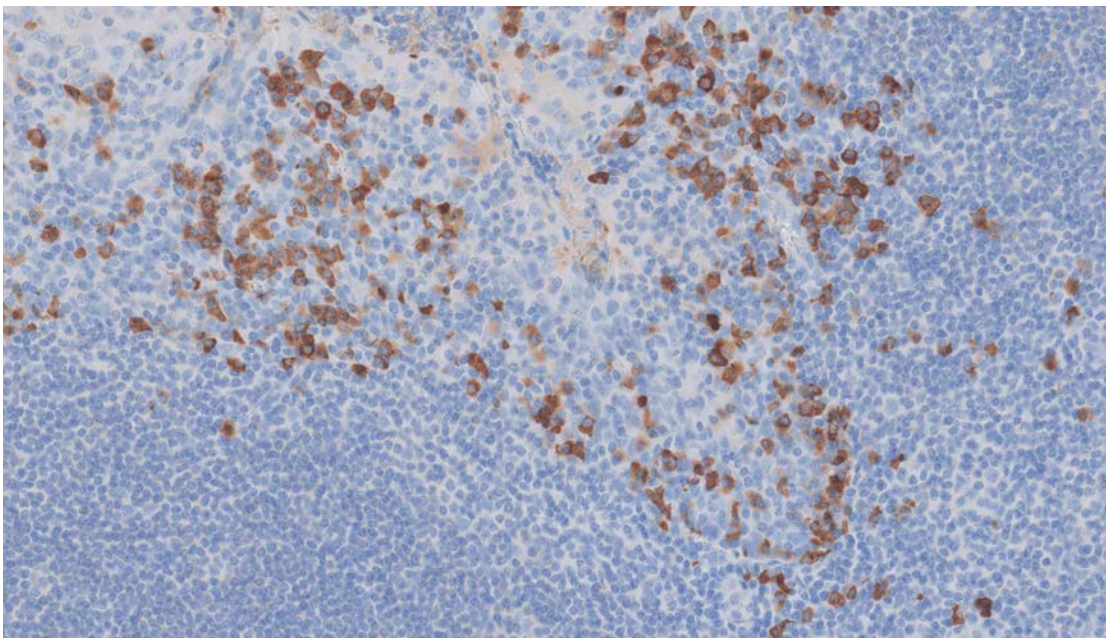
Code: GA512

Reaction Location	Cytoplasm and/or membrane
Quality Control	**Tonsil**
High Expression	Plasma cells and germinal center immunoblasts show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	NA

Note: In bone marrow, the majority of plasma cells show a strong cytoplasmic staining reaction.



Tonsil (20x)



Tonsil (20x)

Polyclonal Rabbit Anti-Human

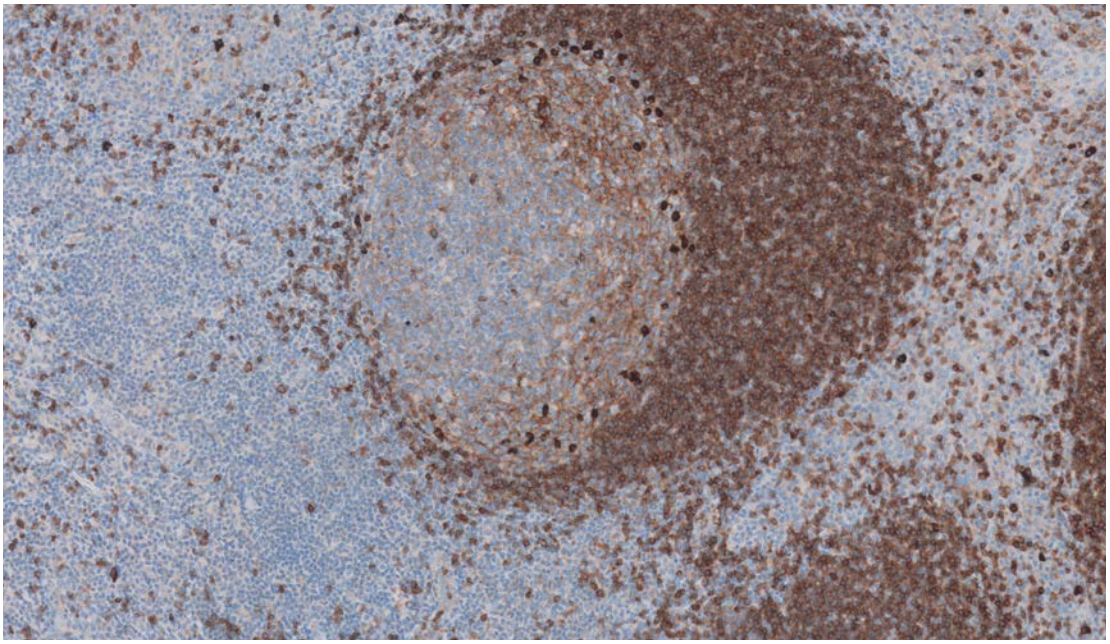
Antibody: **IgM**

Clone: Polyclonal

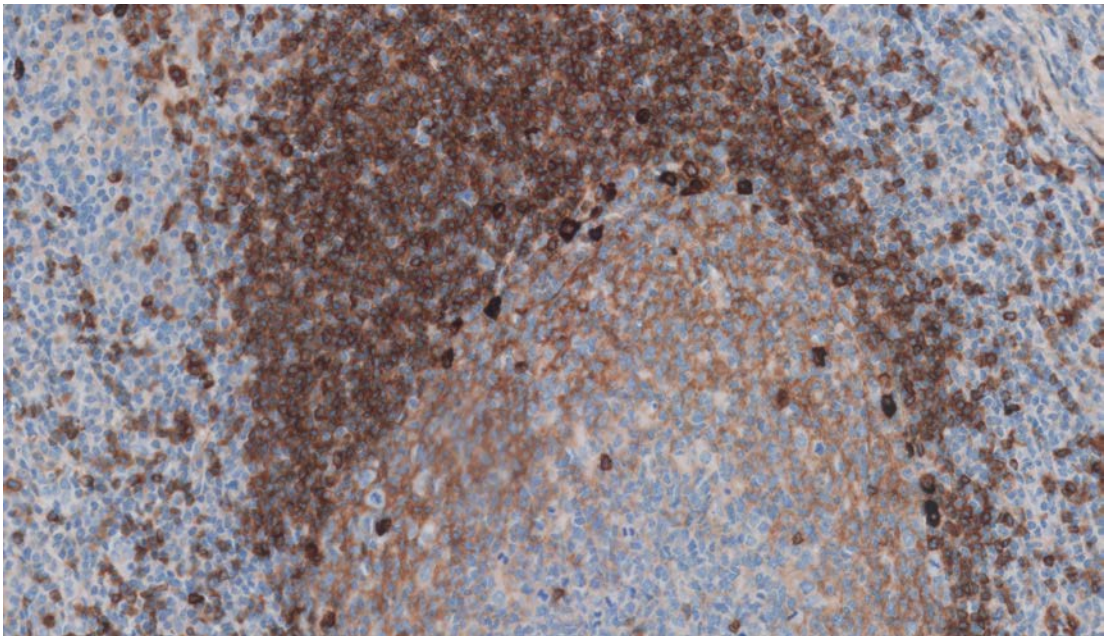
Code: GA513

Reaction Location	Cytoplasm and/or membrane
Quality Control	**Tonsil**
High Expression	Virtually all the mantle zone B cells show a moderate to strong membranous staining reaction, while immunoblasts and plasma cells in the germinal center show a strong cytoplasmic staining reaction.
Low Expression	NA
Non-expression	NA

Note: Some background reaction in serum, connective tissue and epithelial cells may be observed.



Tonsil (10x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

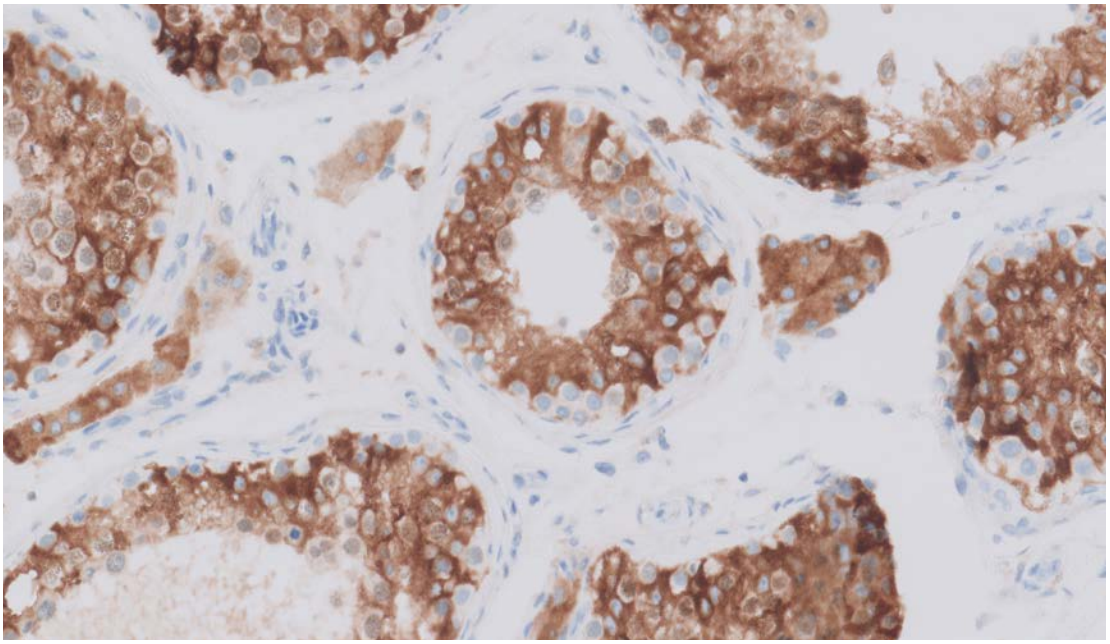
Antibody: **Inhibin α**

Clone: R1

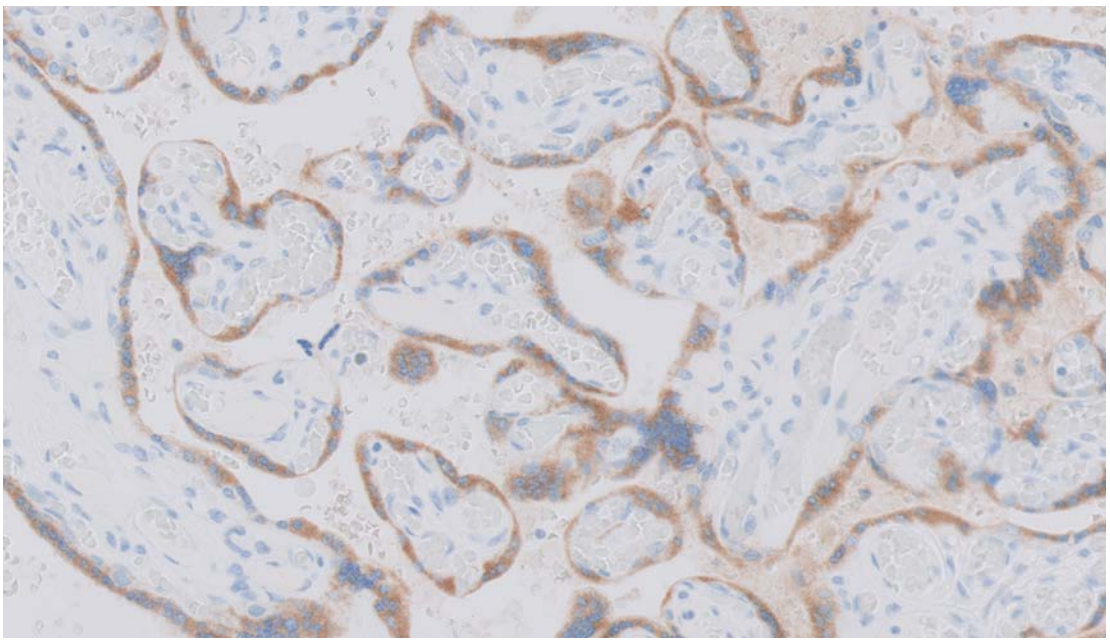
Code: GA058 | IR058

Reaction Location	Cytoplasm	
Quality Control	**Testis**	**Placenta**
High Expression	Leydig cells and the Sertoli cells show a moderate to strong distinct granular staining reaction.	NA
Low Expression	NA	Thropho- and syncytiotrophoblasts show a weak to moderate staining reaction.
Non-expression	NA	NA

Note: Occasionally, a weak to moderate coexisting nuclear staining reaction can be observed.



Testis (20x)



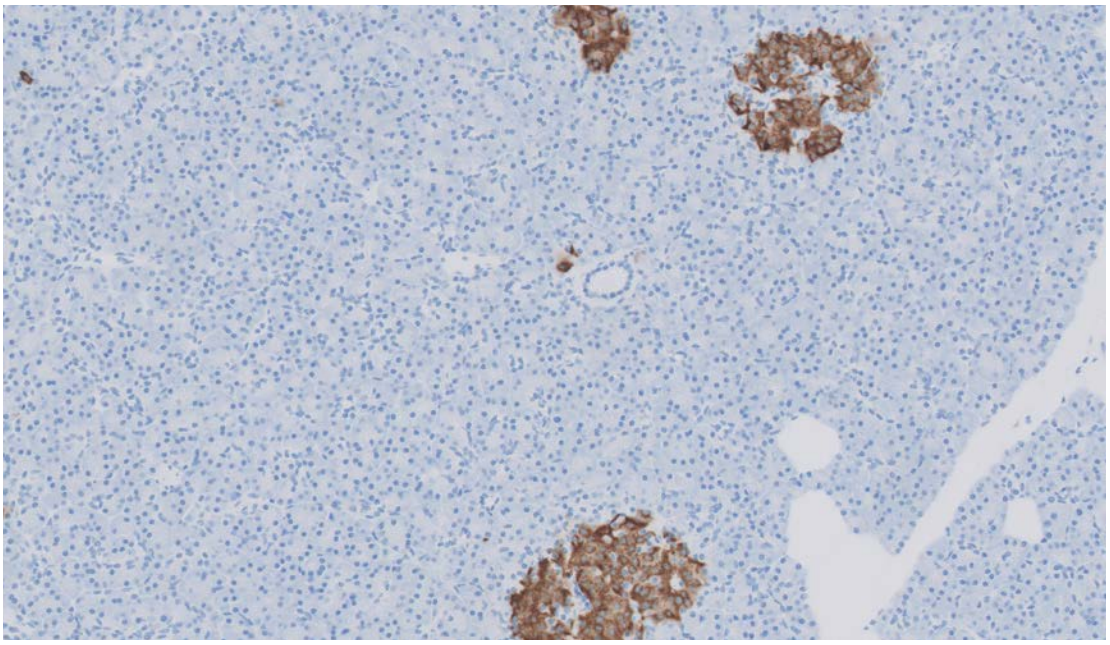
Placenta (20x)

Antibody: Polyclonal Guinea Pig Anti-**Insulin**

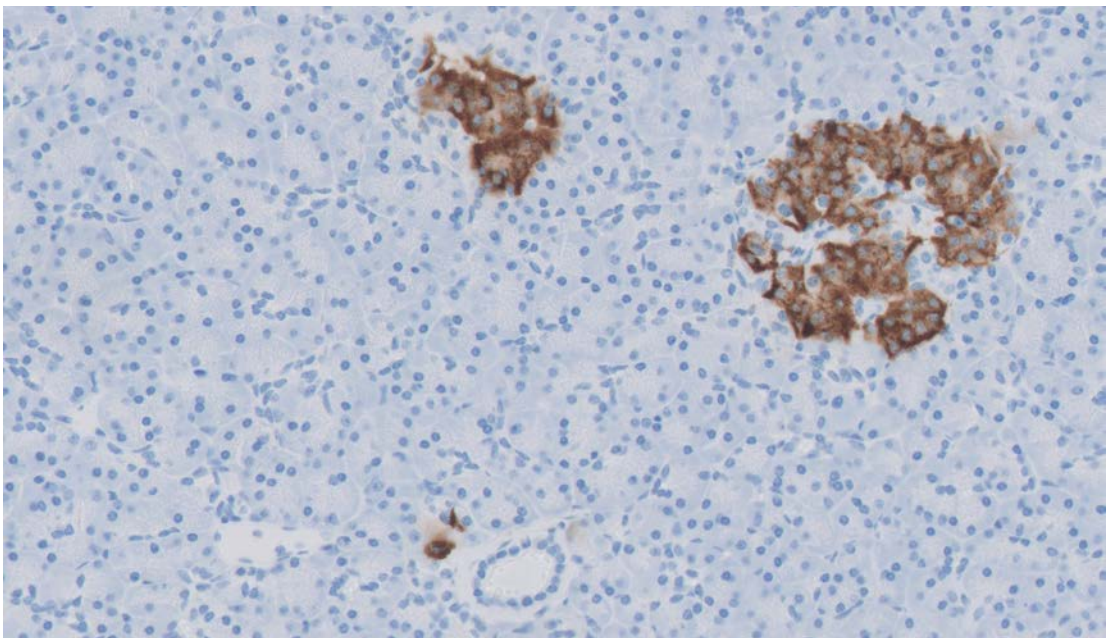
Clone: Polyclonal

Code: IR002

Reaction Location	Cytoplasm
Quality Control	**Pancreas**
High Expression	B cells in the islets of Langerhans show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	Acinar epithelial cells



Pancreas (10x)



Pancreas (20x)

Polyclonal Rabbit Anti-Human

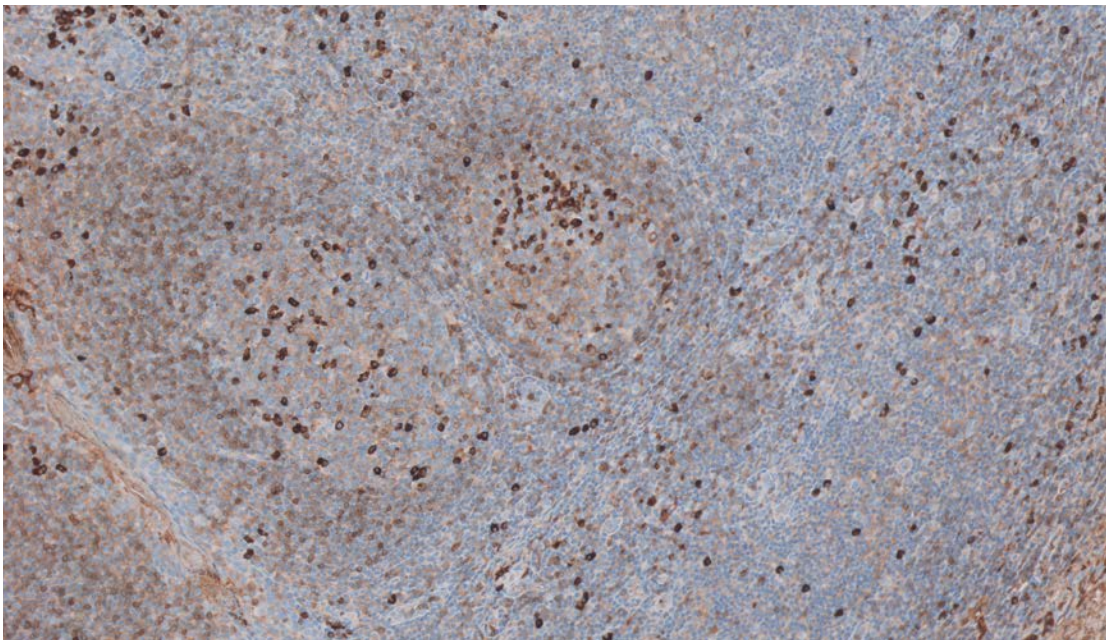
Antibody: **Kappa Light Chains**

Clone: Polyclonal

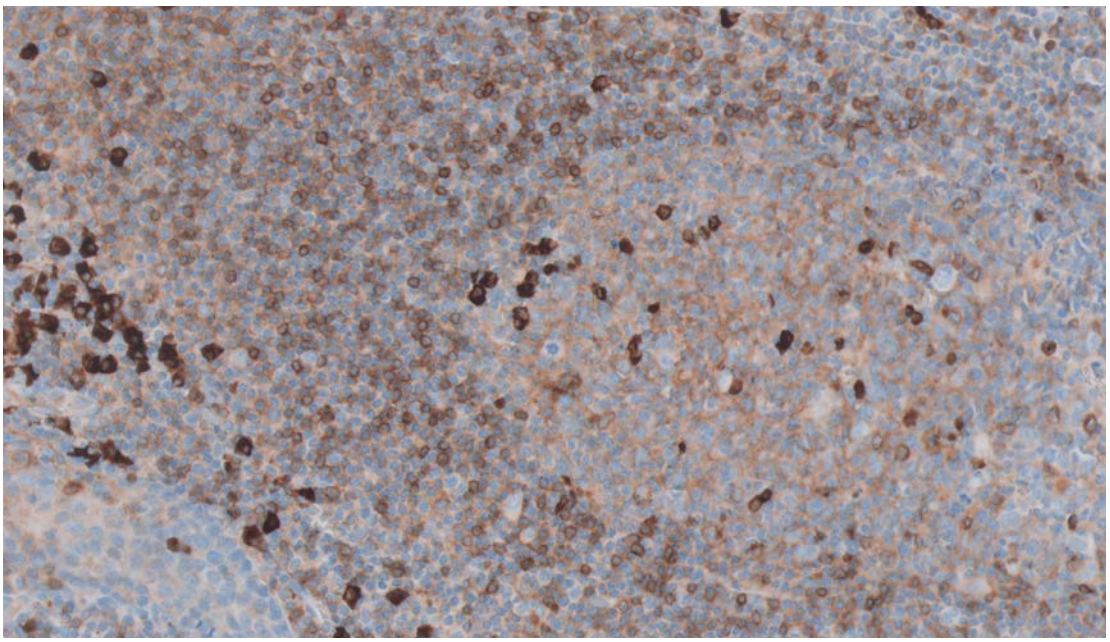
Code: GA506 | IR506

Reaction Location	Membrane and cytoplasm
Quality Control	**Tonsil**
High Expression	Immunoblasts and plasma cells in the germinal center show moderate to strong cytoplasmic staining.
Low Expression	Approximately 50% of the mantle zone B cells show a weak to moderate membranous staining reaction.
Non-expression	All T and B cells with lambda light chain expression.

Note: Some background reaction in serum, connective tissue and epithelial cells may be observed.



Tonsil (10x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

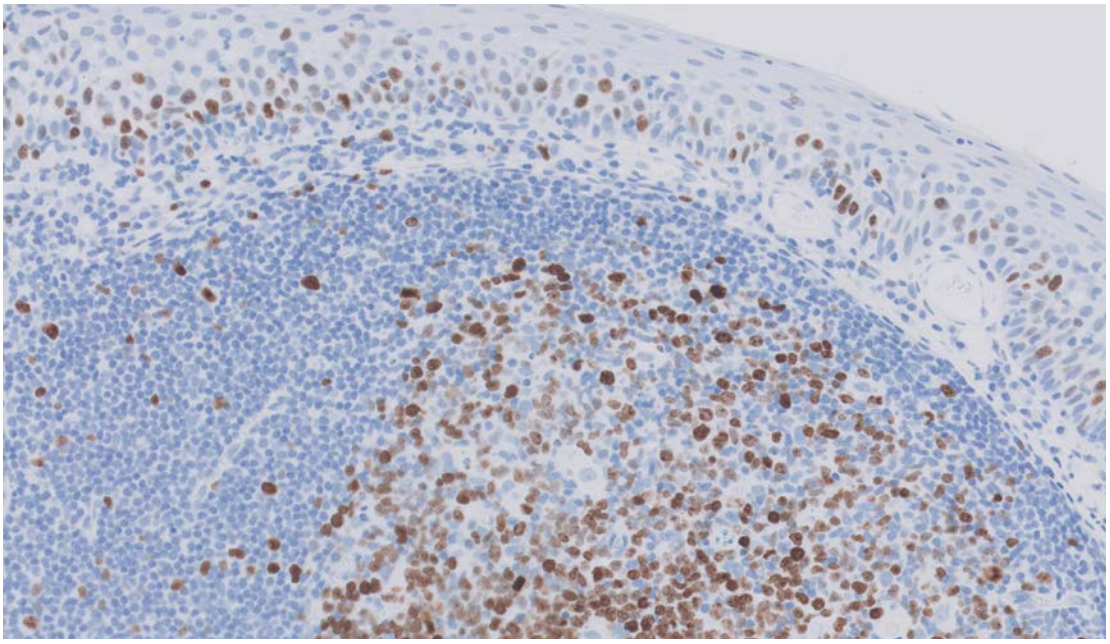
Antibody: **Ki-67 Antigen**

Clone: MIB-1

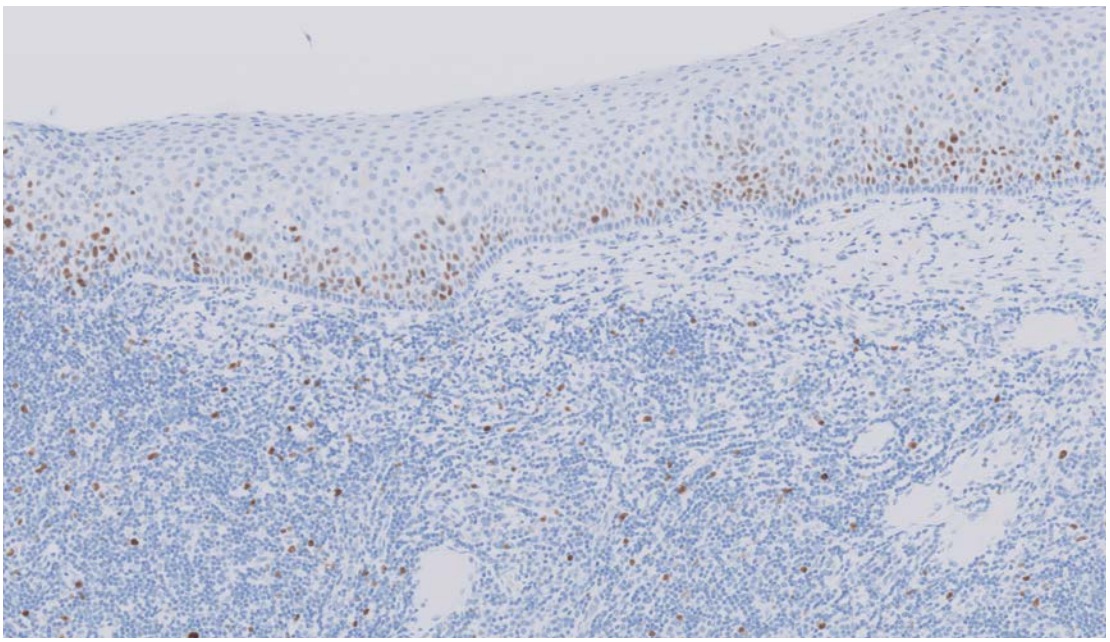
Code: GA626 | IR626

Reaction Location	Nucleus
Quality Control	**Tonsil**
High Expression	Germinal center B cells of the dark zone show a moderate to strong staining reaction.
Low Expression	Basal and parabasal squamous epithelial cells show a weak to moderate staining reaction.
Non-expression	NA

Note: In mitotic cells, the chromosomes and the cytoplasm are labeled.



Tonsil (20x)



Tonsil (10x)

Polyclonal Rabbit Anti-Human

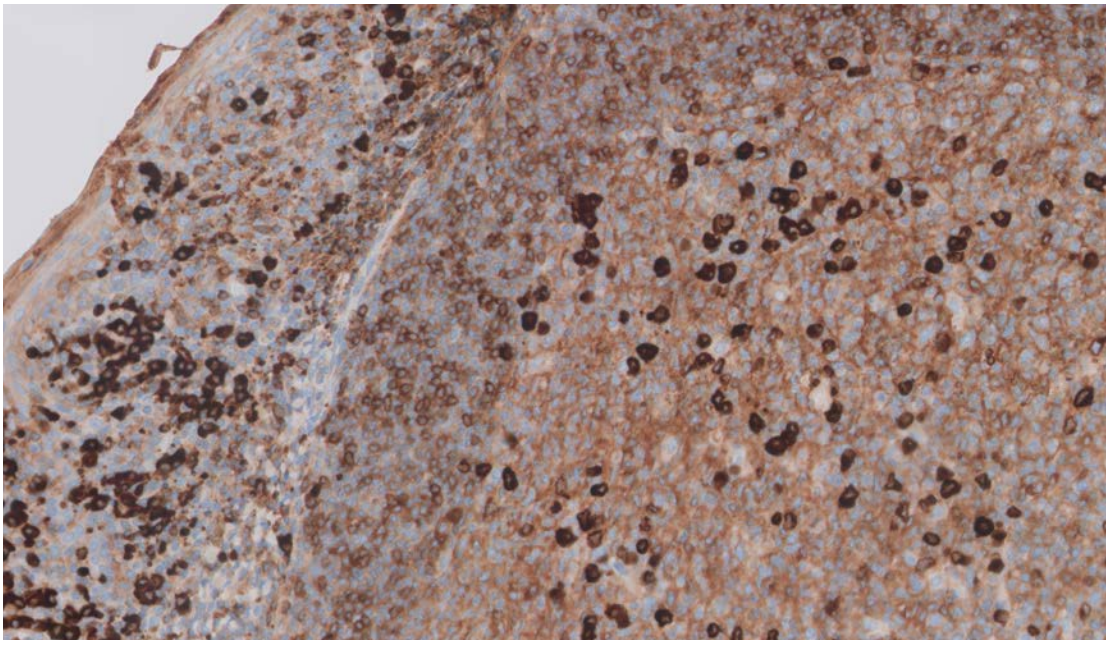
Antibody: **Lambda Light Chains**

Clone: Polyclonal

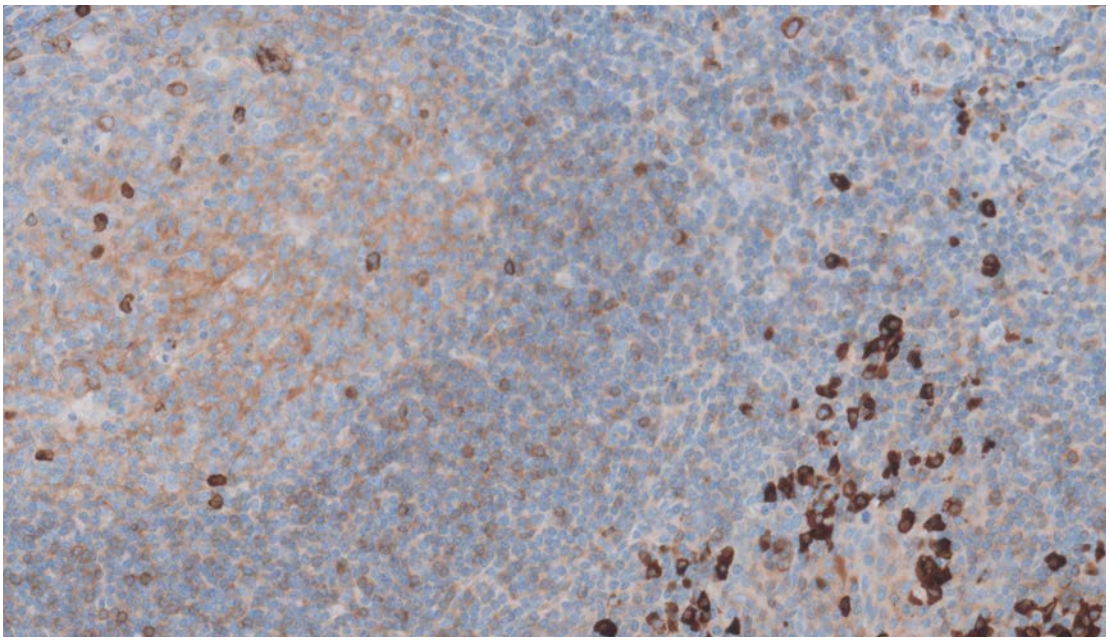
Code: GA507 | IR507

Reaction Location	Membrane and cytoplasm
Quality Control	**Tonsil**
High Expression	Immunoblasts and plasma cells in the germinal center show moderate to strong cytoplasmic staining.
Low Expression	Approximately 50% of the mantle zone B cells show weak to moderate membranous staining reaction.
Non-expression	All T and B cells with kappa light chain expression.

Note: Some background reaction in serum, connective tissue and epithelial cells may be observed.



Tonsil (20x)



Tonsil (20x)

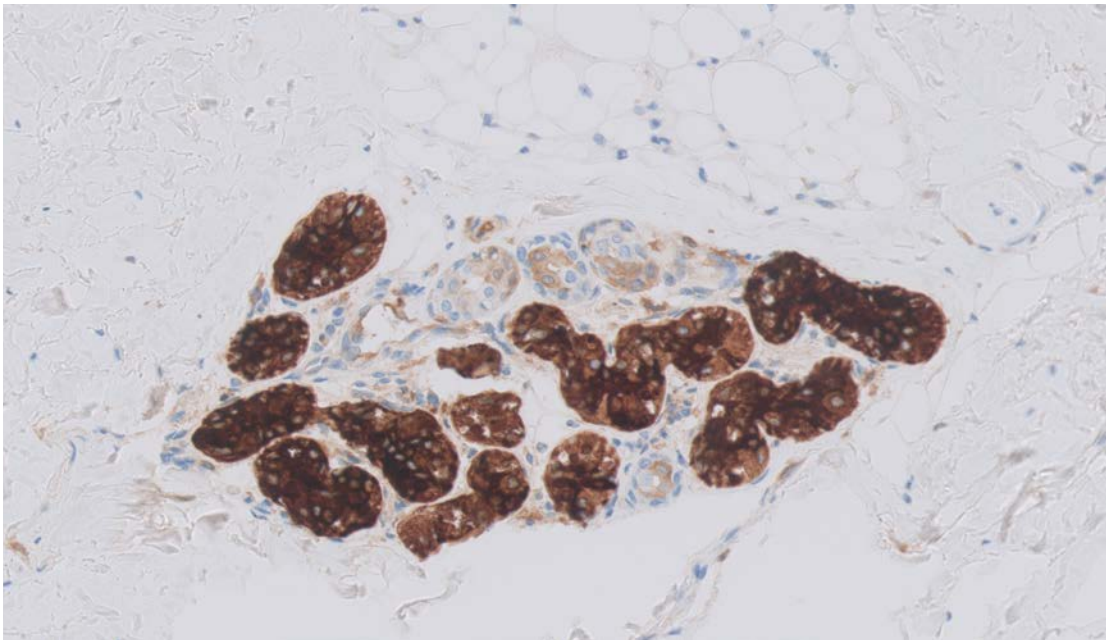
Monoclonal Mouse Anti-Human

Antibody: **Mammaglobin**

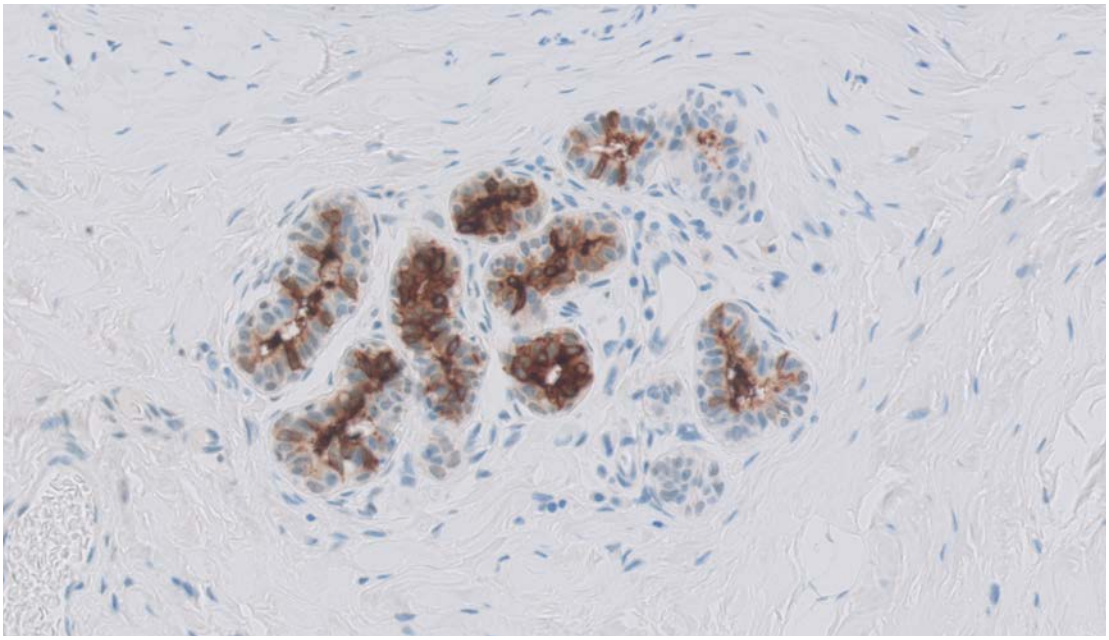
Clone: 304-1A5

Code: GA074 | IR074

Reaction Location	Cytoplasm	
Quality Control	**Skin**	**Breast hyperplasia**
High Expression	Epithelial cells in sweat glands show at least a focal, moderate to strong staining reaction.	At least focally, ductal epithelial cells show moderate to strong staining reaction.
Low Expression	NA	NA
Non-expression	Squamous epithelial cells	NA



Skin (20x)



Breast hyperplasia (20x)

Monoclonal Mouse Anti-Human

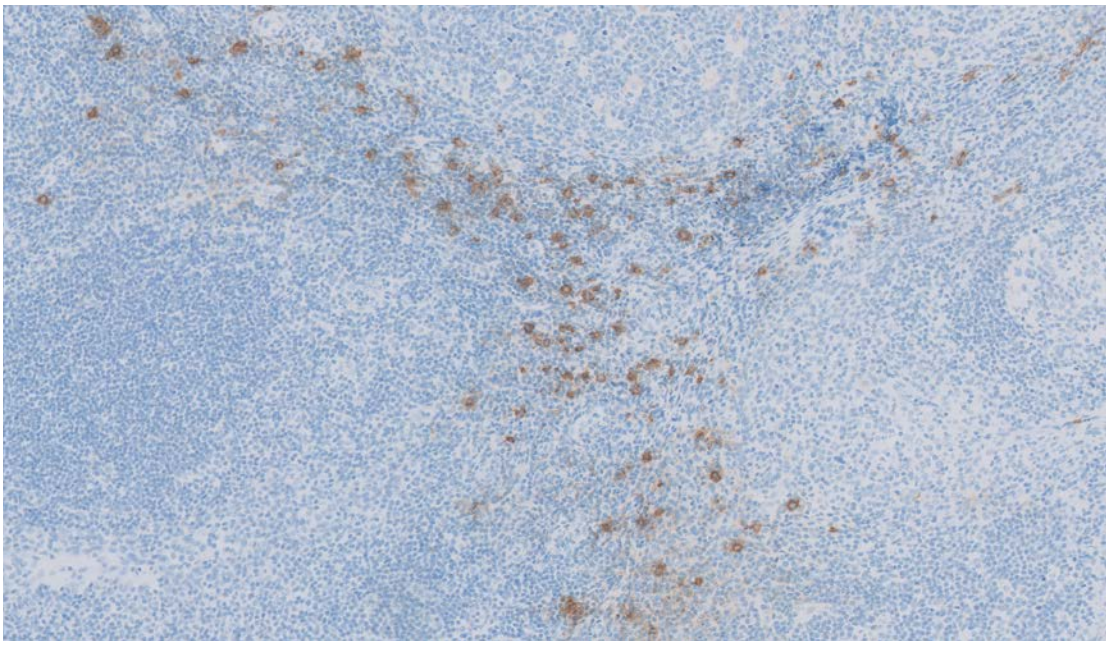
Antibody: **Mast Cell Tryptase**

Clone: AA1

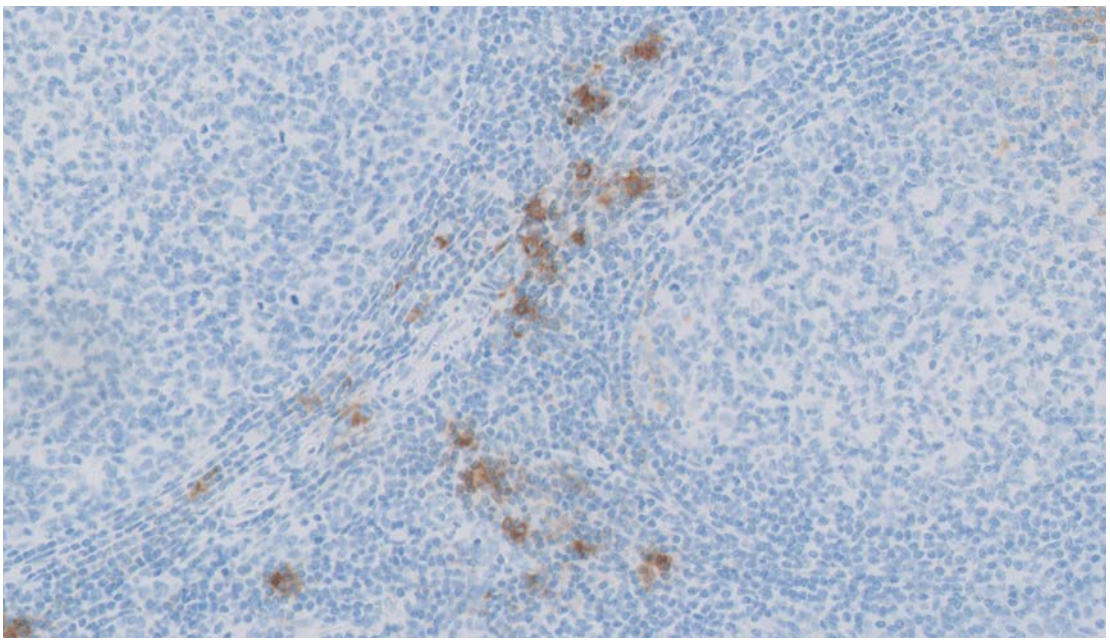
Code: IR640

Reaction Location	Cytoplasm
Quality Control	**Tonsil**
High Expression	Mast cells show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	Lymphocytes

Note: Occasionally, a weak and diffuse staining pattern in the vicinity of the labeled cells may be seen.



Tonsil (10x)



Tonsil (20x)

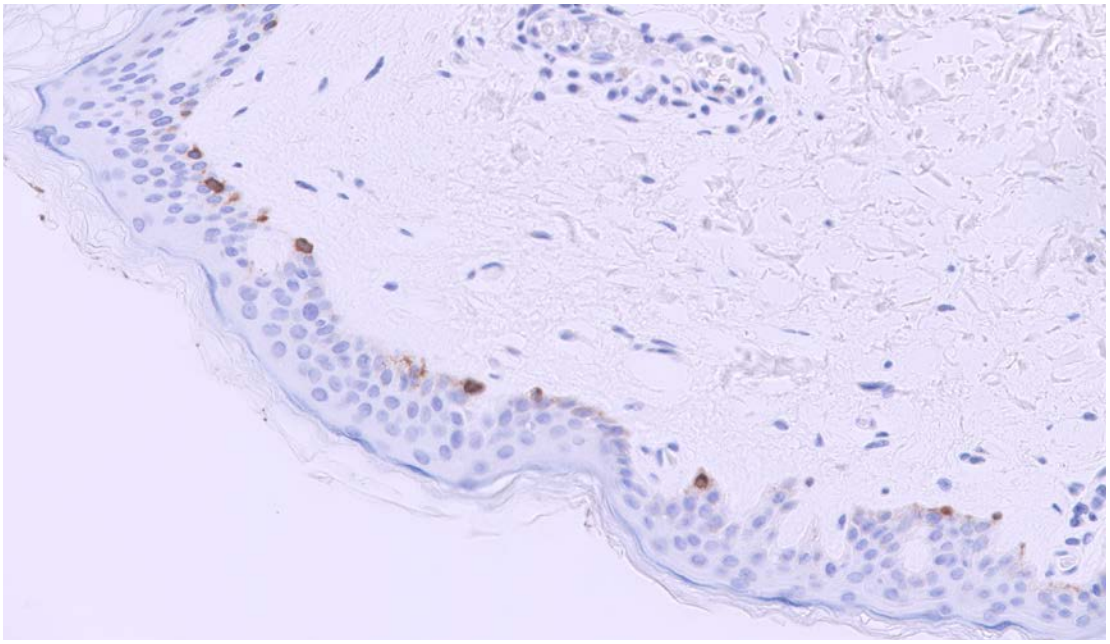
Monoclonal Mouse Anti-Human

Antibody: **Melan-A**

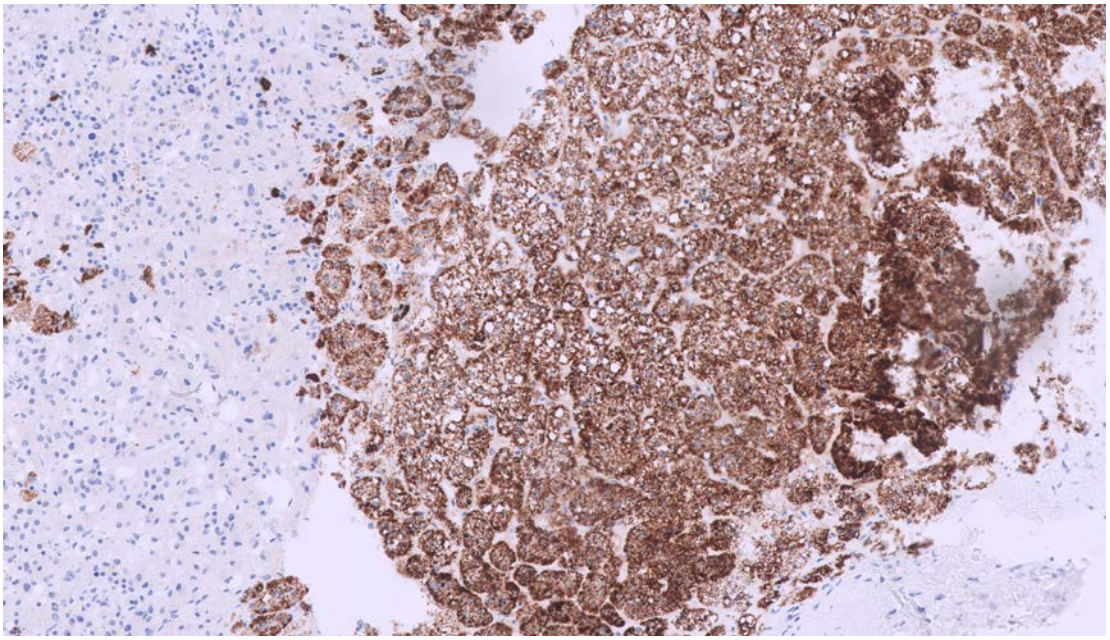
Clone: A103

Code: GA633 | IR633

Reaction Location	Cytoplasm	
Quality Control	**Skin**	**Adrenal gland**
High Expression	Melanocytes in the basal layer of the epidermis show a moderate to strong staining reaction.	NA
Low Expression	NA	Virtually all the adrenal cortical cells show a weak to strong granular staining reaction throughout all zones of the gland.
Non-expression	NA	NA



Skin (20x)



Adrenal gland (5x)

Monoclonal Mouse Anti-Human

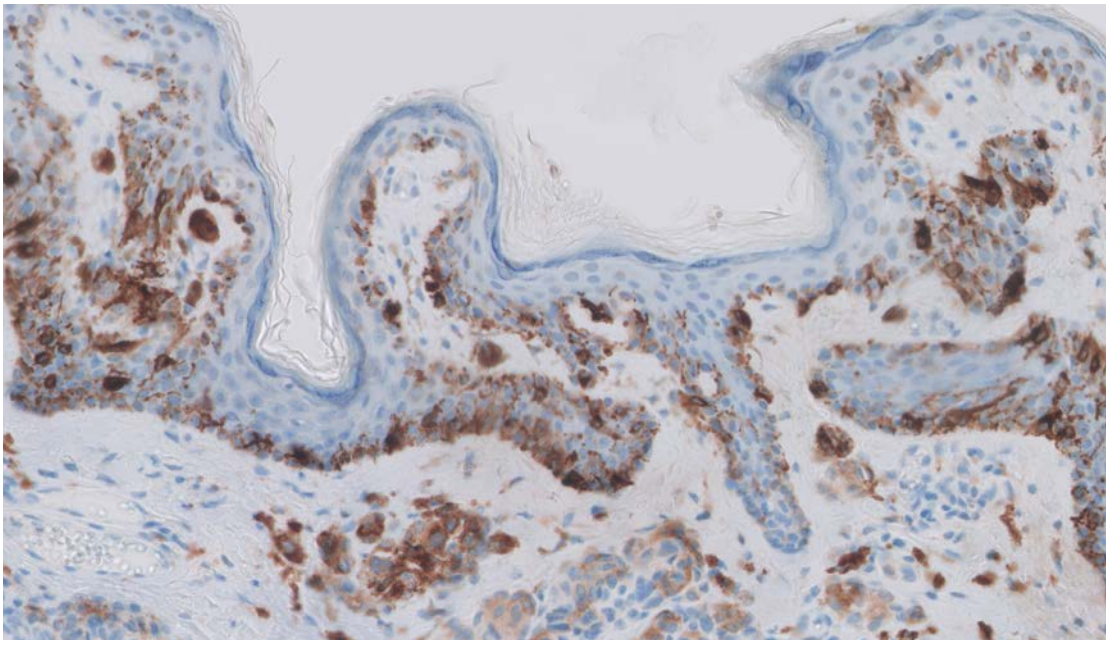
Antibody: **Melanosome**

Clone: HMB45

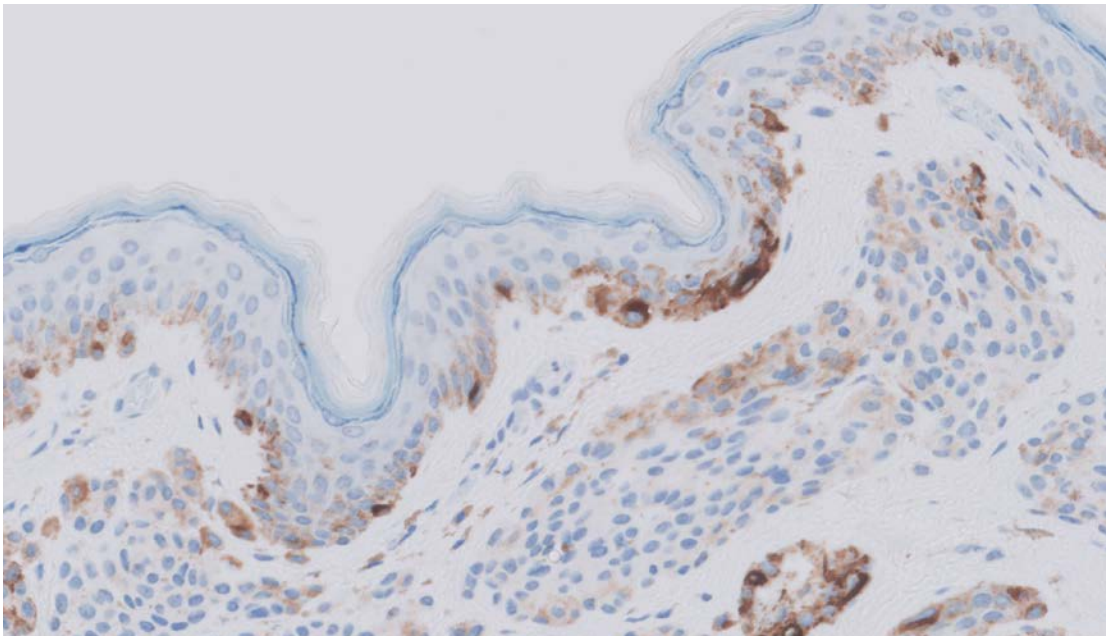
Code: GA052 | IR052

Reaction Location	Cytoplasm	
Quality Control	**Nevus**	**Kidney (not shown)**
High Expression	The nevus cells in the dermis show a weak to strong staining reaction.	NA
Low Expression	The nevus cells in the dermis show a weak to strong staining reaction.	NA
Non-expression	NA	Epithelial cells

Note: Normal resting melanocytes in skin are typically not demonstrated by the antibody.



Nevus (20x)



Nevus (20x)

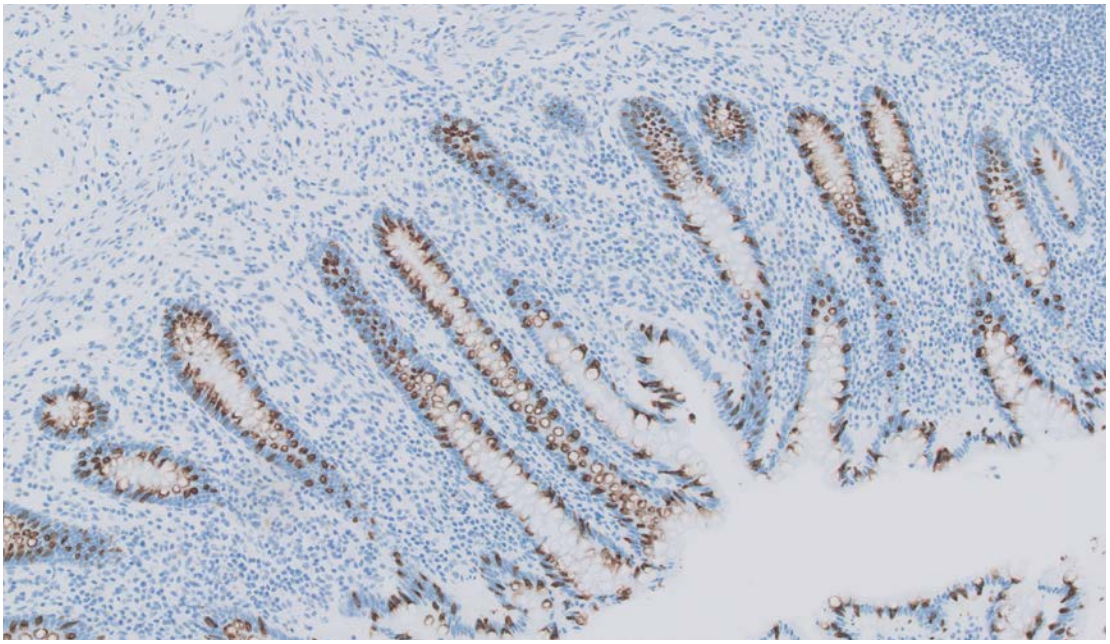
Monoclonal Mouse Anti-Human

Antibody: **MUC2**

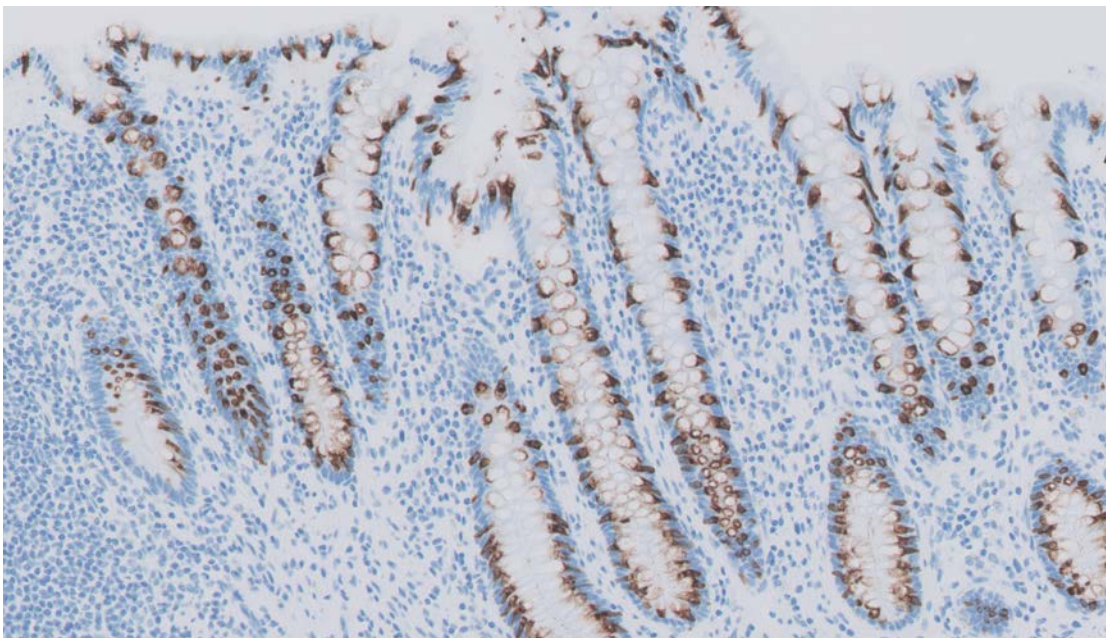
Clone: CCP58

Code: IR658

Reaction Location	Cytoplasm
Quality Control	**Colon/Appendix**
High Expression	Goblet cells show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	NA



Appendix (10x)



Appendix (20x)

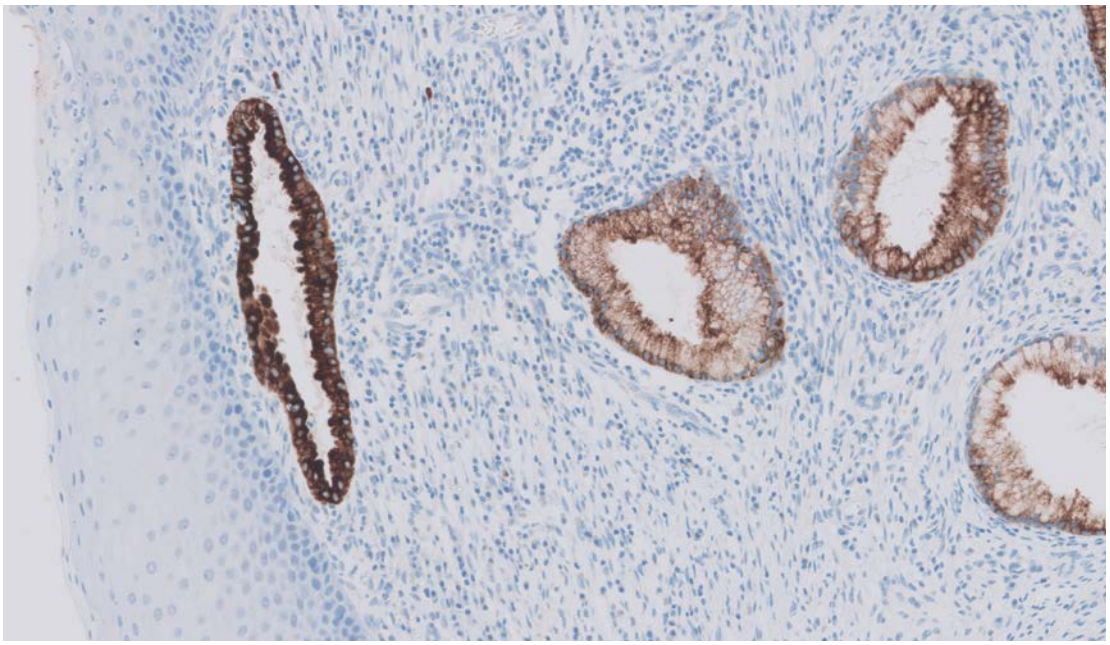
Monoclonal Mouse Anti-Human

Antibody: **MUC5AC**

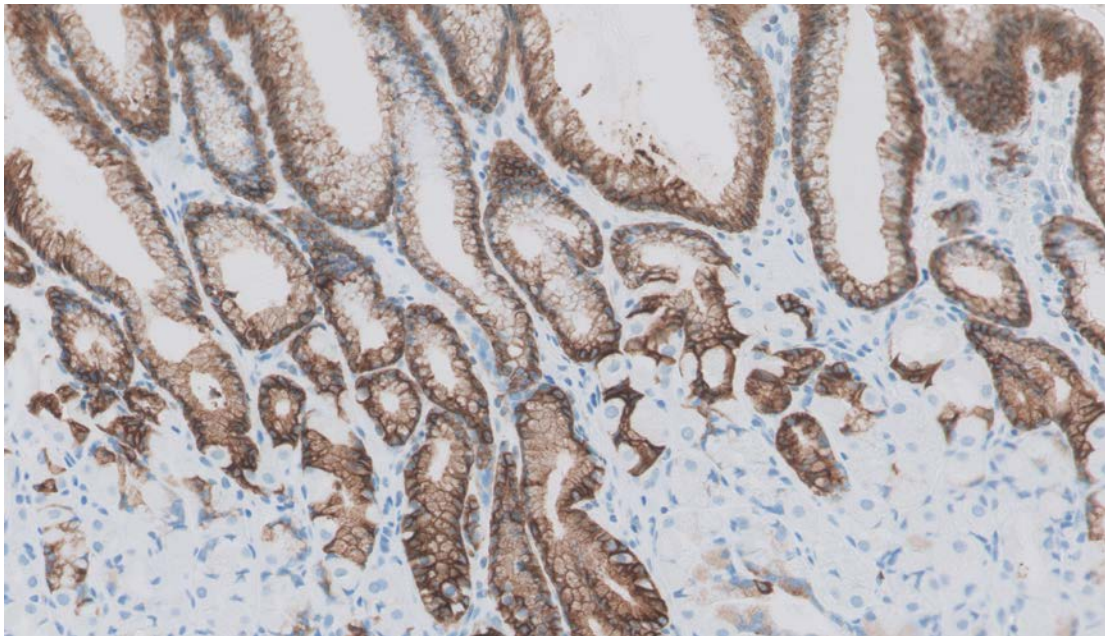
Clone: CLH2

Code: IR661

Reaction Location	Cytoplasm and/or nucleus	
Quality Control	**Cervix**	**Gastric**
High Expression	Columnar epithelial cells show a moderate to strong staining reaction.	Foveolar and mucopeptic neck cells show a moderate to strong staining reaction.
Low Expression	NA	NA
Non-expression	NA	NA



Cervix (10x)



Gastric (20x)

Monoclonal Mouse Anti-Human

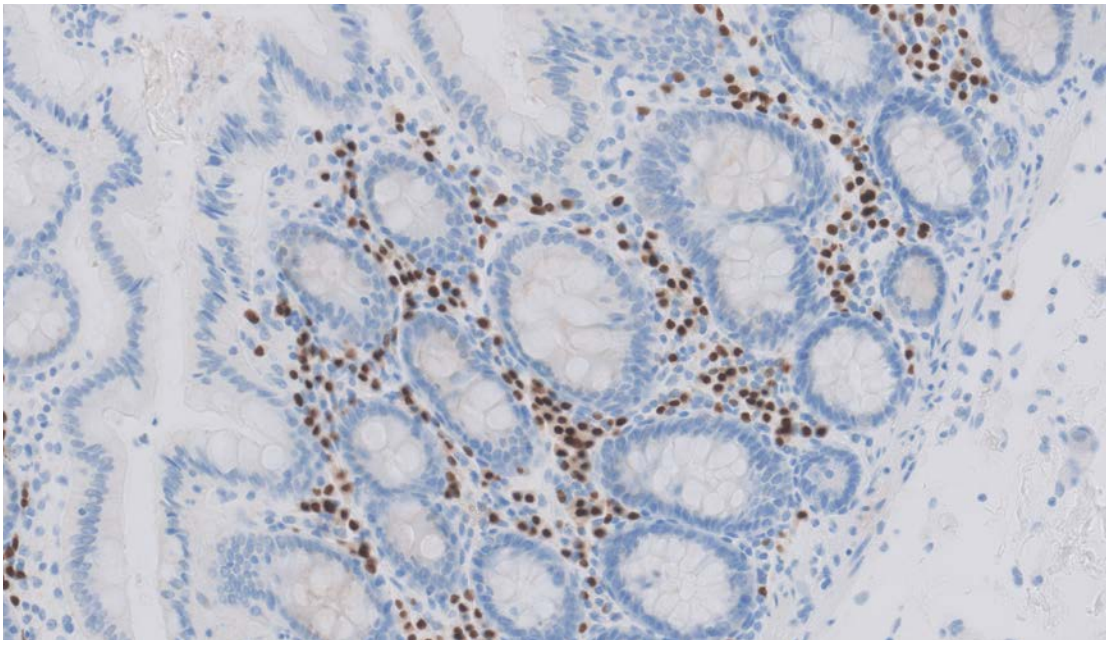
Antibody: **MUM1 Protein**

Clone: MUM1p

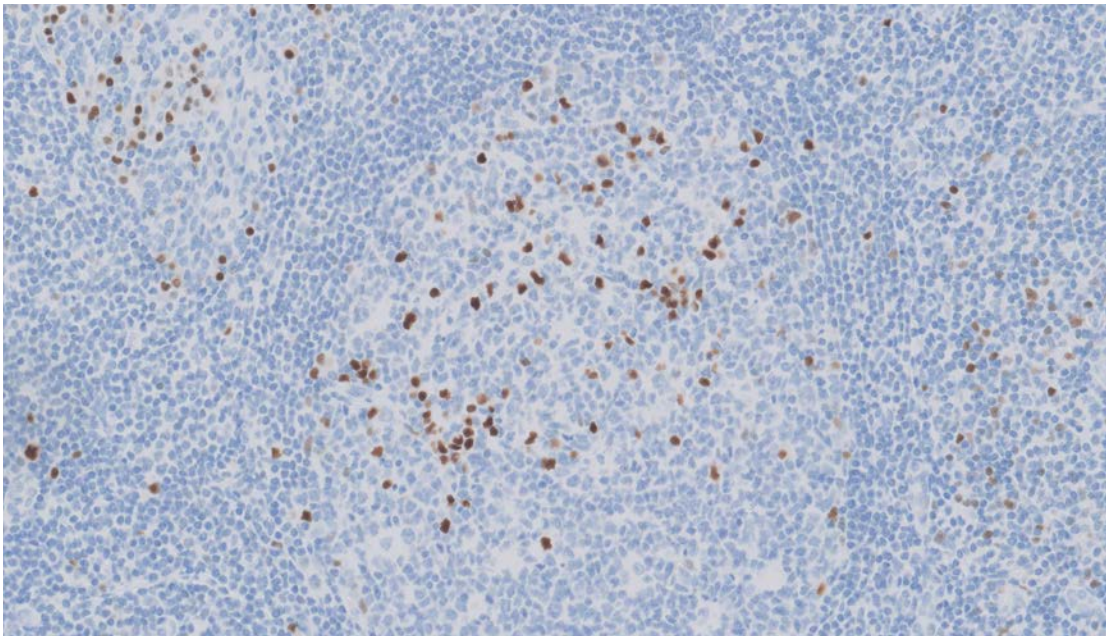
Code: GA644 | IR644

Reaction Location	Nucleus and cytoplasm	
Quality Control	**Colon/Appendix**	**Tonsil**
High Expression	Plasma cells show a moderate to strong predominantly nuclear staining reaction.	NA
Low Expression	NA	Activated B cells show a weak to moderate predominantly nuclear staining reaction.
Non-expression	NA	Epithelial cells

Note: Interfollicular cells show a moderate to strong nuclear staining reaction. Only a minimal cytoplasmic staining reaction should be seen.



Colon (20x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

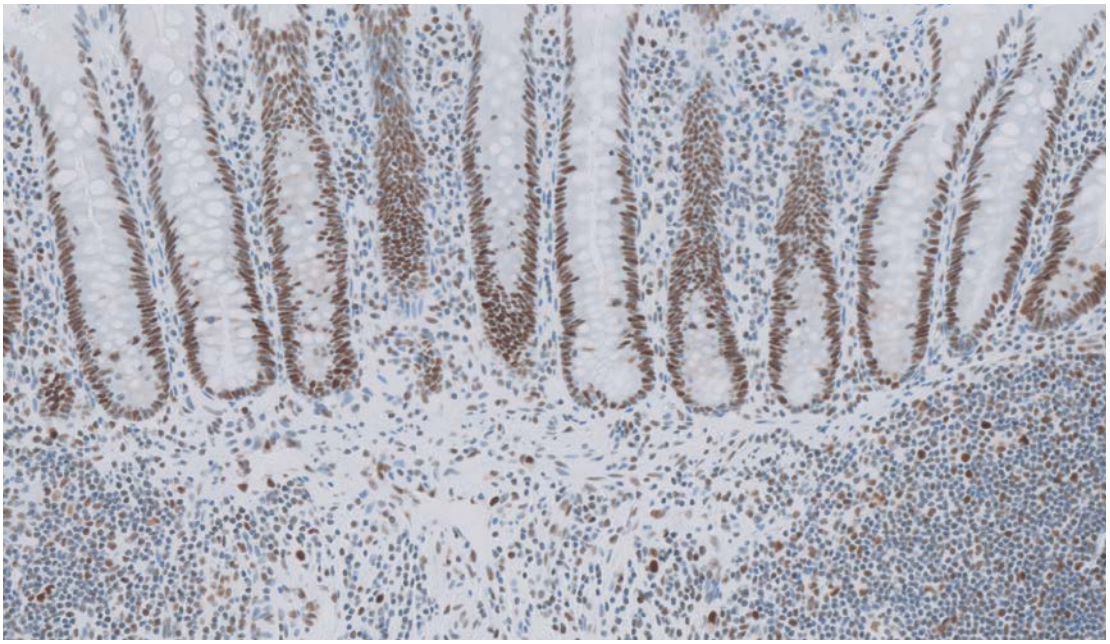
Antibody: **MutL Protein Homolog 1 (MLH1)**

Clone: ES05

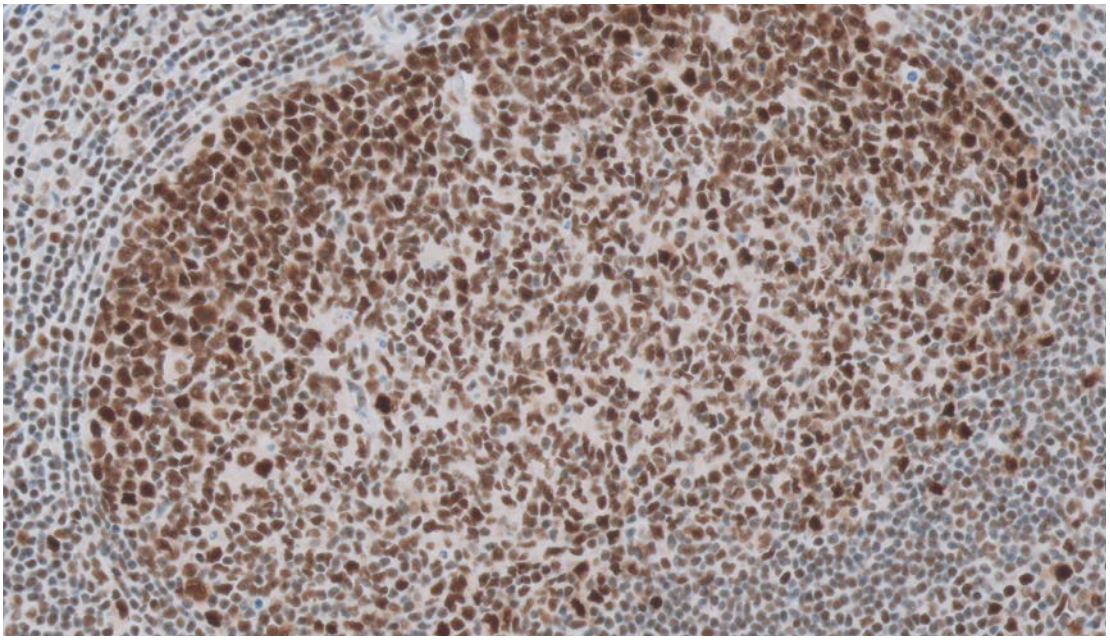
Code: GA079 | IR079

Reaction Location	Nucleus	
Quality Control	**Colon/Appendix**	**Tonsil**
High Expression	Basal epithelial cells show a moderate to strong staining reaction.	Germinal center cells show a moderate to strong staining reaction.
Low Expression	Luminal epithelial cells and smooth muscle cells show at least a weak to moderate staining reaction.	Mantle zone B and T cells show a weak to moderate staining reaction.
Non-expression	NA	NA

Note: Delayed fixation or long term storage of cut sections may reduce staining intensity which may impact interpretation.



Appendix (20x)



Tonsil (20x)

Monoclonal Mouse Anti-Human

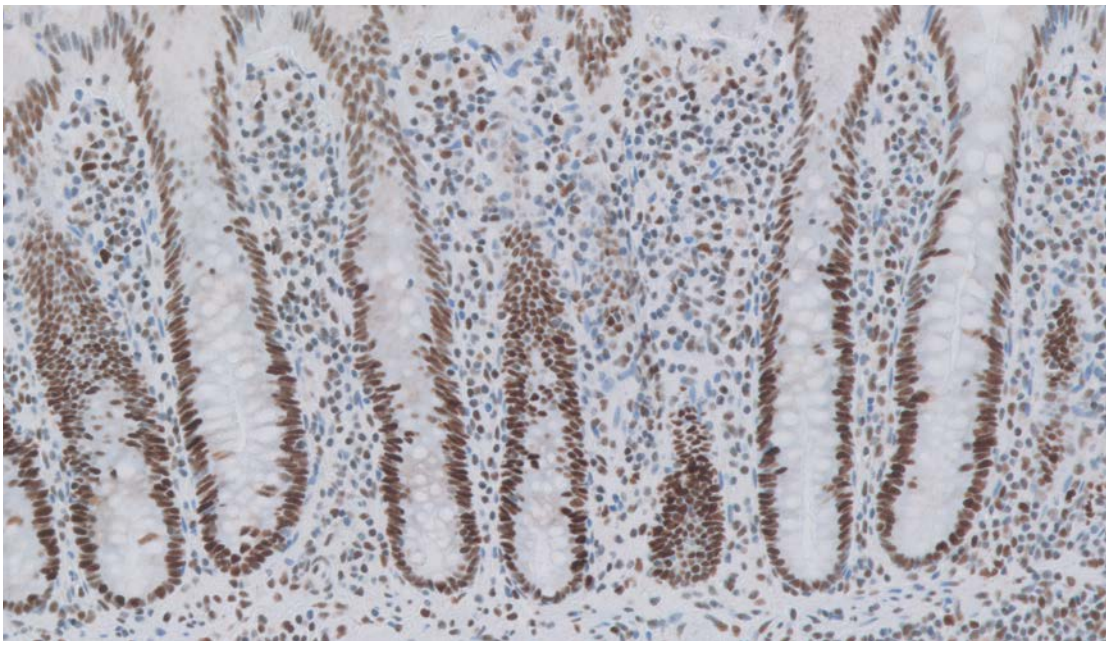
Antibody: **MutS Protein Homolog 2 (MSH2)**

Clone: FE11

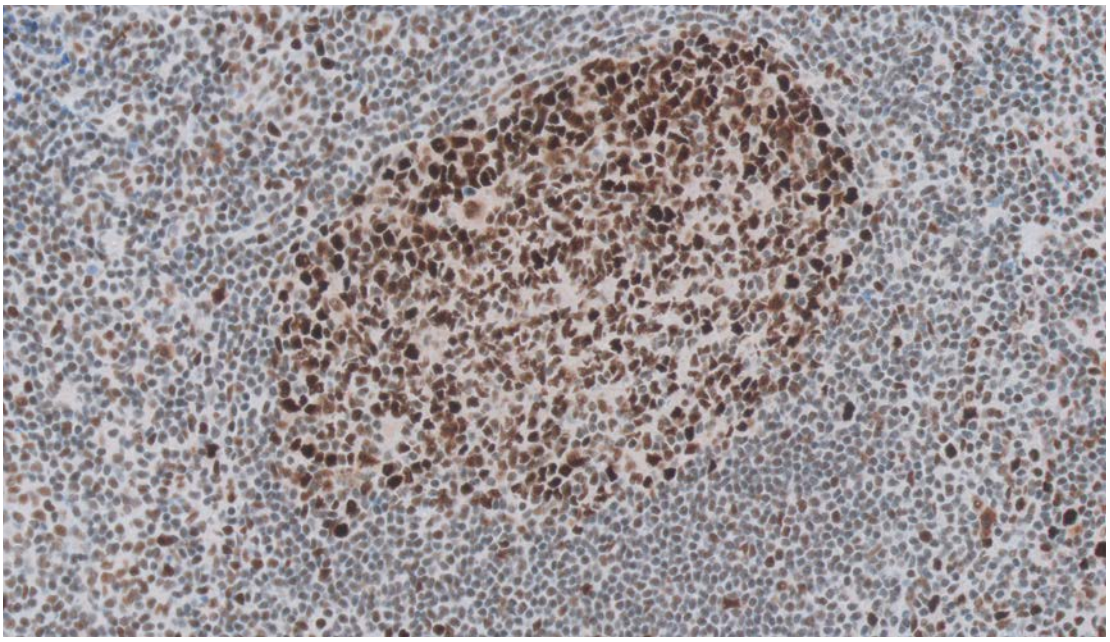
Code: GA085 | IR085

Reaction Location	Nucleus	
Quality Control	**Colon/Appendix**	**Tonsil**
High Expression	Basal epithelial cells show a moderate to strong staining reaction.	Germinal center cells show a moderate to strong staining reaction.
Low Expression	Luminal epithelial cells and smooth muscle cells show at least a weak to moderate staining reaction.	Mantle zone B and T cells show a weak to moderate staining reaction.
Non-expression	NA	NA

Note: Delayed fixation or long term storage of cut sections may reduce staining intensity which may impact interpretation.



Appendix (20x)



Tonsil (20x)

Monoclonal Rabbit Anti-Human

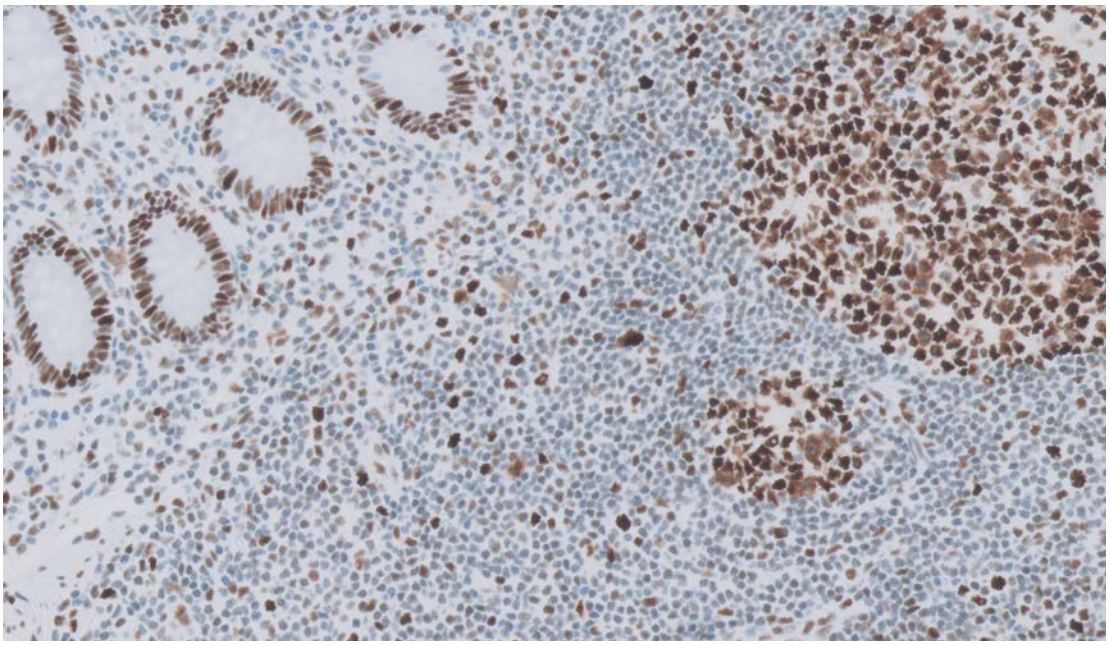
Antibody: **MutS Protein Homolog 6 (MSH6)**

Clone: EP49

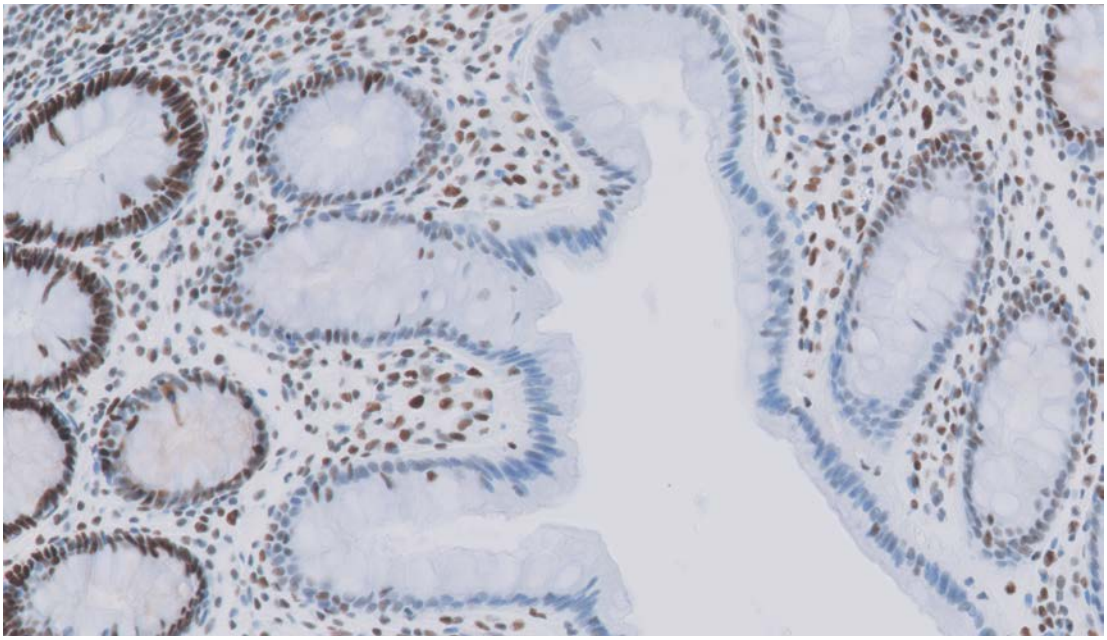
Code: GA086 | IR086

Reaction Location	Nucleus
Quality Control	**Colon/Appendix**
High Expression	Virtually all cells show a distinct nuclear staining reaction. The basal epithelial cells and germinal center cells in lymphoid follicles show a moderate to strong staining reaction.
Low Expression	Luminal epithelial cells and stromal cells should at least show a weak to moderate staining reaction.
Non-expression	NA

Note: Delayed fixation or long term storage of cut sections may reduce staining intensity which may impact interpretation.



Appendix (20x)



Colon (20x)

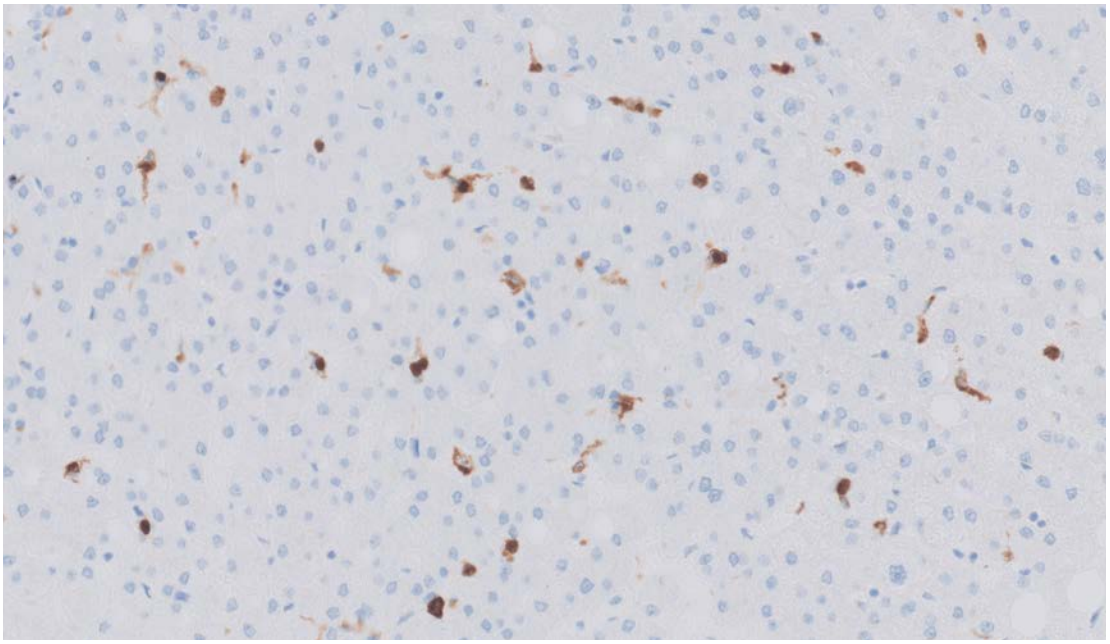
Polyclonal Rabbit Anti-Human

Antibody: **Myeloperoxidase**

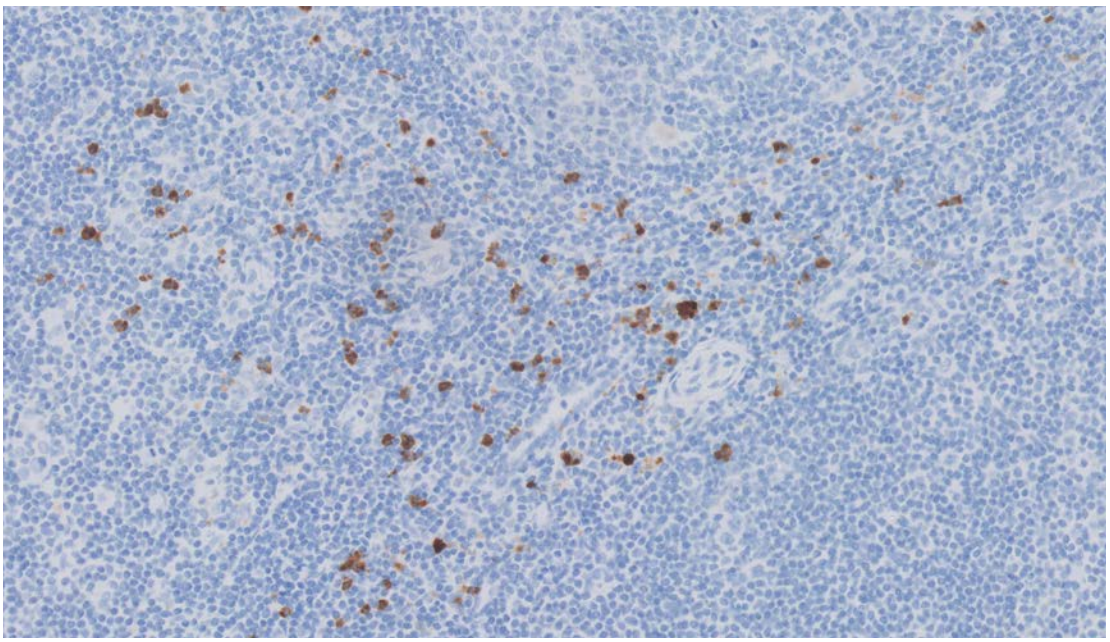
Clone: Polyclonal

Code: GA511 | IR511

Reaction Location	Cytoplasm	
Quality Control	**Liver**	**Tonsil**
High Expression	Neutrophils and Kupffer cells show a moderate to strong granular cytoplasmic staining reaction.	Neutrophils and eosinophils in the interfollicular zones and the germinal center macrophages show a moderate to strong granular cytoplasmic staining reaction.
Low Expression	NA	NA
Non-expression	Hepatocytes (or only weak staining reaction)	NA



Liver (20x)



Tonsil (20x)

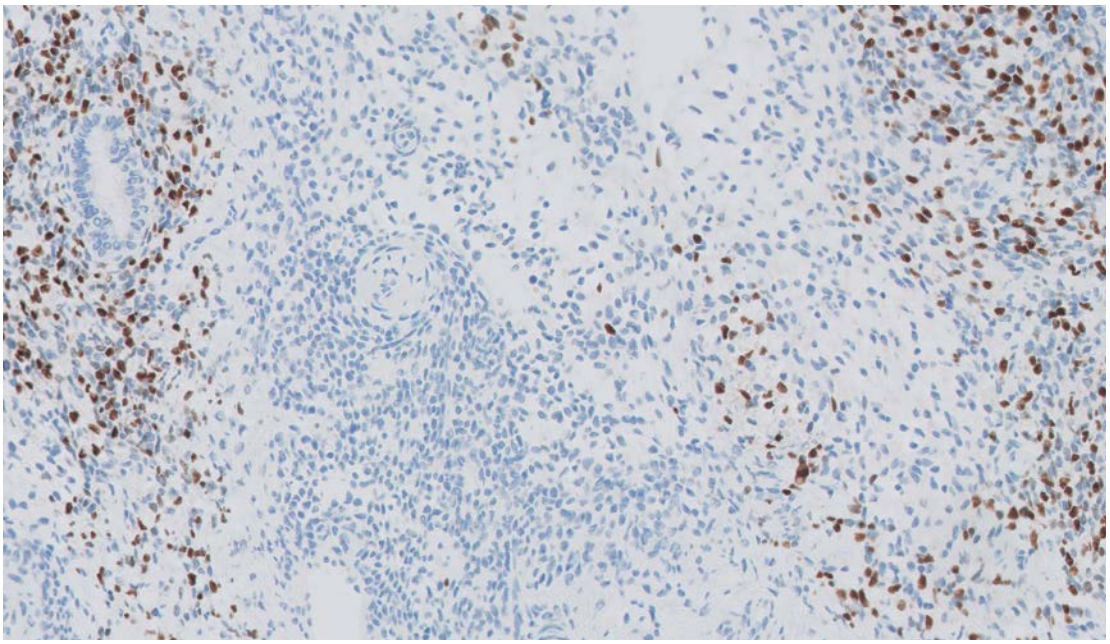
Monoclonal Mouse Anti-

Antibody: **Myogenin**

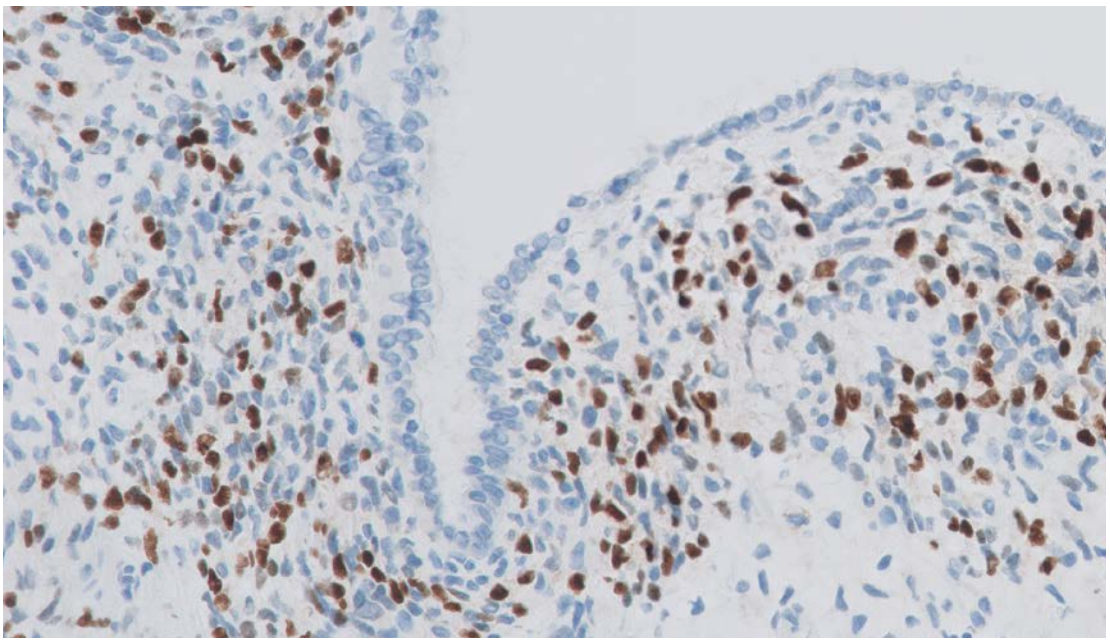
Clone: F5D

Code: GA067 | IR067

Reaction Location	Nucleus	
Quality Control	**Rhabdomyosarcoma**	**Leiomyosarcoma (not shown)**
High Expression	At least focally, neoplastic cells show a moderate to strong nuclear staining reaction and no, or only a minimal, cytoplasmic staining reaction.	NA
Low Expression	NA	NA
Non-expression	NA	Neoplastic cells



Rhabdomyosarcoma (10x)



Rhabdomyosarcoma (20x)

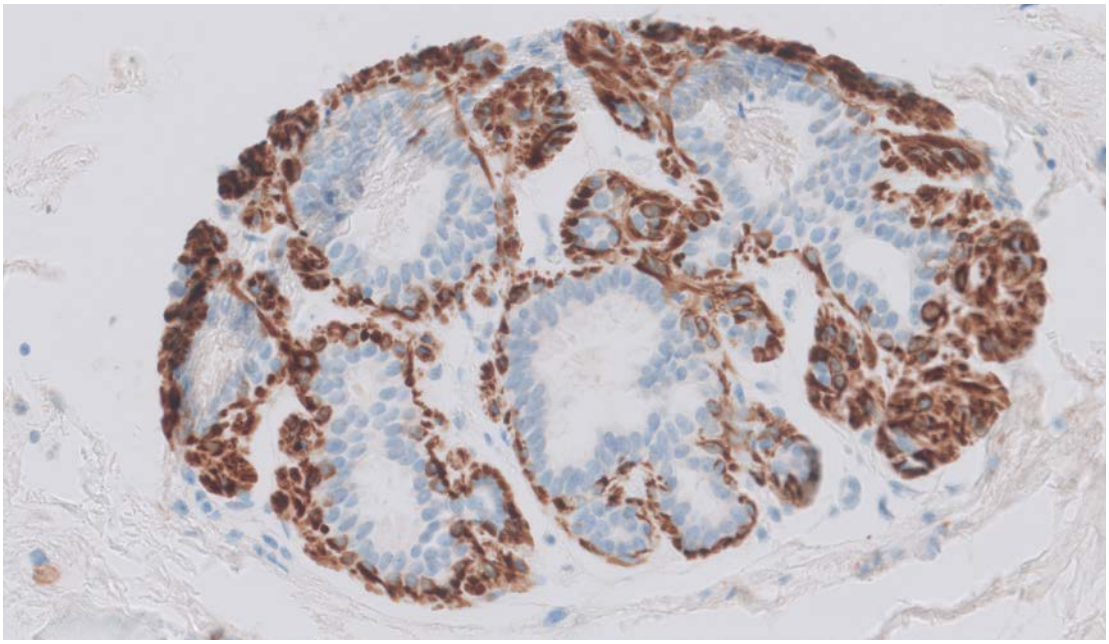
Monoclonal Mouse Anti-Human

Antibody: **Myosin Heavy Chain (Smooth Muscle)**

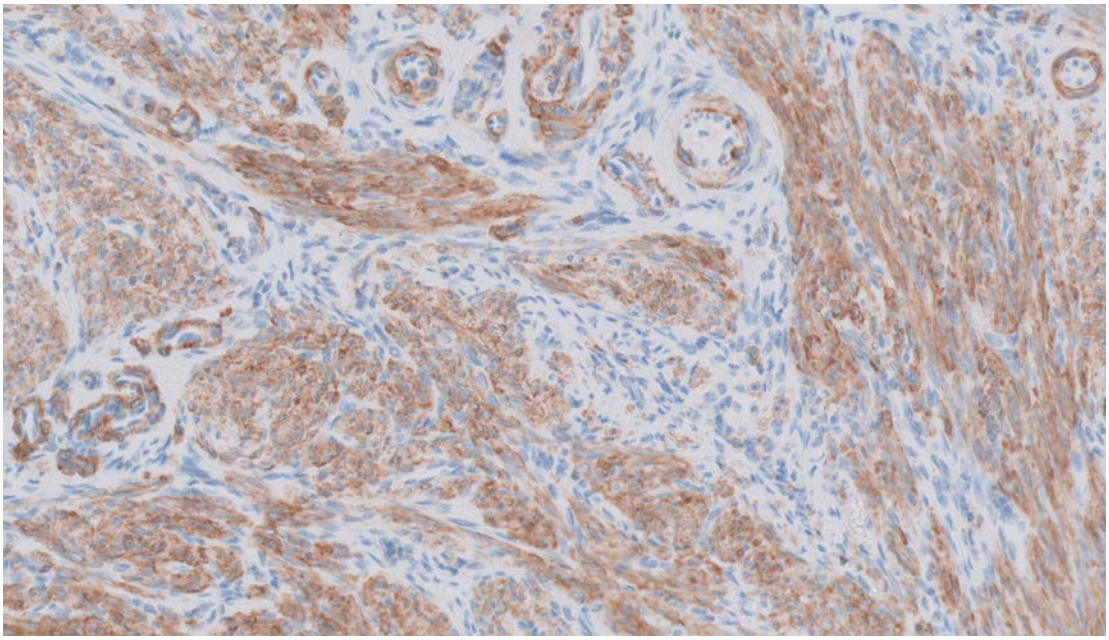
Clone: SMMS-1

Code: IR066

Reaction Location	Cytoplasm	
Quality Control	**Breast**	**Uterus**
High Expression	Myoepithelial show a moderate to strong staining reaction.	NA
Low Expression	Smooth muscle cells of small vessels show a weak to moderate staining reaction.	Smooth muscle cells of the myometrium show a weak to moderate staining reaction.
Non-expression	Epithelial cells	NA



Breast (20x)



Uterus (20x)

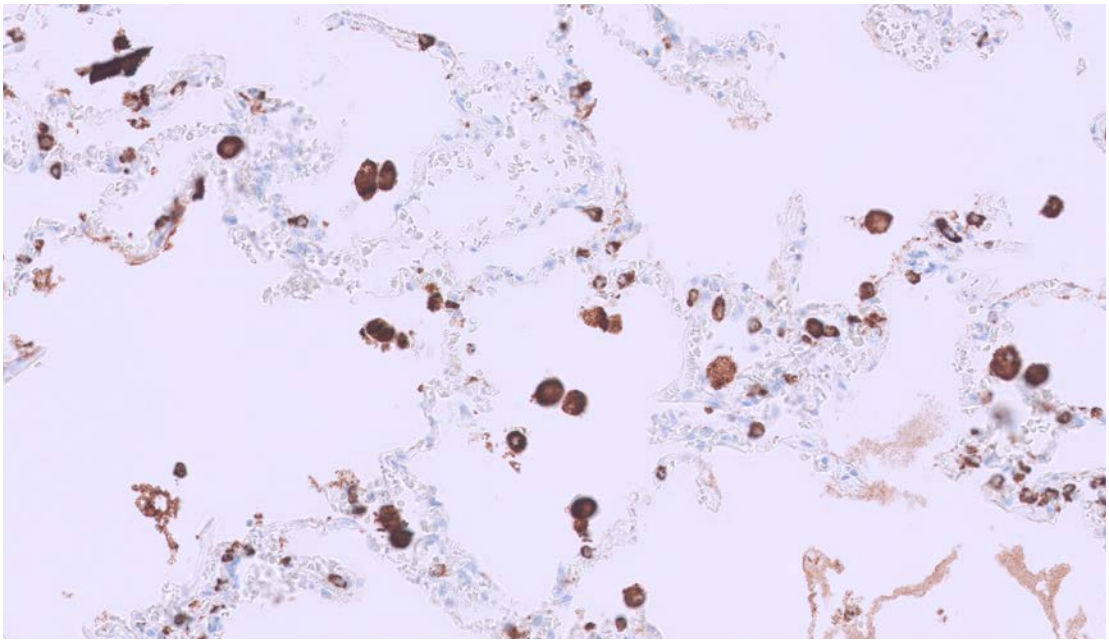
Monoclonal Mouse Anti-Human

Antibody: **Napsin A**

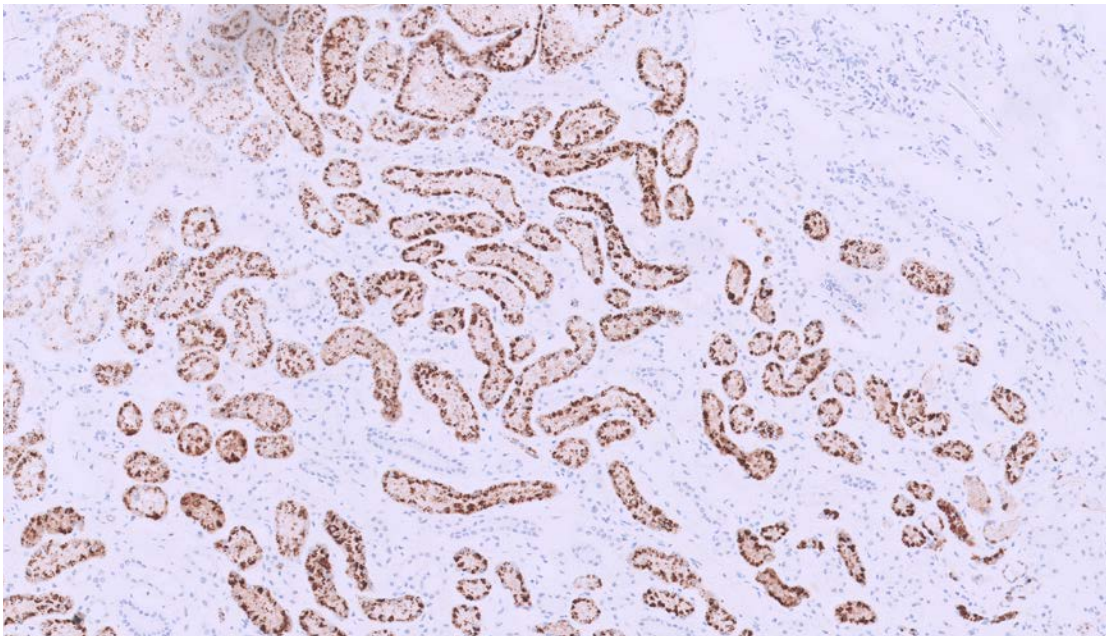
Clone: DAK-NapA

Code: GA790

Reaction Location	Cytoplasm, granular	
Quality Control	**Lung**	**Kidney**
High Expression	Type II pneumocytes and alveolar macrophages show a moderate to strong granular cytoplasmic staining reaction.	NA
Low Expression	NA	Virtually all epithelial cells of the proximal tubules show a moderate to strong distinct, granular cytoplasmic staining reaction.
Non-expression	NA	NA



Lung (20x)



Kidney (5x)

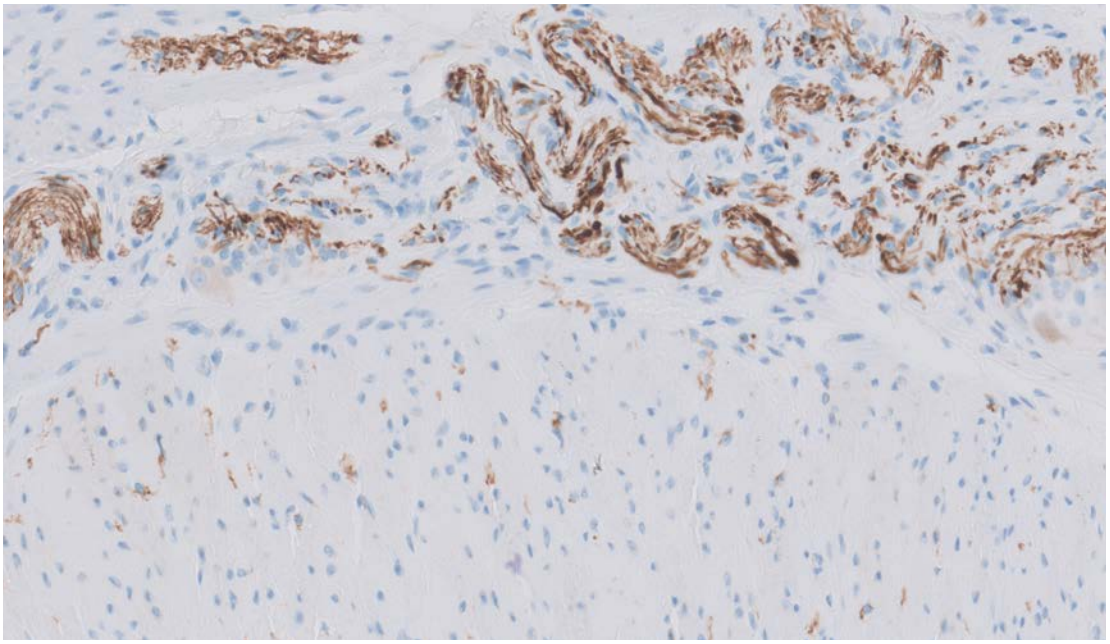
Monoclonal Mouse Anti-Human

Antibody: **Neurofilament Protein**

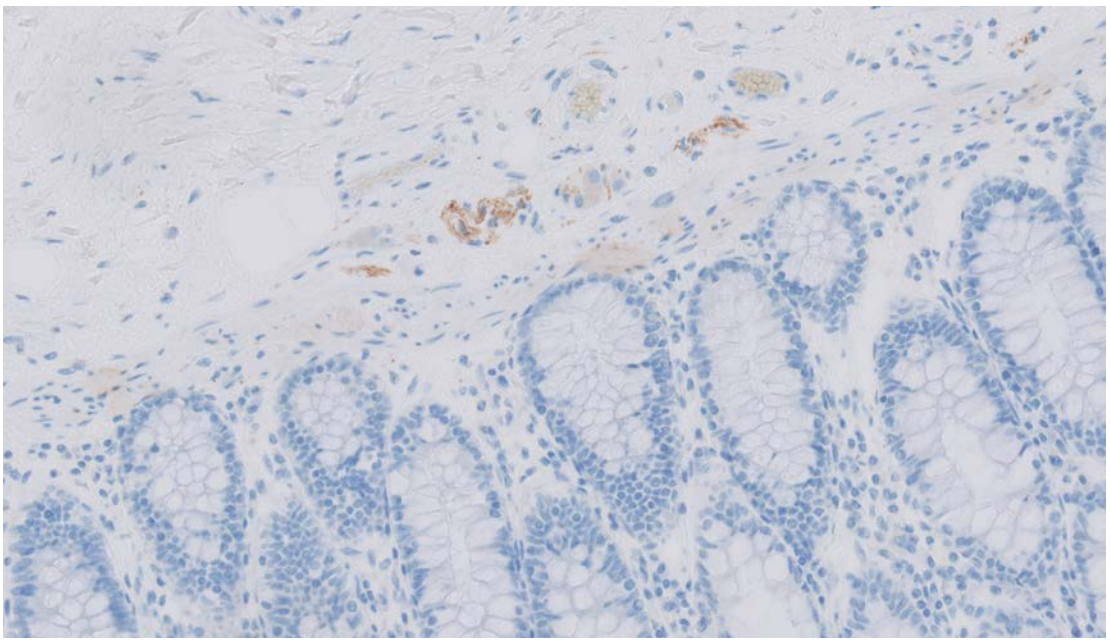
Clone: 2F11

Code: GA607

Reaction Location	Cytoplasm
Quality Control	**Colon/Appendix**
High Expression	Large axons and ganglion cells in Auerbach's plexus show a moderate to strong staining reaction.
Low Expression	Isolated axons in the muscularis externa show a weak to moderate staining reaction.
Non-expression	Smooth muscle cells and epithelium



Colon (20x)



Colon (20x)

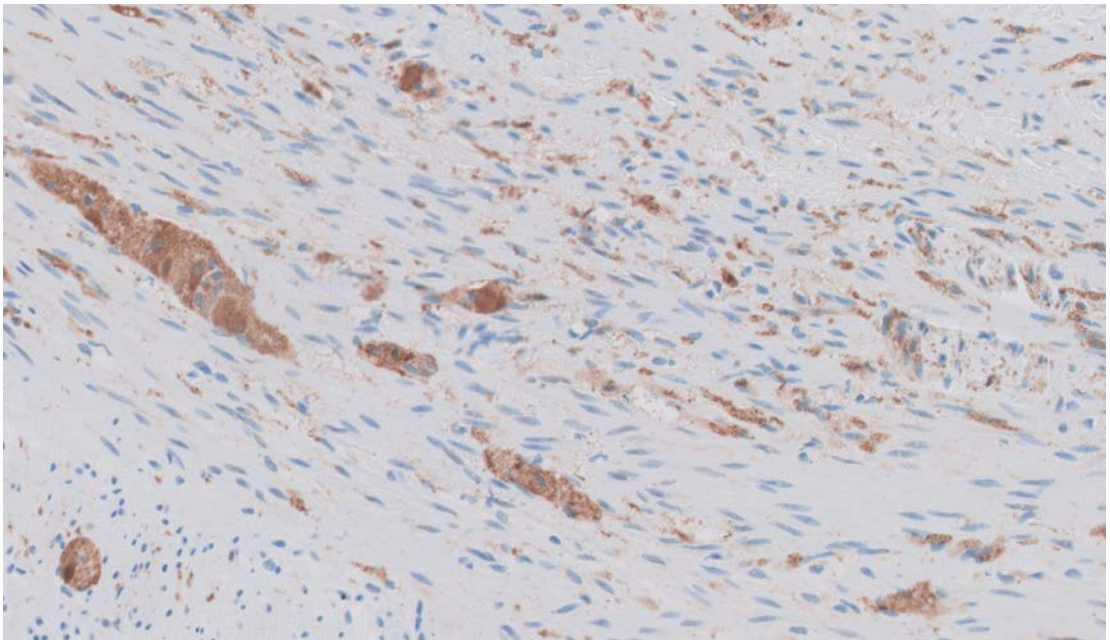
Monoclonal Mouse Anti-Human

Antibody: **Neuron-Specific Enolase**

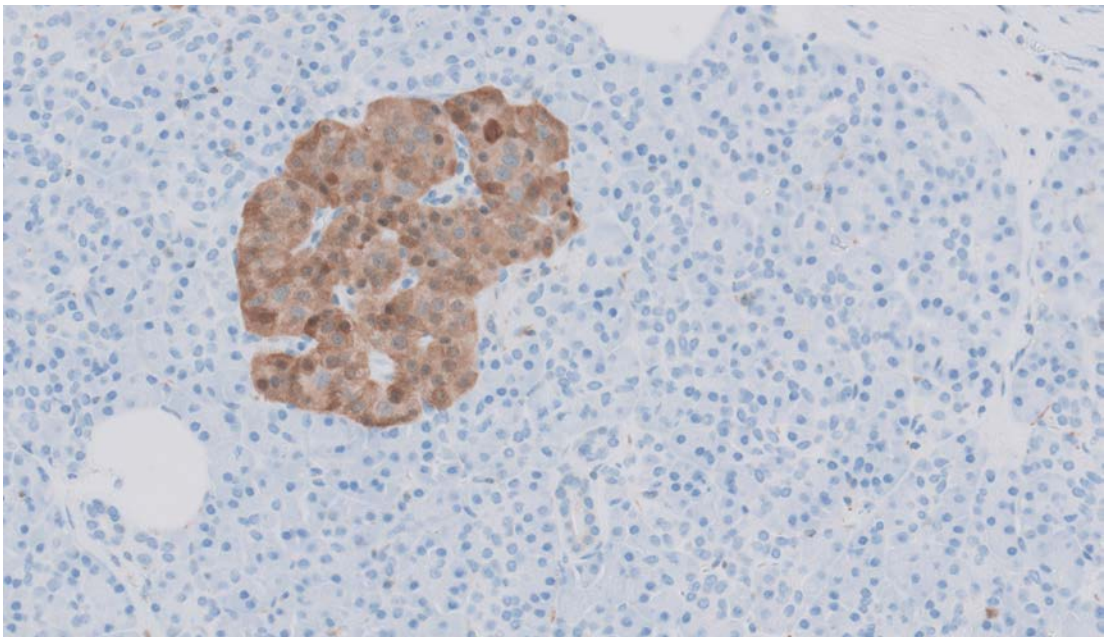
Clone: BBS/NC/VI-H14

Code: IR612

Reaction Location	Nucleus and cytoplasm	
Quality Control	**Colon/Appendix**	**Pancreas**
High Expression	Ganglion cells of the Auerbach's plexus show a moderate to strong cytoplasmic and nuclear staining reaction.	Langerhans' islets and single neuroendocrine cells in the pancreatic ducts show a moderate to strong granular cytoplasmic and nuclear staining reaction.
Low Expression	Isolated axons in the muscularis externa show a weak to moderate cytoplasmic staining reaction.	NA
Non-expression	Epithelial cells	NA



Appendix (20x)



Pancreas (20x)

Monoclonal Mouse Anti-Human

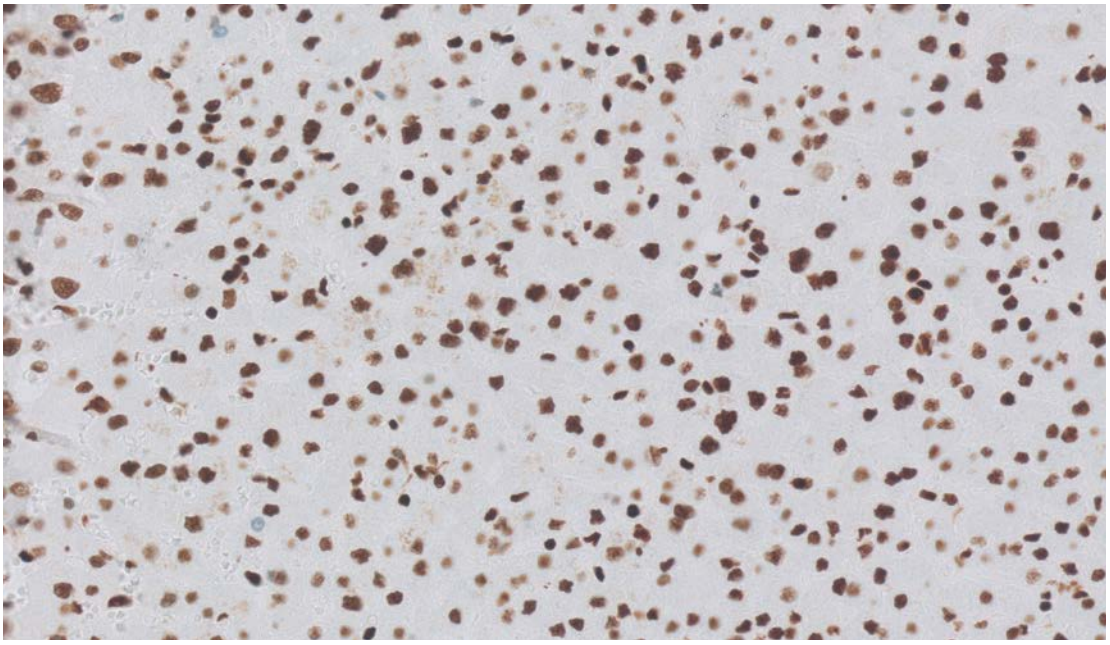
Antibody: **Nucleophosmin**

Clone: 376

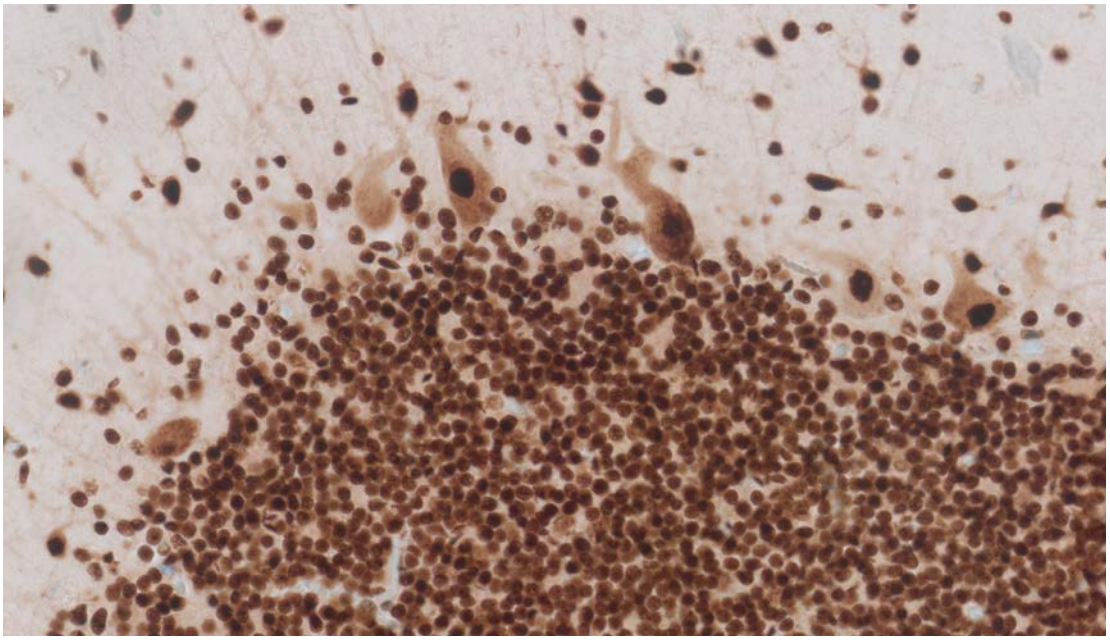
Code: GA652

Reaction Location	Nucleus and cytoplasm	
Quality Control	**Liver**	**Brain**
High Expression	The vast majority of hepatocytes show a moderate to strong nuclear staining reaction.	Normal neurons show a moderate to strong distinct nuclear staining reaction.
Low Expression	Scattered mitotic and post-mitotic cells show a weak to moderate cytoplasmic and nuclear staining reaction.	Large Purkinje cells and some small neurons show a weak to moderate cytoplasmic staining reaction.
Non-expression	NA	NA

Note: Some nuclei in liver and brain are negative.



Liver (20x)



Brain (20x)

Monoclonal Mouse Anti-Human

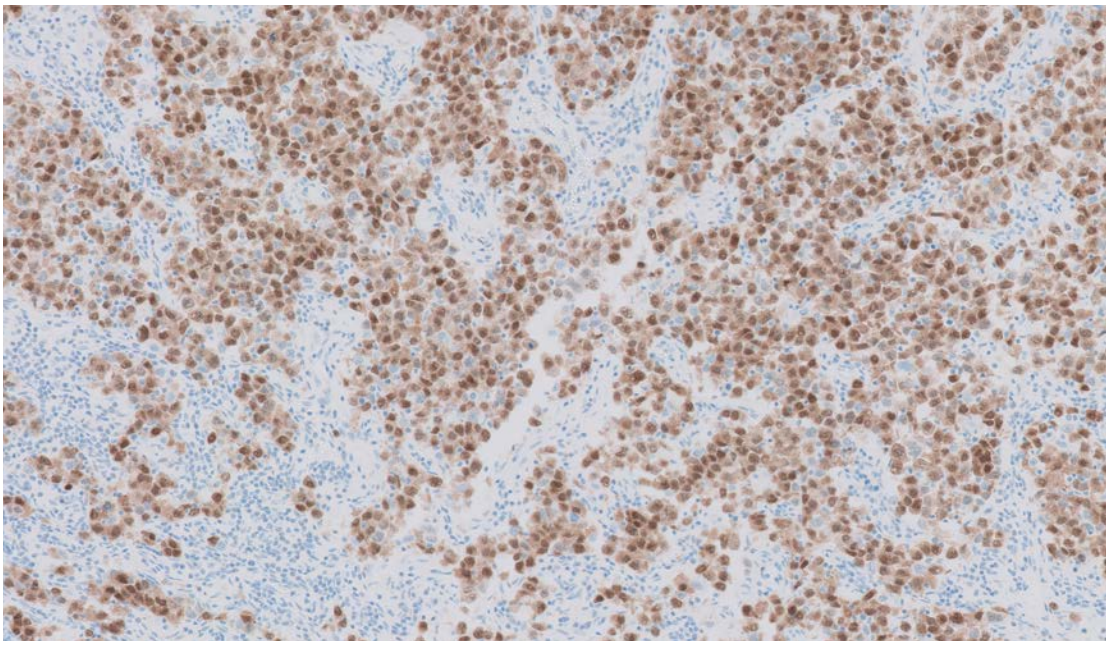
Antibody: **Octamer-Binding Transcription Factor 3/4**

Clone: N1NK

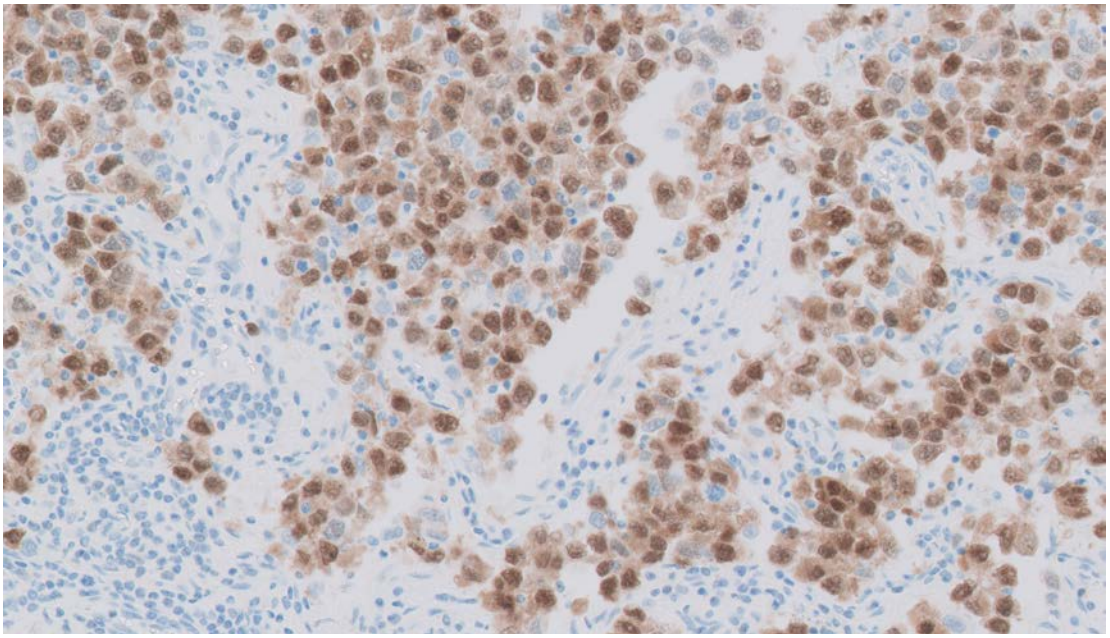
Code: IR092

Reaction Location	Nucleus
Quality Control	**Seminoma**
High Expression	The majority of neoplastic cells show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	Placenta or colon/appendix can serve as negative tissue control showing no nuclear staining reaction.

Note: Weakly positive immunostaining in the cytoplasm of epithelial cells was observed in epithelia of the testis, stomach, and small intestine.



Seminoma (10x)



Seminoma (20x)

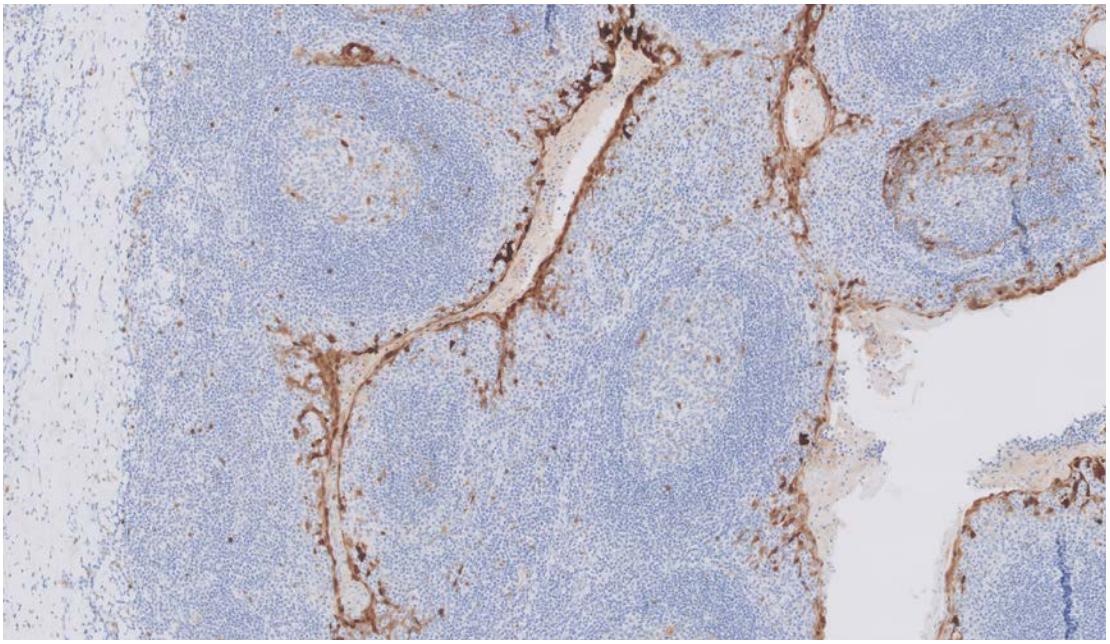
Monoclonal Mouse Anti-Human

Antibody: **p16 Protein**

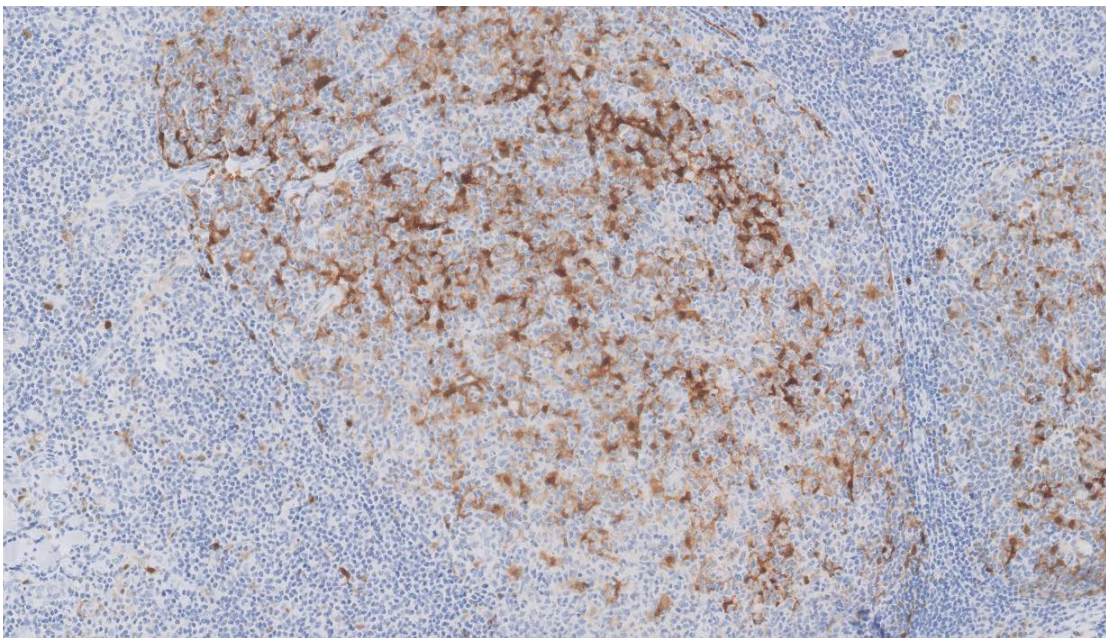
Clone: JC8

Code: GA783

Reaction Location	Cytoplasm and nucleus
Quality Control	**Tonsil**
High Expression	The crypt epithelial cells show a moderate to strong nuclear and cytoplasmic staining reaction.
Low Expression	Follicular dendritic cells in the germinal centers must show at least a moderate nuclear and cytoplasmic staining reaction.
Non-expression	NA



Tonsil (20x)



Tonsil (10x)

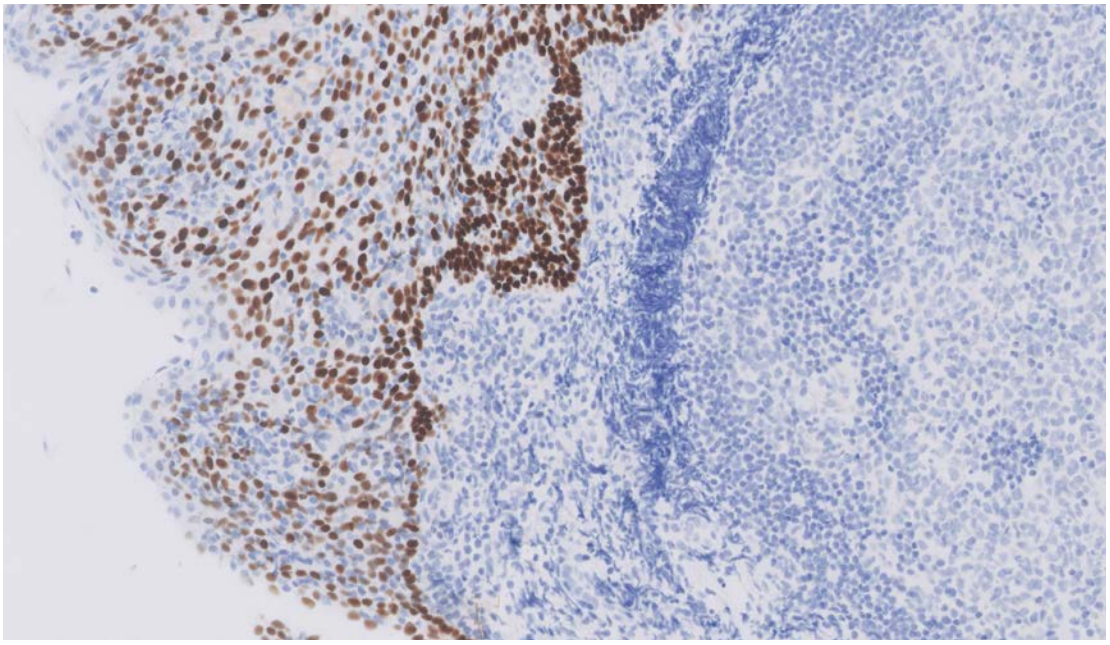
Monoclonal Rabbit Anti-Human

Antibody: **p40 Protein**

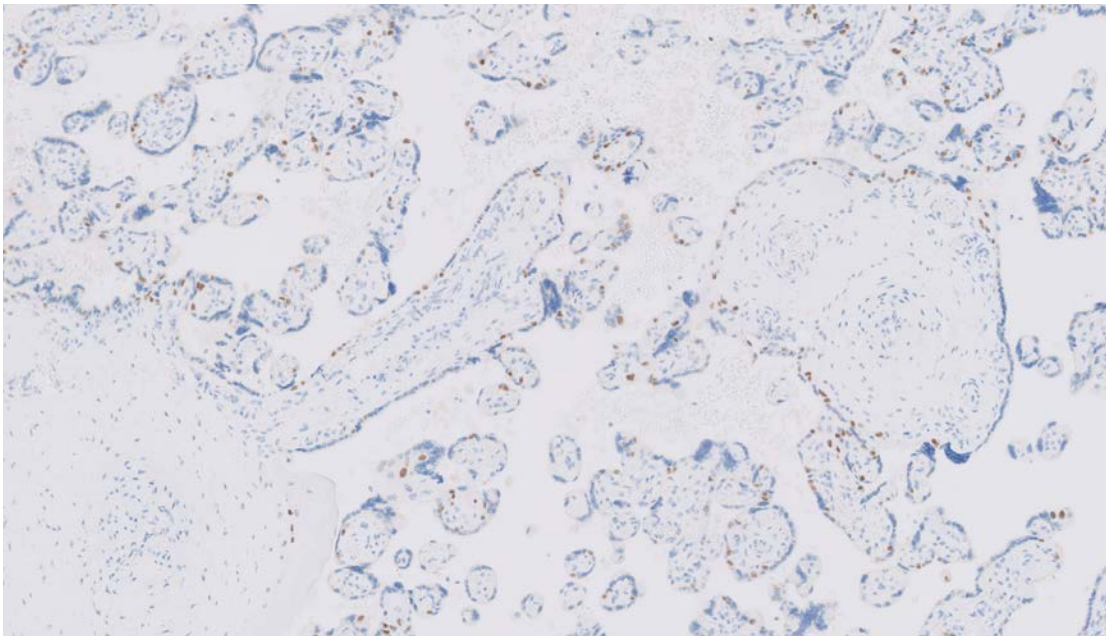
Clone: DAK-p40

Code: GA784

Reaction Location	Nucleus and cytoplasm	
Quality Control	**Tonsil**	**Placenta**
High Expression	Squamous epithelial cells show a moderate to strong nuclear staining reaction.	NA
Low Expression	NA	In placenta, cytotrophoblasts show a weak to moderate nuclear staining reaction, weak cytoplasmic staining may be observed.
Non-expression	NA	NA



Tonsil (20x)



Placenta (10x)

Monoclonal Mouse Anti-Human

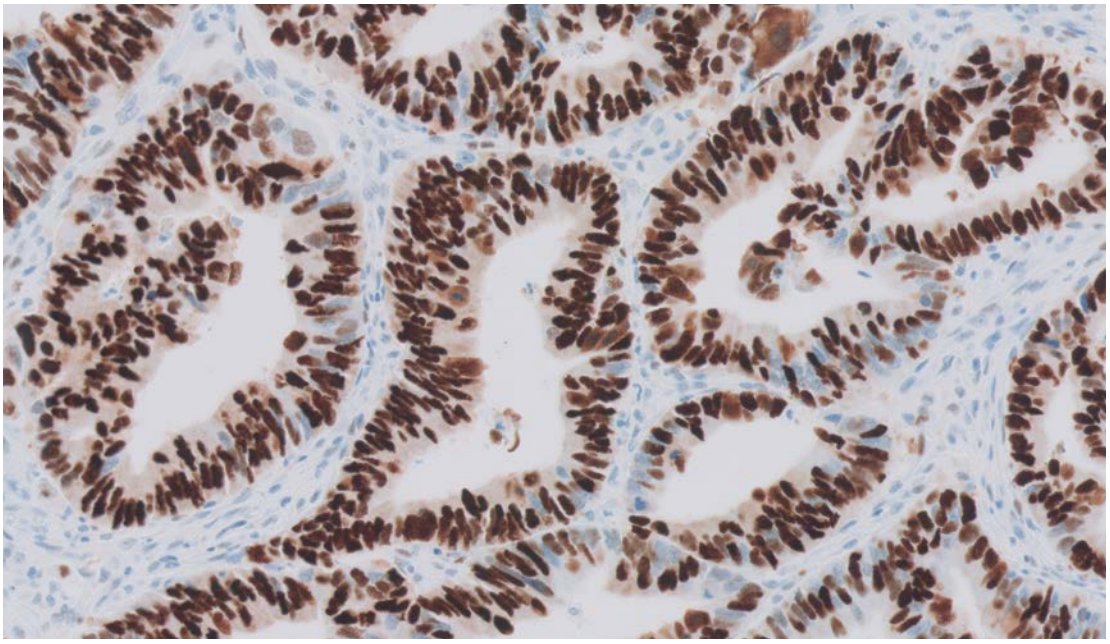
Antibody: **p53 Protein**

Clone: DO-7

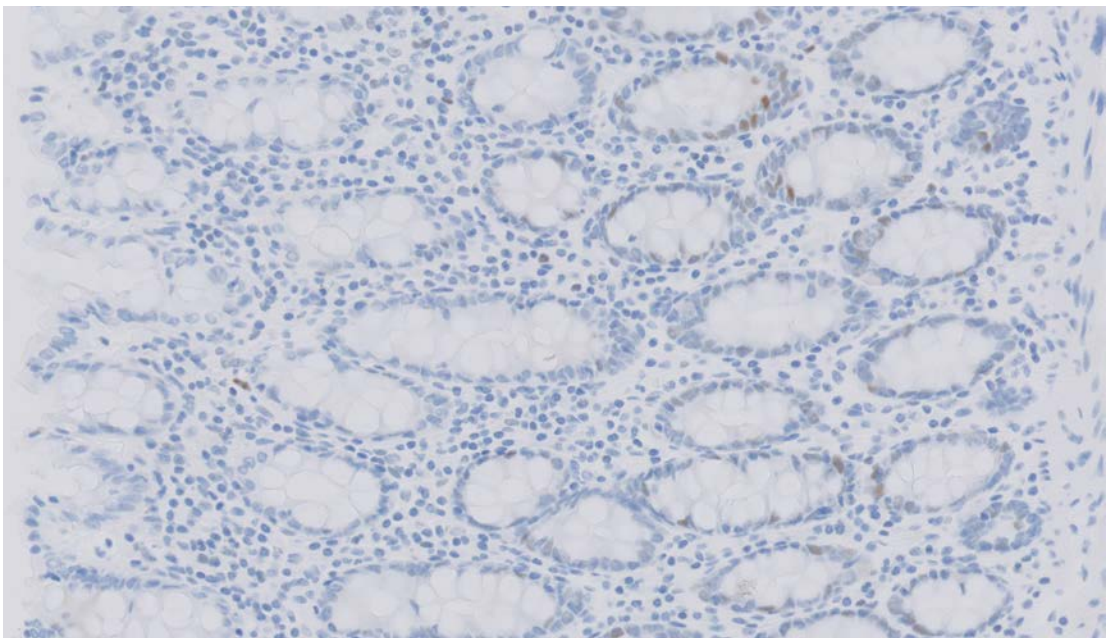
Code: GA616 | IR616

Reaction Location	Nucleus	
Quality Control	**Colon adenocarcinoma**	**Colon/Appendix**
High Expression	Neoplastic cells show a moderate to strong staining reaction.	NA
Low Expression	Scattered benign basal epithelial cells show a weak to moderate staining reaction.	Scattered basal epithelial cells show a weak to moderate staining reaction.
Non-expression	The vast majority of normal epithelial cells.	The vast majority of normal epithelial cells.

Note: Basal cells may show a weak to moderate nuclear staining reaction.



Colon adenocarcinoma (20x)



Colon (20x)

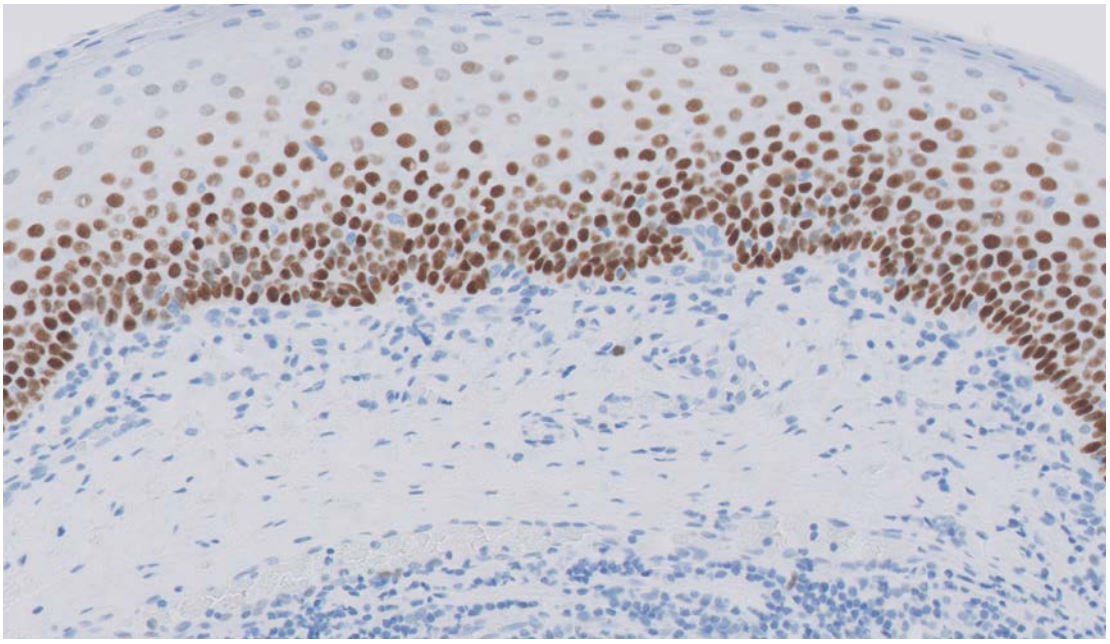
Antibody: Monoclonal Mouse Anti-Human **p63 Protein**

Clone: DAK-p63

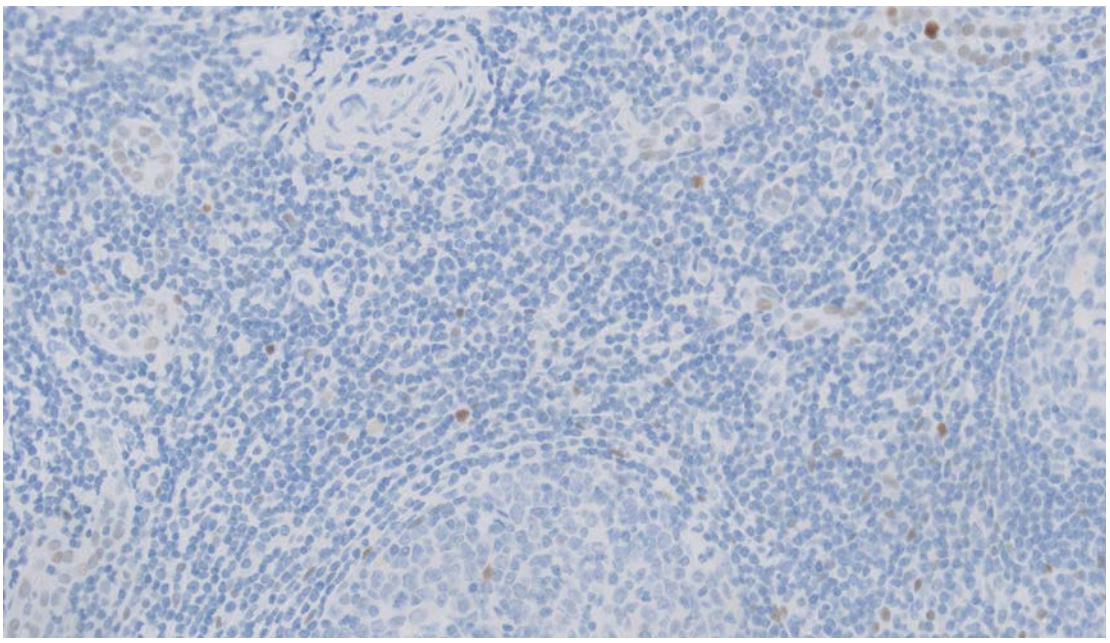
Code: GA662 | IR662

Reaction Location	Nuclear
Quality Control	**Tonsil**
High Expression	Squamous epithelial cells show a moderate to strong staining reaction.
Low Expression	Dispersed lymphocytes and endothelial cells show a weak to moderate staining.
Non-expression	NA

Note: Occasionally, cytoplasmic labeling of granulocytes may be observed.



Tonsil (20x)



Tonsil (20x)

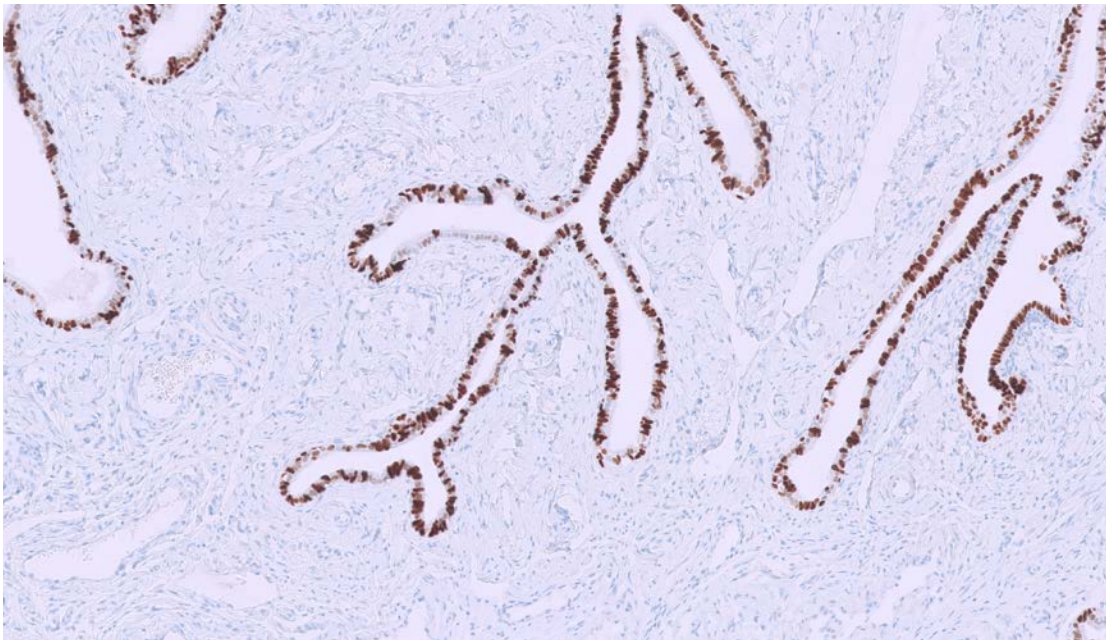
Monoclonal Rabbit Anti-Human

Antibody: **PAX8**

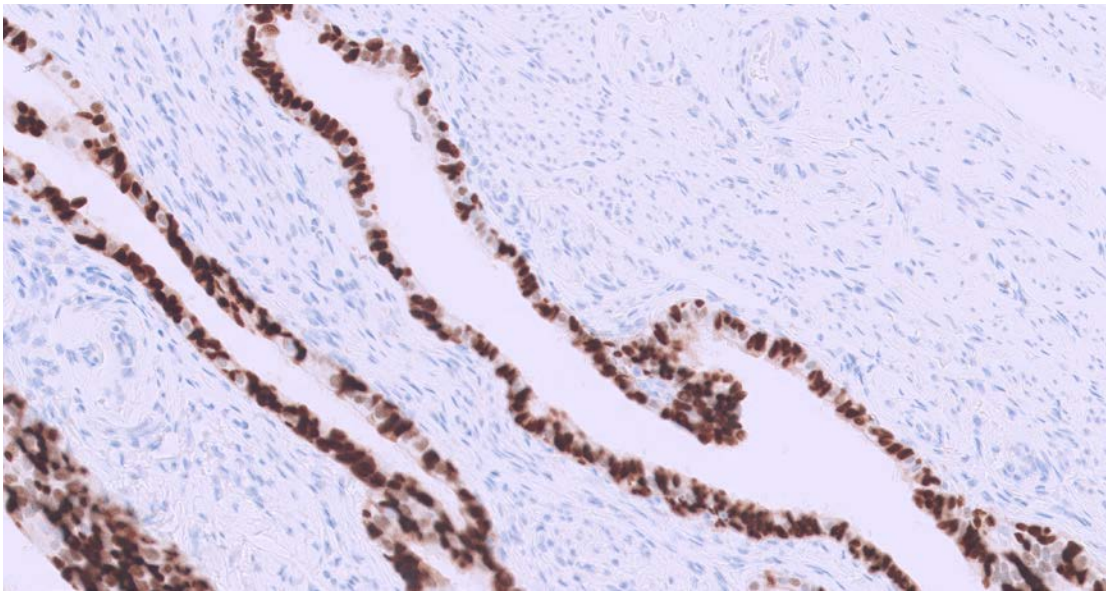
Clone: DAK-PAX8

Code: GA791

Reaction Location	Nucleus
Quality Control	**Fallopian tube**
High Expression	Intercalated secretory epithelial cells show a moderate to strong nuclear staining reaction.
Low Expression	Ciliated epithelial cells show a weak to moderate nuclear staining reaction.
Non-expression	NA



Fallopian tube (10x)



Fallopian tube (20x)

Monoclonal Mouse Anti-Human

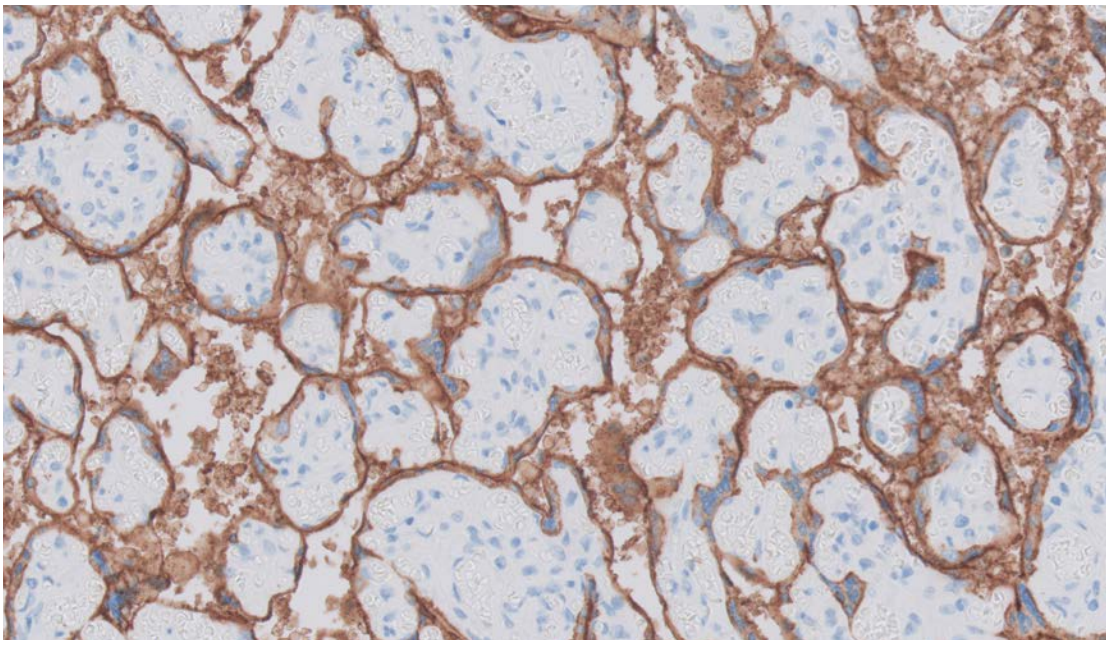
Antibody: **Placental Alkaline Phosphatase**

Clone: 8A9

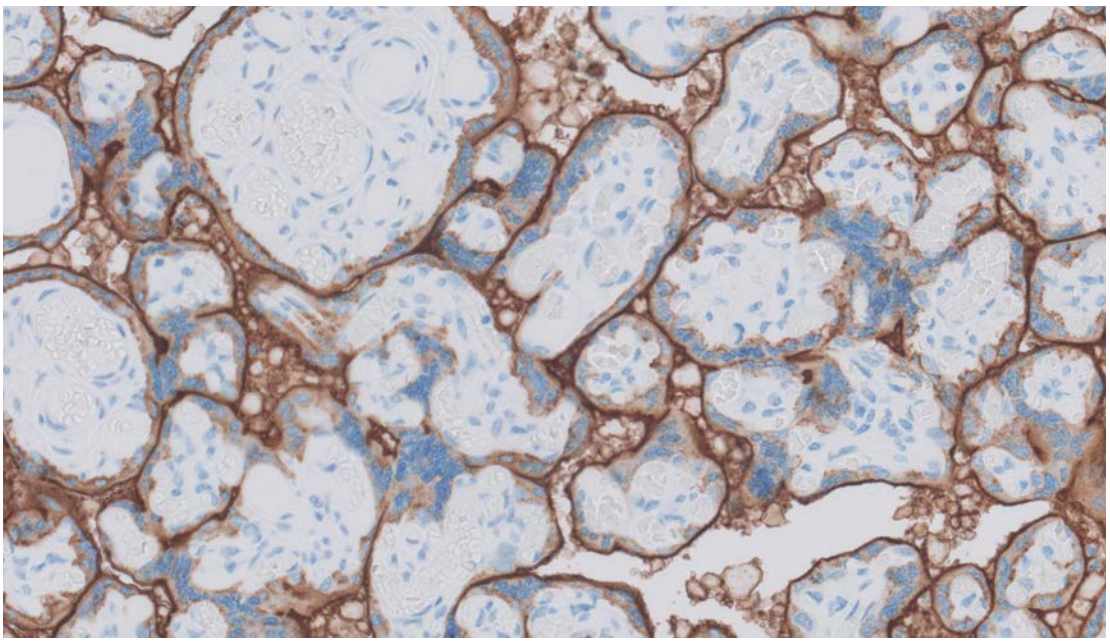
Code: IR779

Reaction Location	Membrane and cytoplasm
Quality Control	**Placenta**
High Expression	The brush border of the syncytiotrophoblast and trophoblast shows a moderate to strong, predominantly membranous, staining reaction.
Low Expression	Cytoplasmic compartment of the syncytiotrophoblast and trophoblast shows a weak to moderate staining reaction.
Non-expression	NA

Note: Some cytoplasmic staining in the smooth muscle cells and myofibroblasts is acceptable.



Placenta (20x)



Placenta (20x)

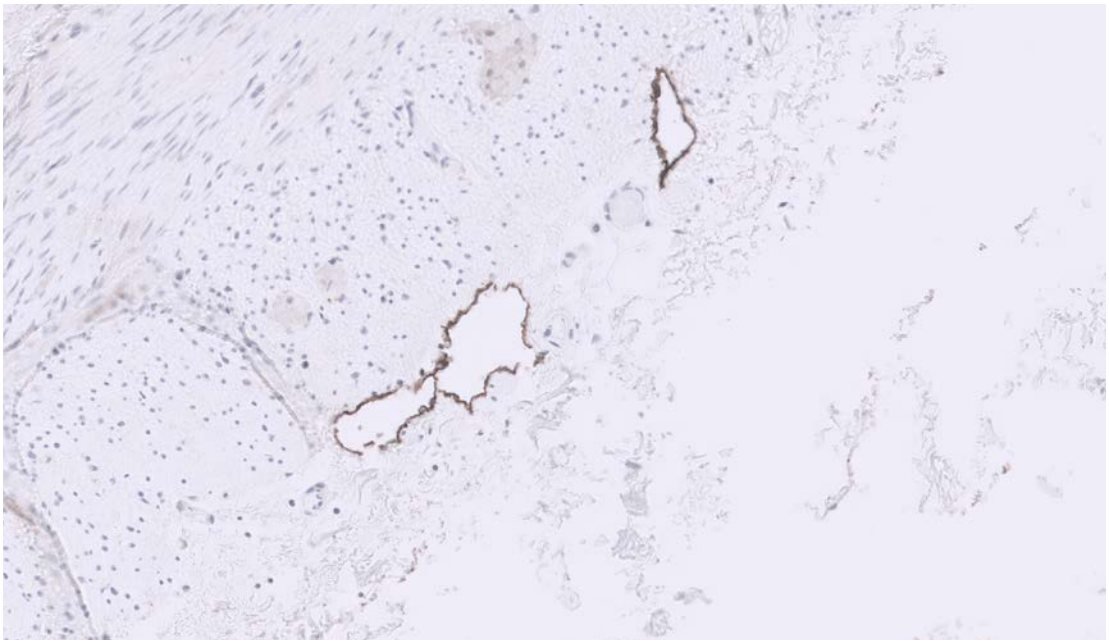
Monoclonal Mouse Anti-Human

Antibody: **Podoplanin**

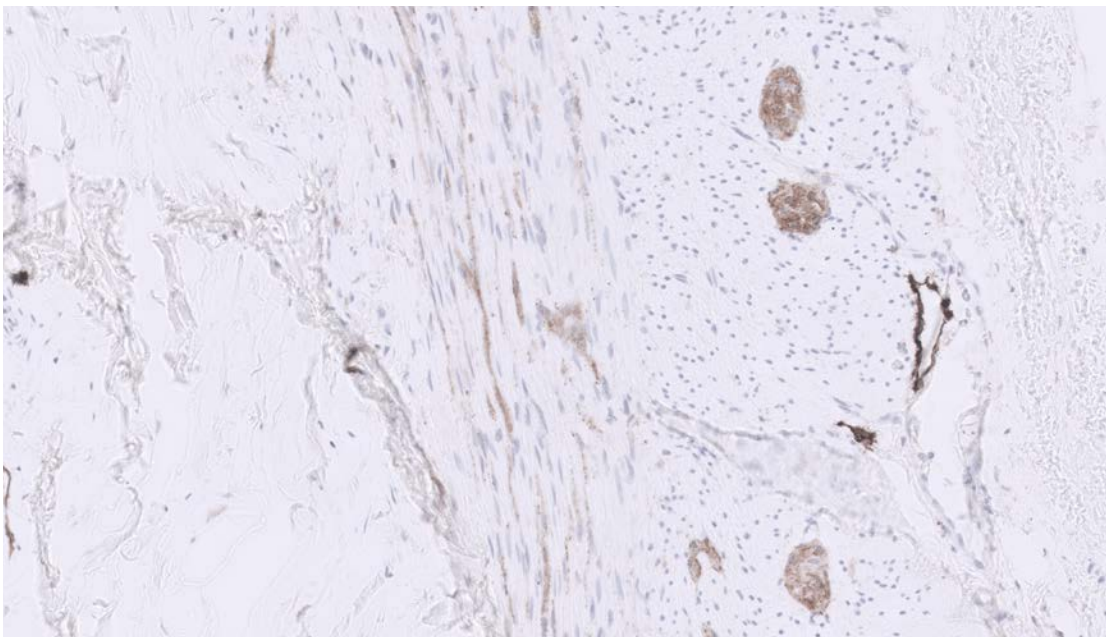
Clone: D2-40

Code: GA072

Reaction Location	Cytoplasm and membrane
Quality Control	**Appendix**
High Expression	Lymphatic endothelial cells show a strong distinct, predominantly cytoplasmic staining reaction.
Low Expression	Schwann cells of the muscularis propria show a weak to moderate distinct, predominantly cytoplasmic staining reaction.
Non-expression	Vascular endothelial cells, columnar epithelial cells, and goblet cells of the mucosa.



Appendix (10x)



Appendix (10x)

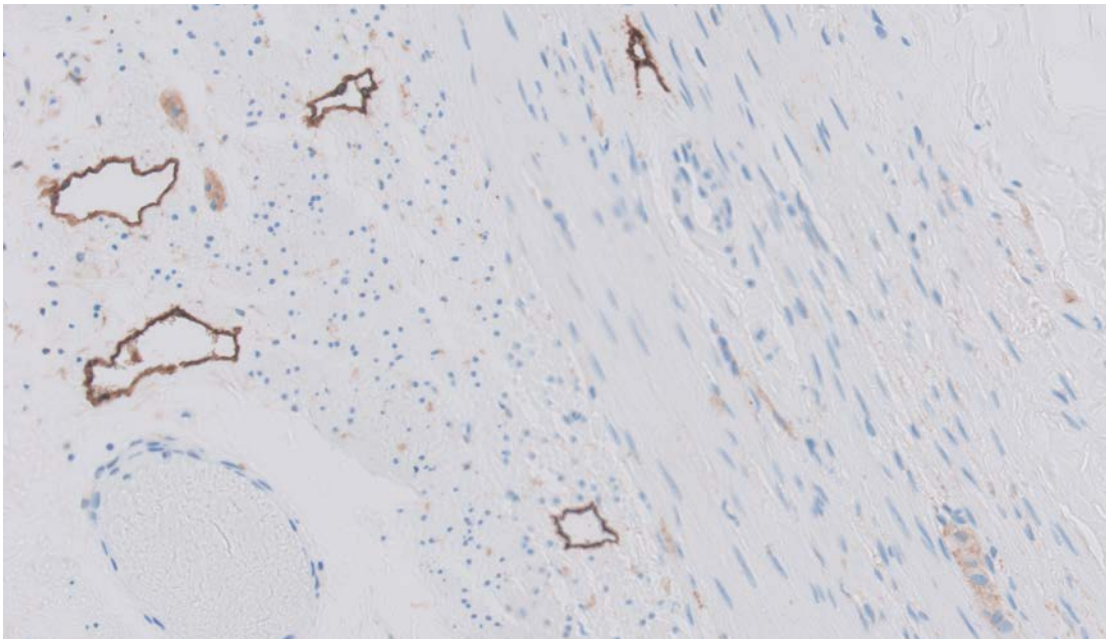
Monoclonal Mouse Anti-Human

Antibody: **Podoplanin**

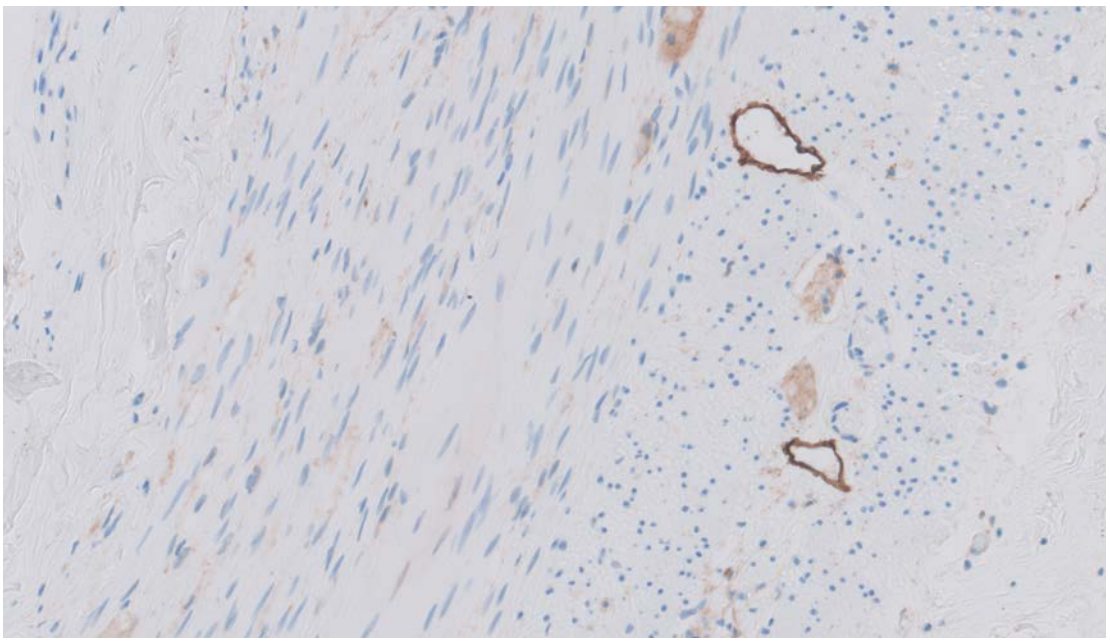
Clone: D2-40

Code: IR072

Reaction Location	Membrane and cytoplasm
Quality Control	**Appendix**
High Expression	Lymphatic endothelial cells show a moderate to strong predominantly cytoplasmic staining reaction.
Low Expression	Cajal cells of the muscularis propria show a weak to moderate predominantly membranous staining reaction.
Non-expression	Vascular endothelial cells



Appendix (20x)



Appendix (20x)

Monoclonal Rabbit Anti-Human

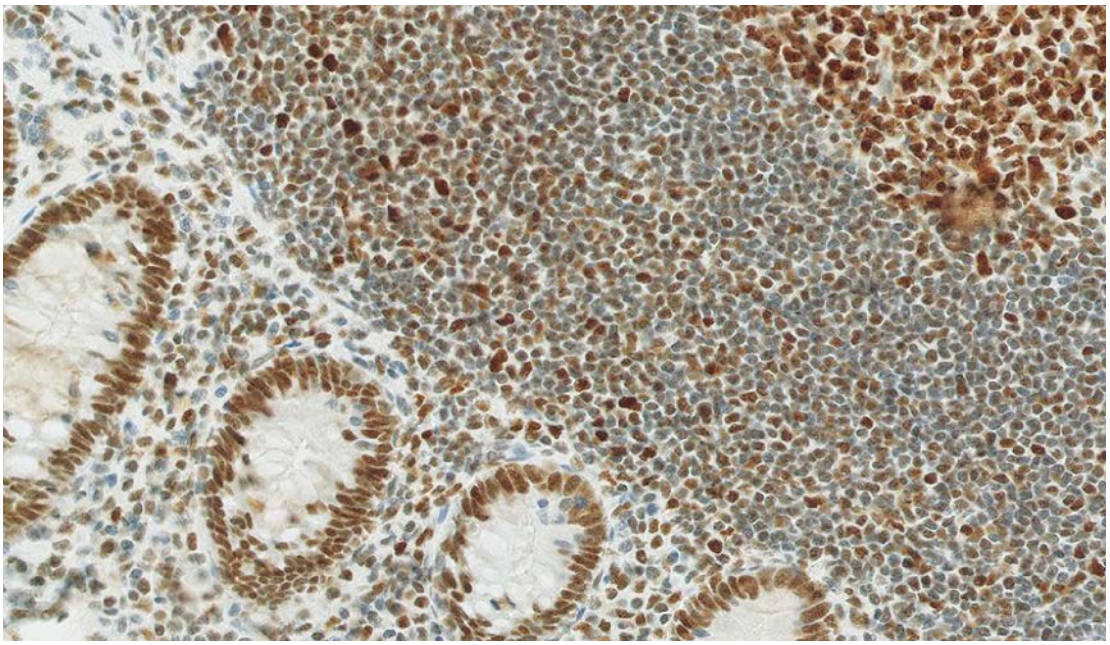
Antibody: **Postmeiotic Segregation Increased 2 (PMS2)**

Clone: EP51

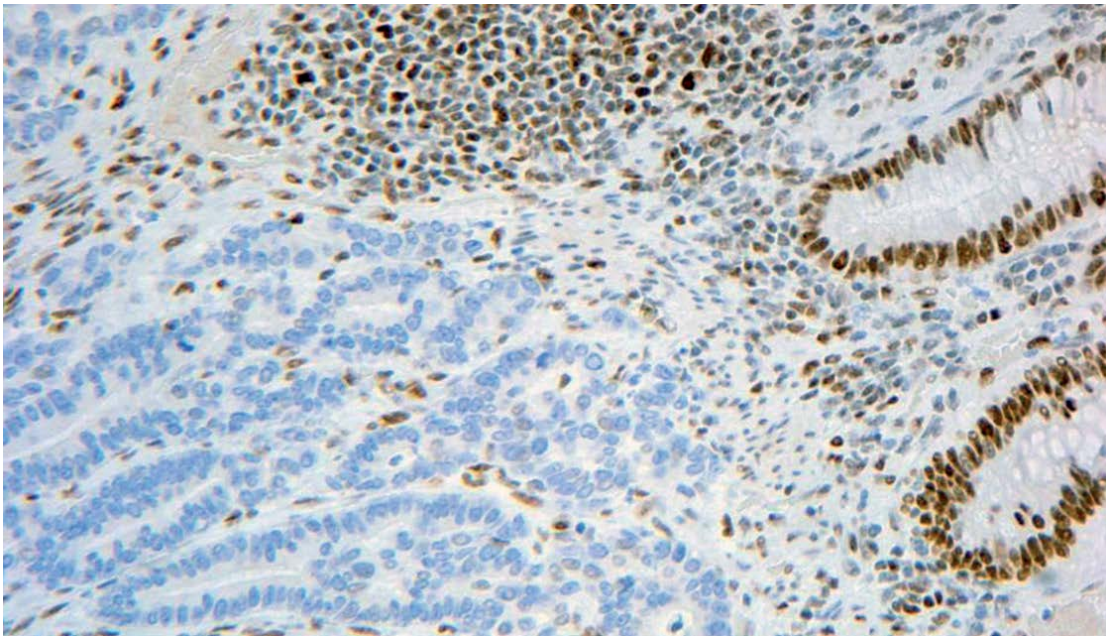
Code: GA087 | IR087

Reaction Location	Nucleus
Quality Control	**Colon/Appendix**
High Expression	Virtually all cells show a distinct nuclear staining reaction. The basal epithelial cells and germinal center cells in lymphoid follicles show a moderate to strong staining reaction.
Low Expression	Luminal epithelial cells and stromal cells should show at least a weak to moderate staining reaction.
Non-expression	NA

Note: Delayed fixation or long term storage of cut sections may reduce staining intensity which may impact interpretation.



Appendix (20x)



Colon adenocarcinoma (20x)

Monoclonal Mouse Anti-Human

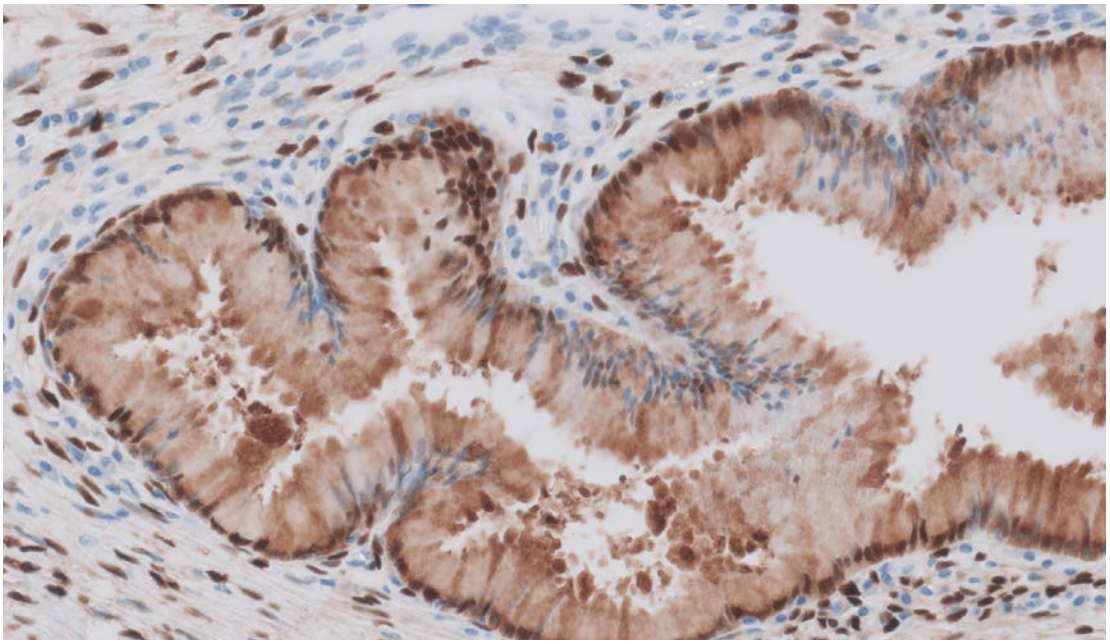
Antibody: **Progesterone Receptor**

Clone: PgR 636

Code: IR068

Reaction Location	Nucleus
Quality Control	**Cervix**
High Expression	Columnar epithelial cells and the stromal cells show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	No staining reaction should be seen in tonsil.

Note: Some cytoplasmic staining is acceptable.



Cervix (20x)

Monoclonal Mouse Anti-Human

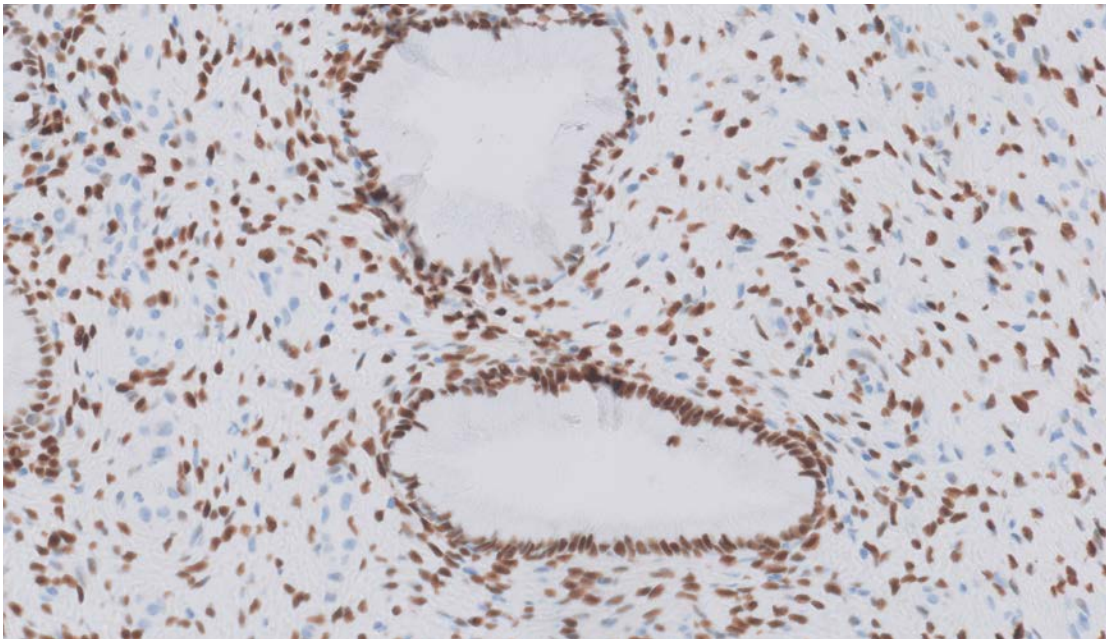
Antibody: **Progesterone Receptor**

Clone: PgR 1294

Code: GA090

Reaction Location	Nucleus
Quality Control	**Cervix**
High Expression	Columnar epithelial cells show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	No nuclear staining reaction should be seen in tonsil.

Note: Not all uterine cervix will show the described staining pattern. Cytoplasmic labeling, if observed, should be regarded as non-specific.



Cervix (20x)

Monoclonal Mouse Anti-Human

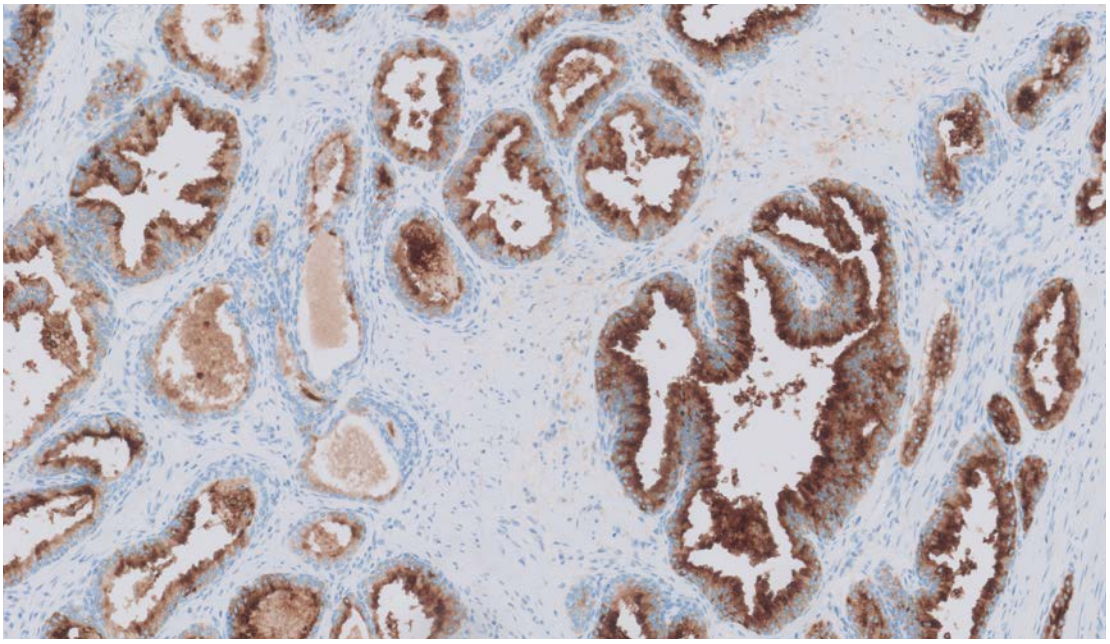
Antibody: **Prostate-Specific Membrane Antigen**

Clone: 3E6

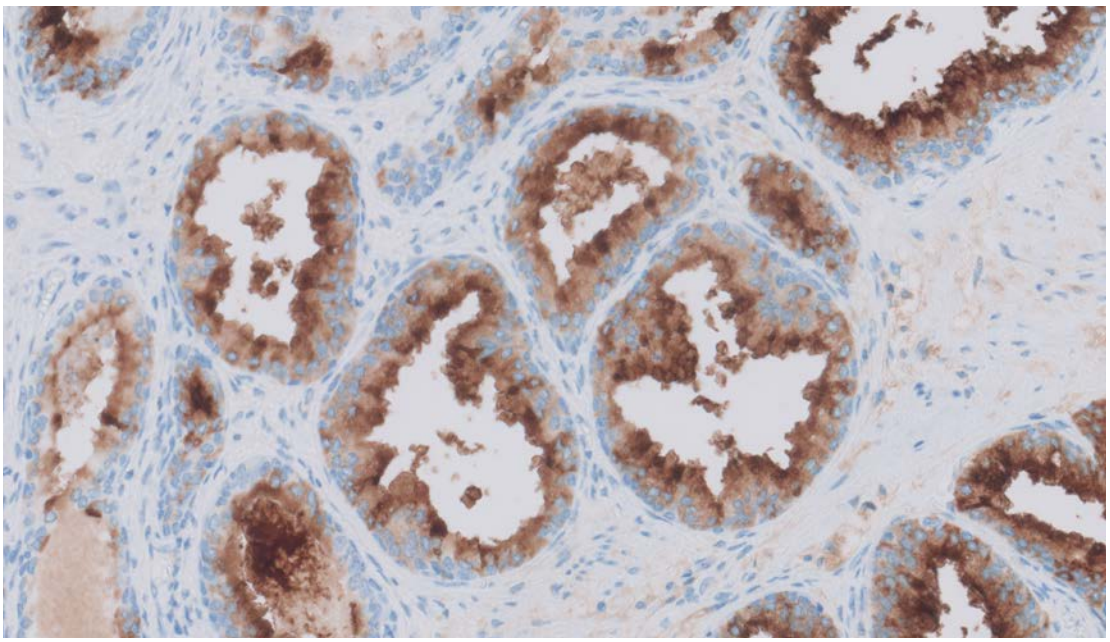
Code: IR089

Reaction Location	Cytoplasm and/or membrane
Quality Control	**Prostate**
High Expression	Columnar epithelial cells show a moderate to strong staining reaction.
Low Expression	NA
Non-expression	NA

Note: Prostate-specific membrane antigen may also be expressed in a subset of non-prostatic tissues



Prostate (10x)



Prostate (20x)

Monoclonal Mouse Anti-Human

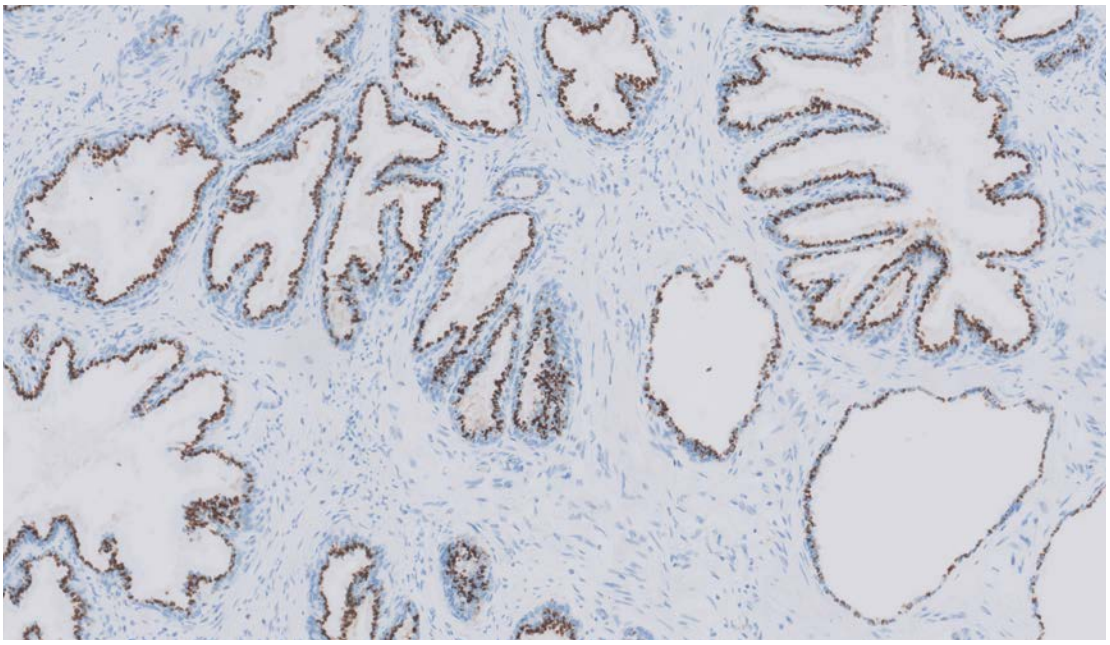
Antibody: **Prostein**

Clone: 10E3

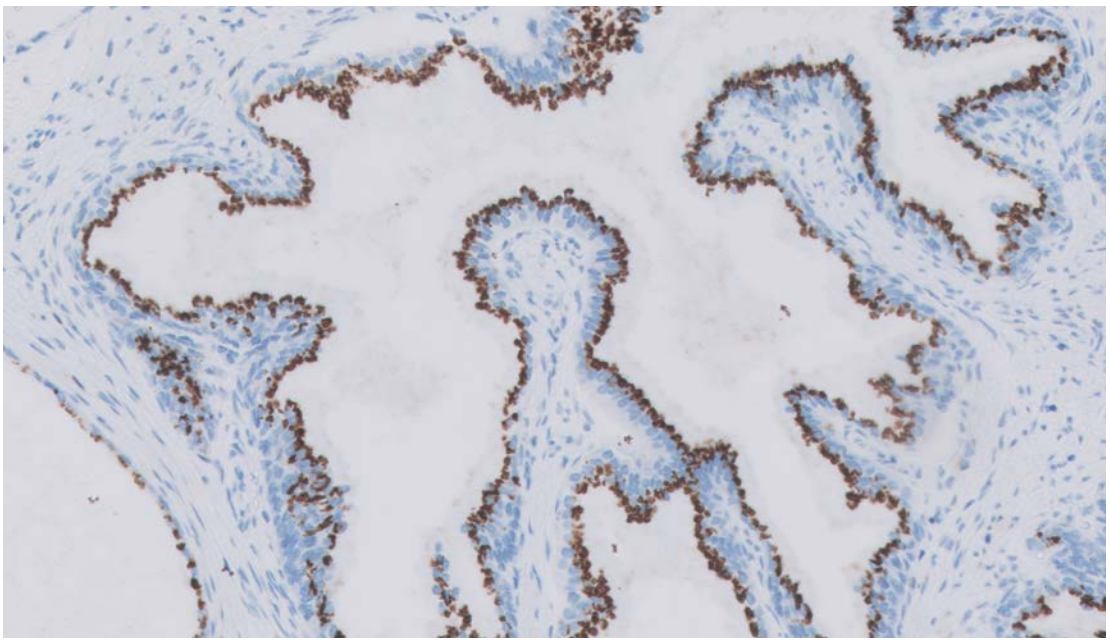
Code: IR088

Reaction Location	Cytoplasm
Quality Control	**Prostate**
High Expression	Columnar epithelial cells show a moderate to strong granular staining reaction.
Low Expression	NA
Non-expression	All other cells in prostate.

Note: Prostein expression has not been detected in other normal or malignant glandular tissues with the exception of few urothelial carcinomas.



Prostate (10x)



Prostate (20x)

Monoclonal Mouse Anti-Human

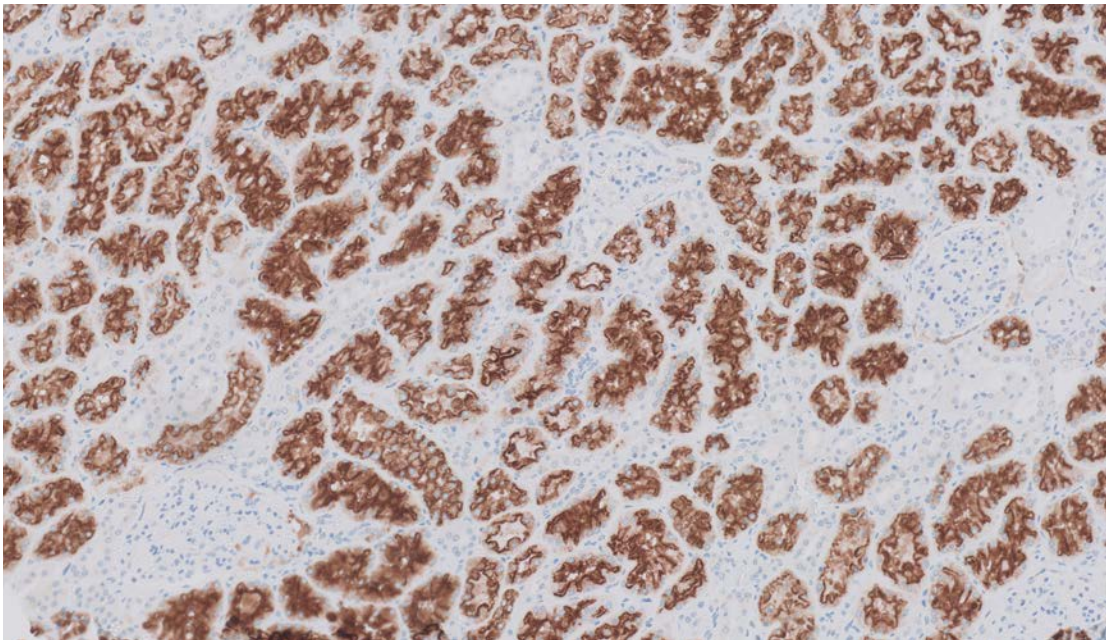
Antibody: **Renal Cell Carcinoma Marker**

Clone: SPM314

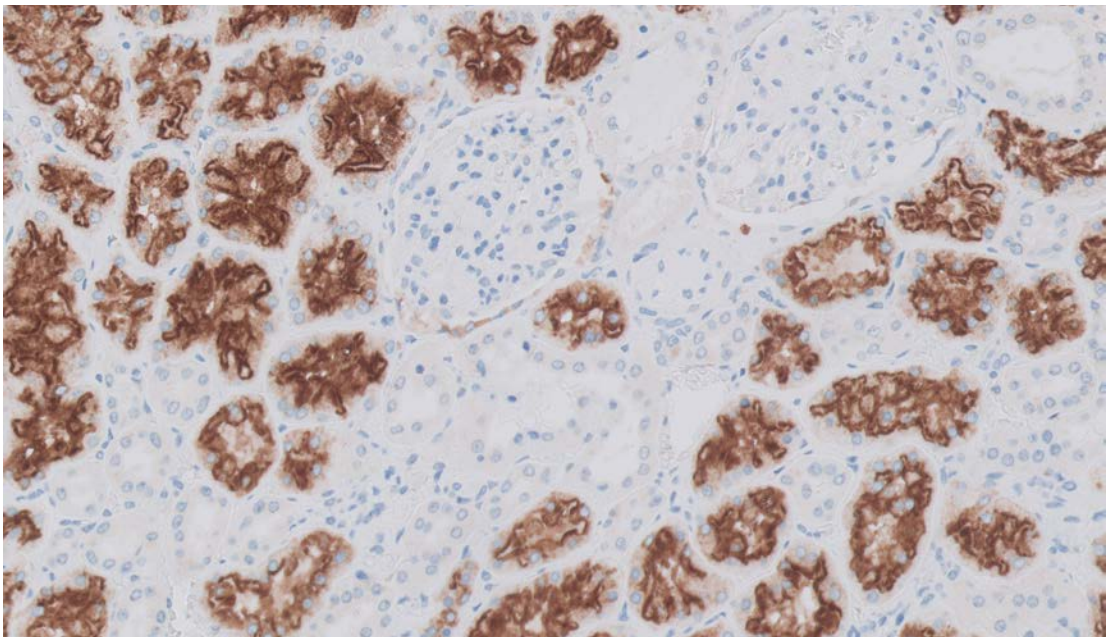
Code: GA075

Reaction Location	Membrane
Quality Control	**Kidney**
High Expression	Epithelial cells of the proximal tubules show a moderate to strong, predominantly membranous, staining reaction.
Low Expression	Epithelial cells in focal areas of the Bowman's capsule show weak to moderate staining reaction.
Non-expression	NA

Note: Cytoplasmic staining may be observed.



Kidney (10x)



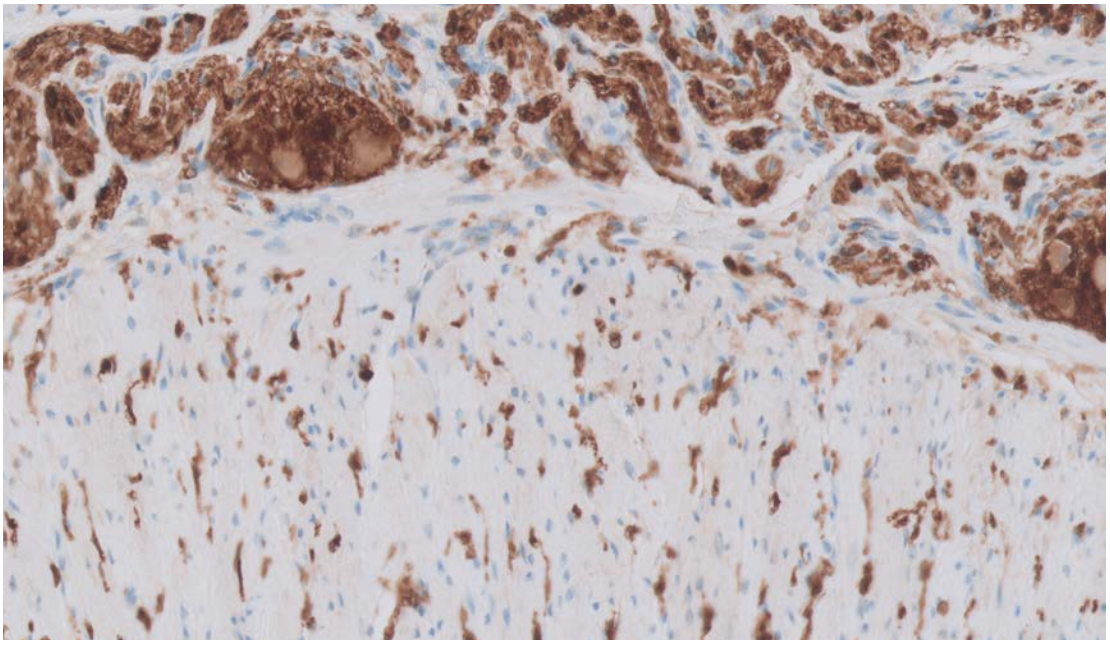
Kidney (20x)

Antibody: Polyclonal Rabbit Anti-**S100**

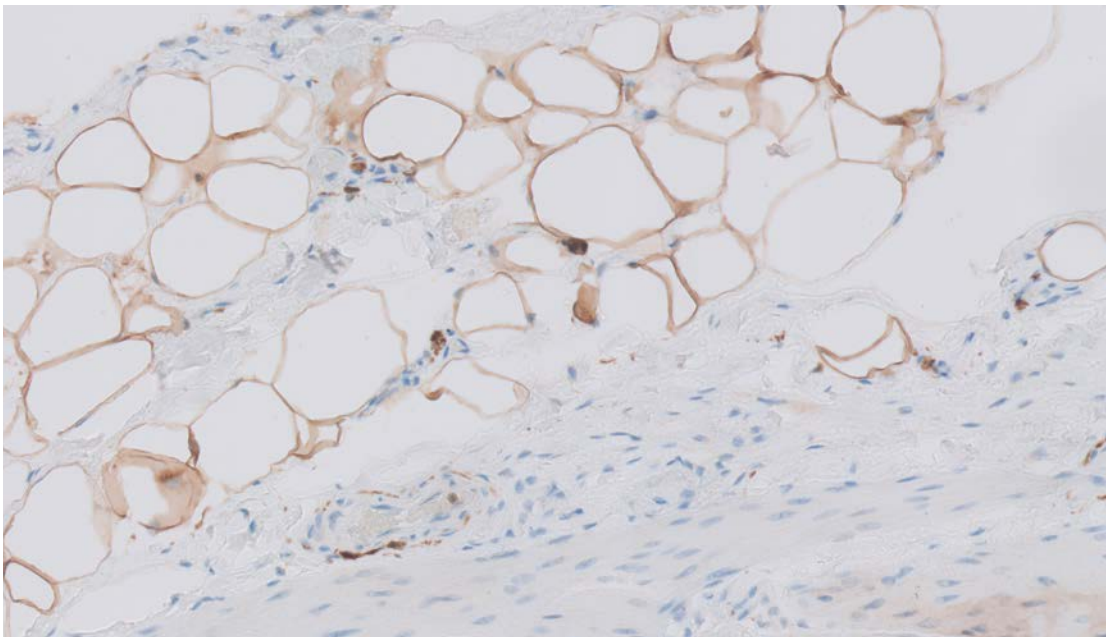
Clone: Polyclonal

Code: GA504 | IR504

Reaction Location	Nucleus and cytoplasm
Quality Control	**Colon/Appendix**
High Expression	Satellite and Schwann cells of the peripheral nerves in Auerbach's plexus show a moderate to strong staining reaction.
Low Expression	Adipocytes show a weak to moderate staining reaction.
Non-expression	Epithelial and smooth muscle cells



Colon (20x)



Colon (20x)

Monoclonal Mouse Anti-Human

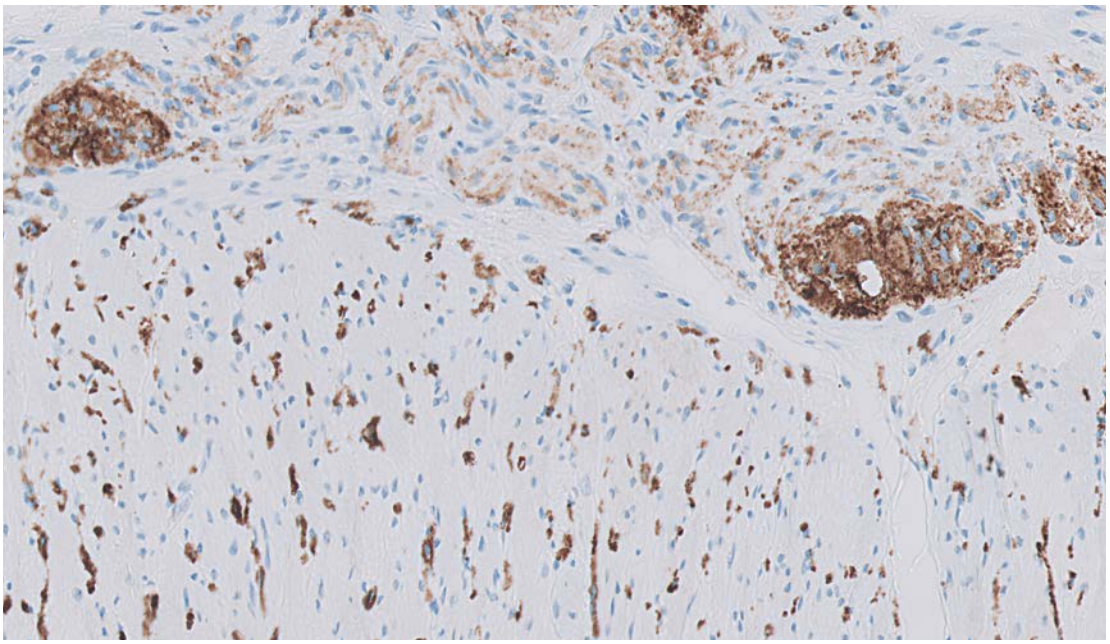
Antibody: **Synaptophysin**

Clone: DAK-SYNAP

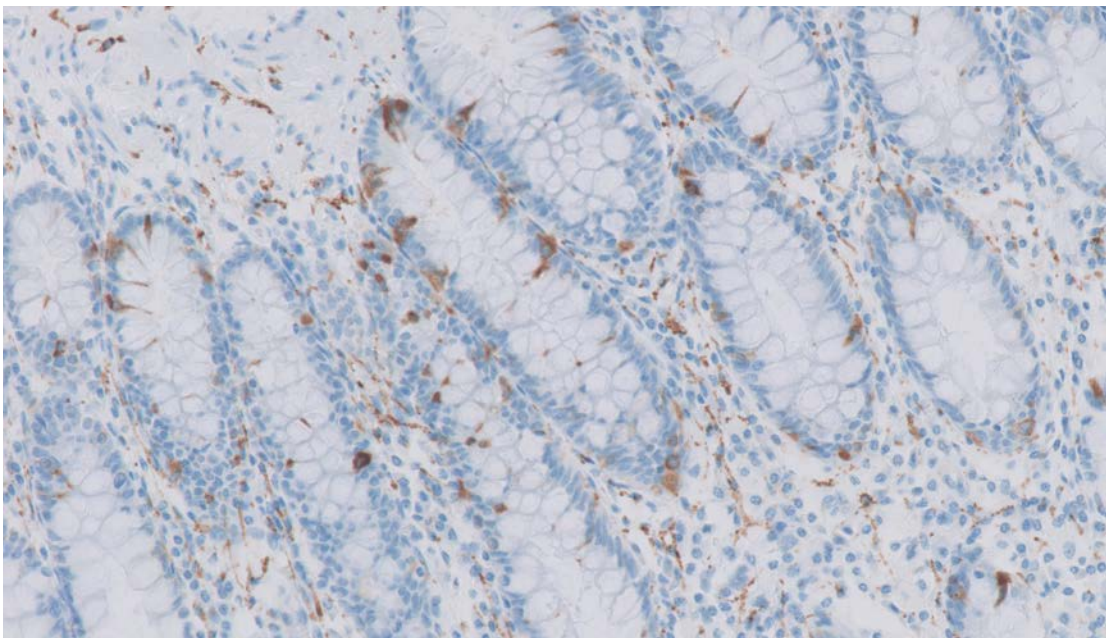
Code: GA660 | IR660

Reaction Location	Cytoplasm
Quality Control	**Colon/Appendix**
High Expression	Peripheral nerves in the tunica muscularis show a moderate to strong staining reaction.
Low Expression	Endocrine cells in the epithelial surface show a weak to moderate staining reaction.
Non-expression	Epithelial cells

Note: Occasionally, cytoplasmic labeling of goblet cells in colon and small intestine can be observed.



Colon (20x)



Colon (20x)

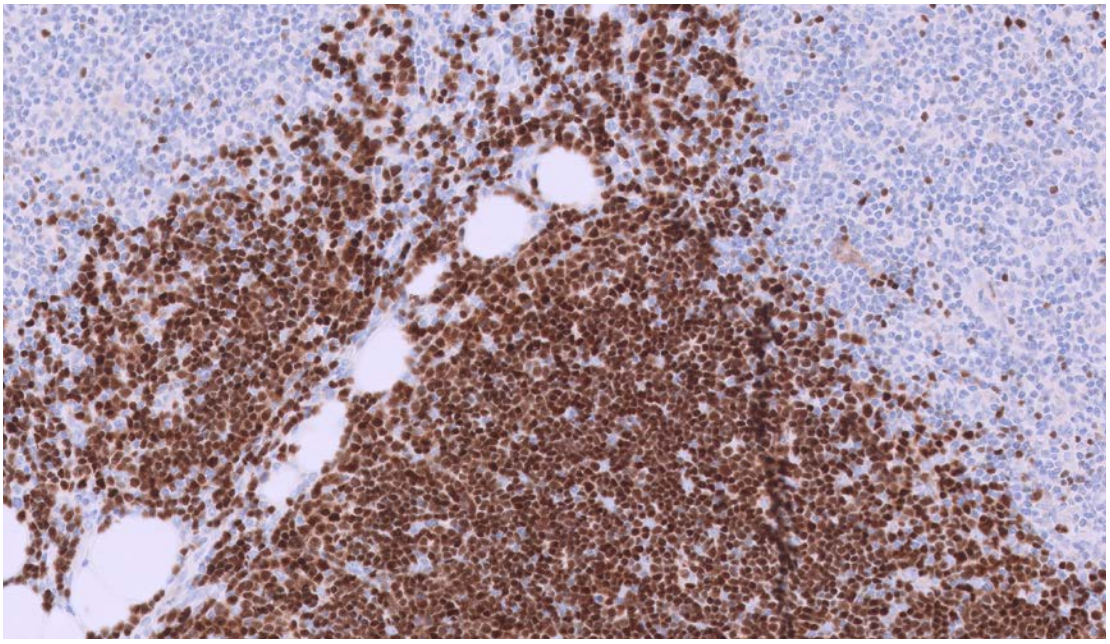
Monoclonal Rabbit Anti-Human

Antibody: **Terminal Deoxynucleotidyl Transferase (TdT)**

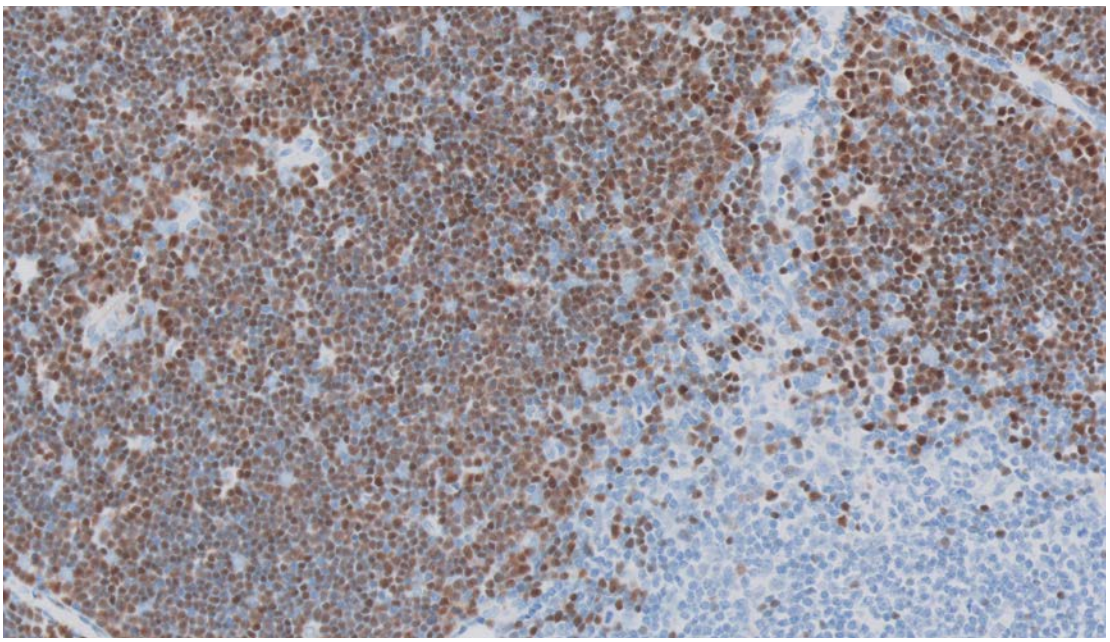
Clone: EP266

Code: GA093 | IR093

Reaction Location	Nucleus
Quality Control	**Thymus**
High Expression	The subcapsullar and cortical thymocytes show a strong staining reaction.
Low Expression	NA
Non-expression	Medullar thymocytes



Thymus (10x)



Thymus (10x)

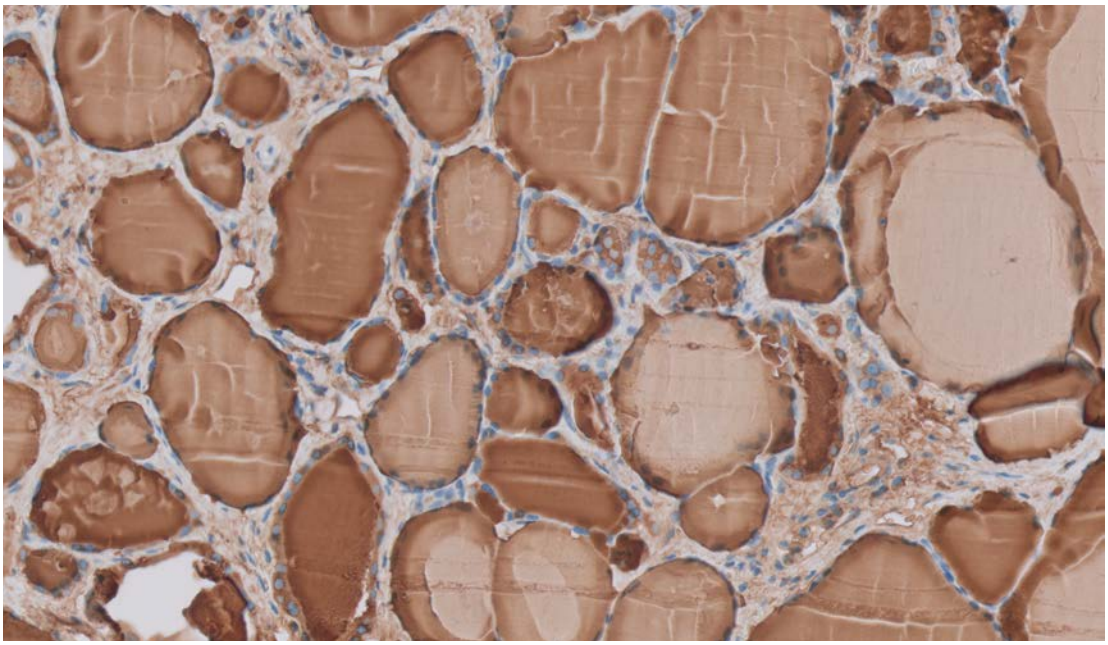
Polyclonal Rabbit Anti-Human

Antibody: **Thyroglobulin**

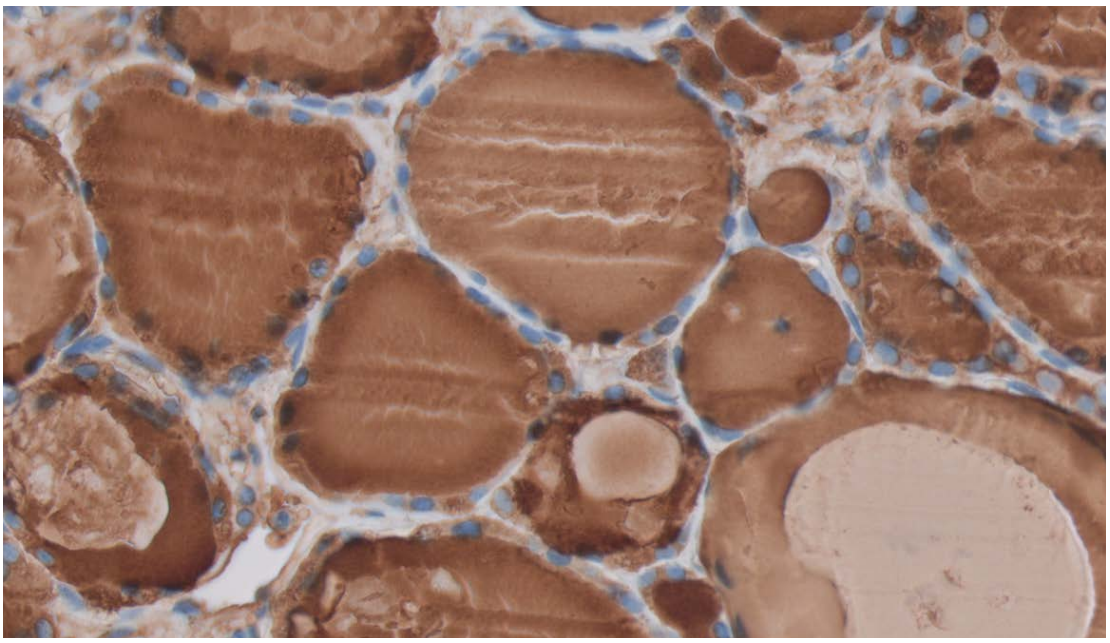
Clone: Polyclonal

Code: GA509

Reaction Location	Cytoplasm
Quality Control	**Thyroid**
High Expression	Extracellular colloid shows a moderate to strong staining reaction.
Low Expression	Columnar follicular epithelial cells show a weak to moderate staining reaction.
Non-expression	NA



Thyroid (20x)



Thyroid (40x)

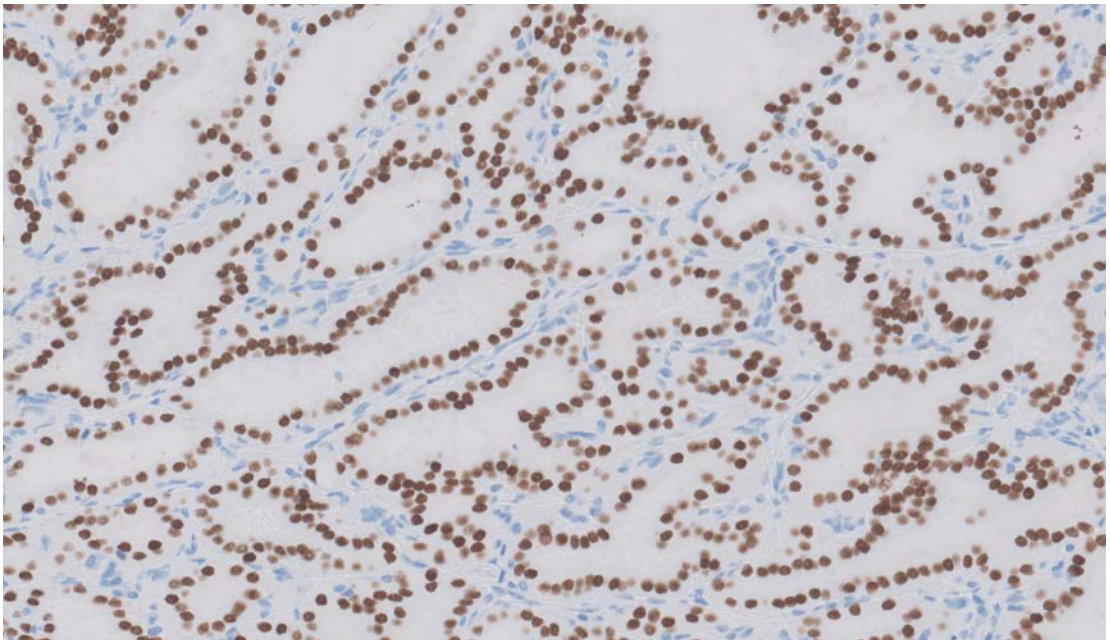
Antibody: Monoclonal Mouse Anti-**Thyroid Transcription Factor**

Clone: 8G7G3/1

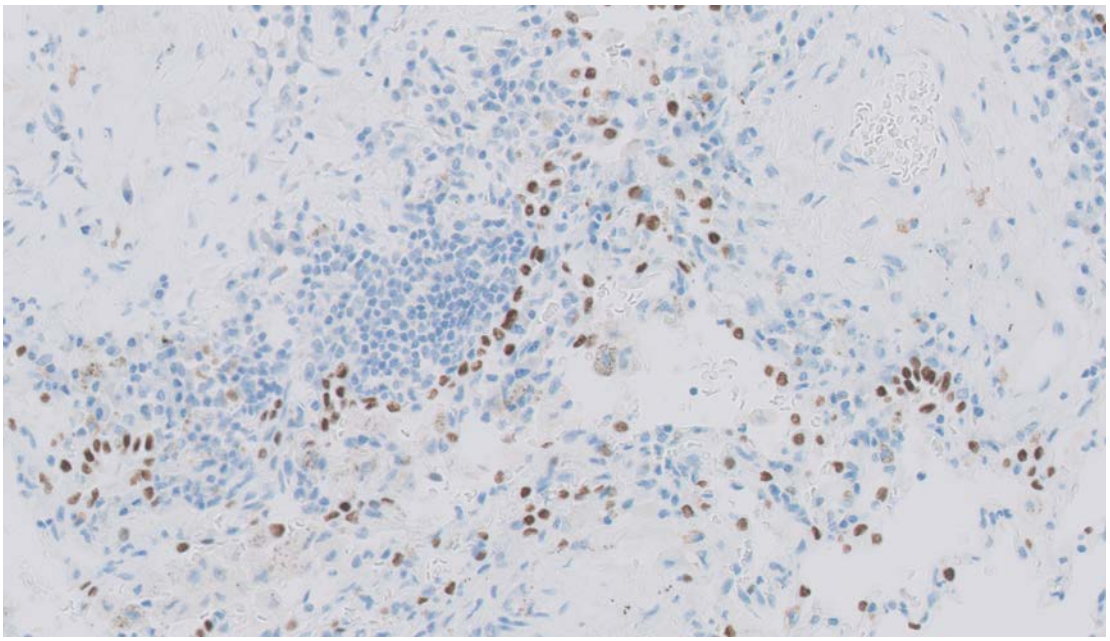
Code: IR056

Reaction Location	Nucleus	
Quality Control	**Thyroid**	**Lung**
High Expression	Thyroid follicular epithelial cells show a moderate to strong staining reaction.	Type II pneumocyte cells lining the alveolar walls show a moderate to strong staining reaction.
Low Expression	NA	NA
Non-expression	NA	NA

Note: Occasionally, a weak staining reaction may be observed in columnar epithelial cells of the respiratory ducts.



Thyroid (20x)



Lung (20x)

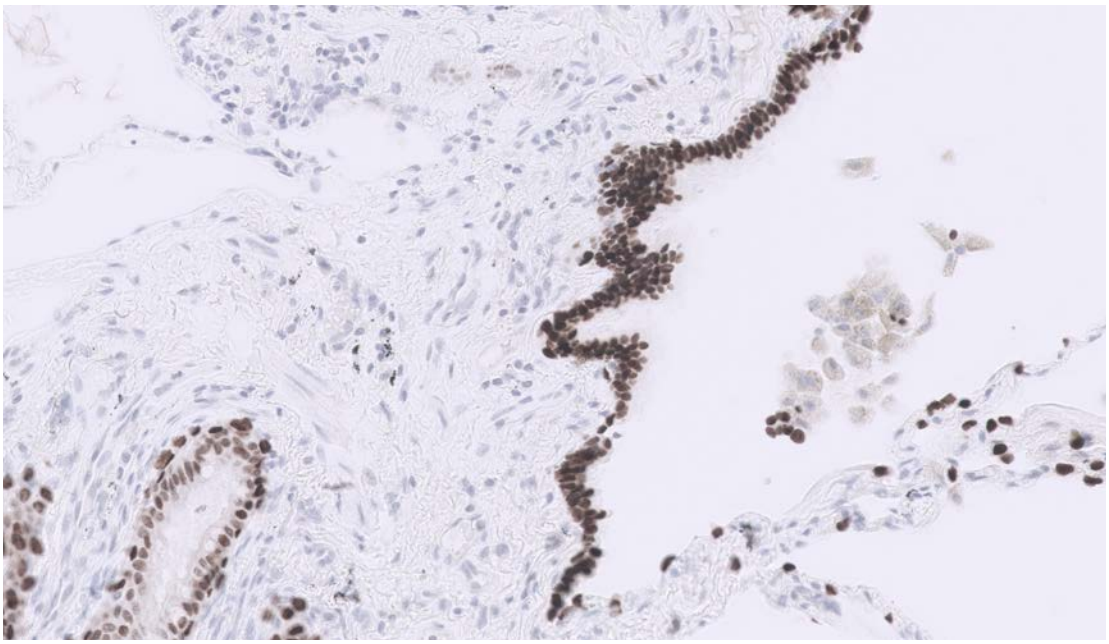
Monoclonal Rabbit Anti-Human

Antibody: **TTF-1 (Thyroid Transcription Factor)**

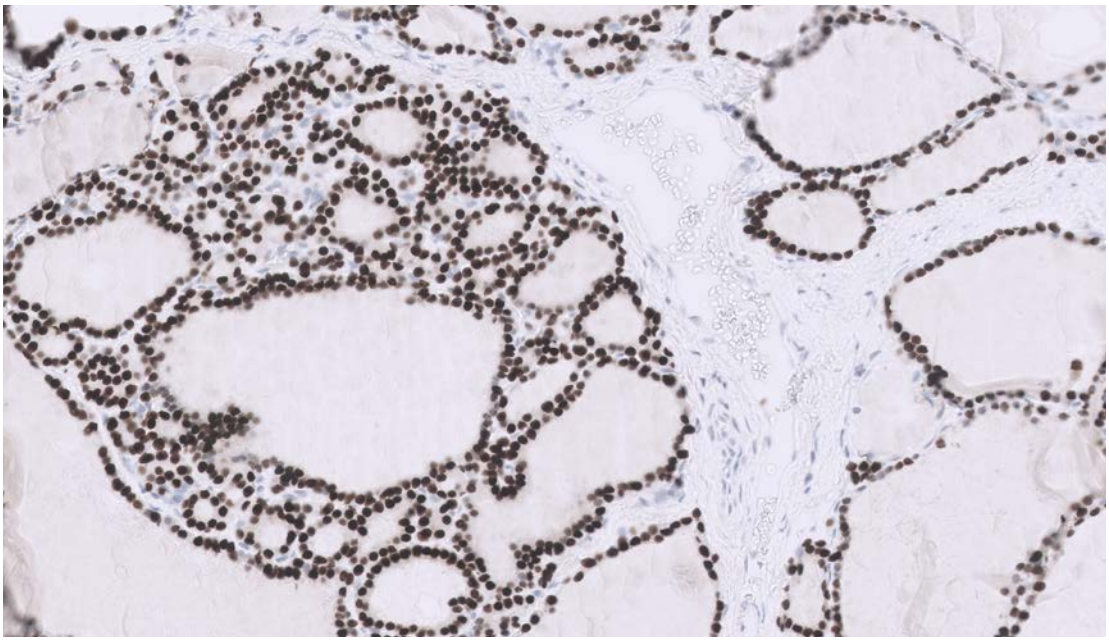
Clone: DAK-TTF-1

Code: GA788

Reaction Location	Nucleus	
Quality Control	**Lung**	**Thyroid**
High Expression	Type II pneumocytes, the club cells, and the basal cells of the terminal bronchioles show a moderate to strong nuclear staining reaction without significant cytoplasmic staining.	Follicular epithelial cells show a strong nuclear staining reaction.
Low Expression	NA	NA
Non-expression	NA	NA



Lung (40x)



Thyroid (10x)

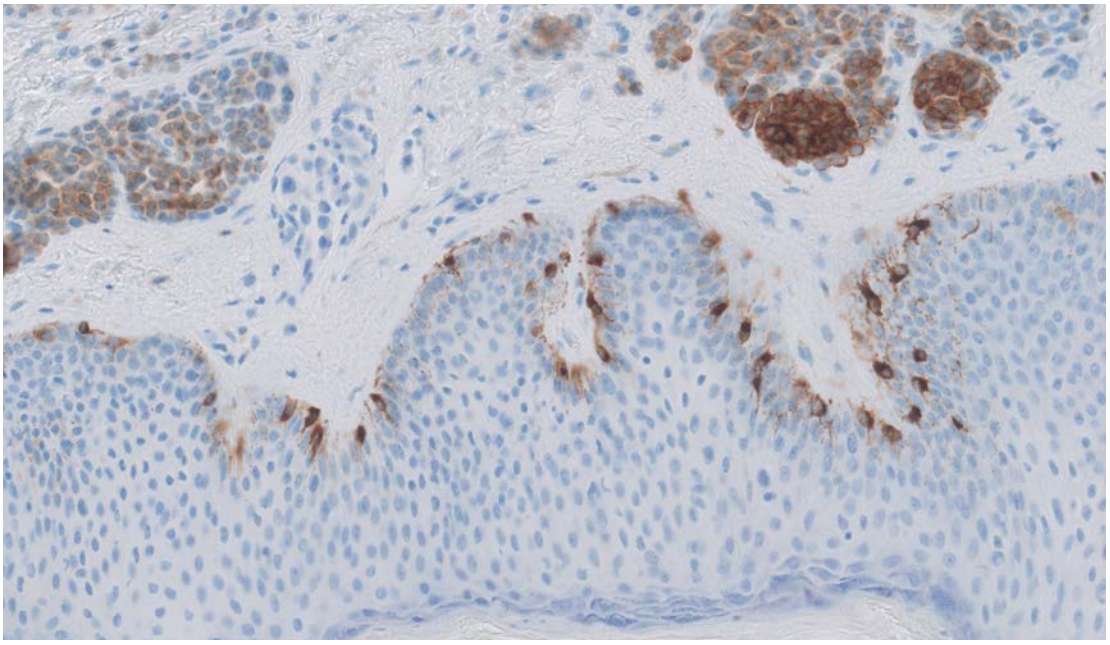
Monoclonal Mouse Anti-Human

Antibody: **Tyrosinase**

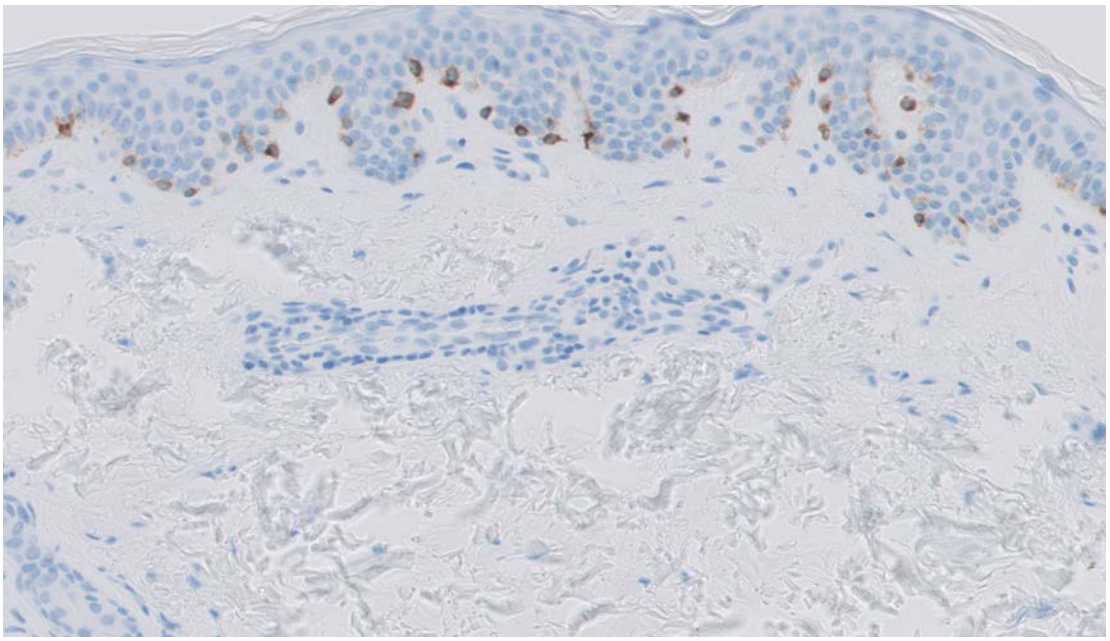
Clone: T311

Code: IR061

Reaction Location	Cytoplasm	
Quality Control	**Nevus**	**Skin**
High Expression	Nevus cells of the dermis and the melanocytes in the basal layer of the epidermis show a moderate to strong staining reaction.	NA
Low Expression	NA	Melanocytes in the basal layer of the epidermis show a weak to moderate staining reaction.
Non-expression	Squamous epithelial cells	NA



Nevus (20x)



Nevus (20x)

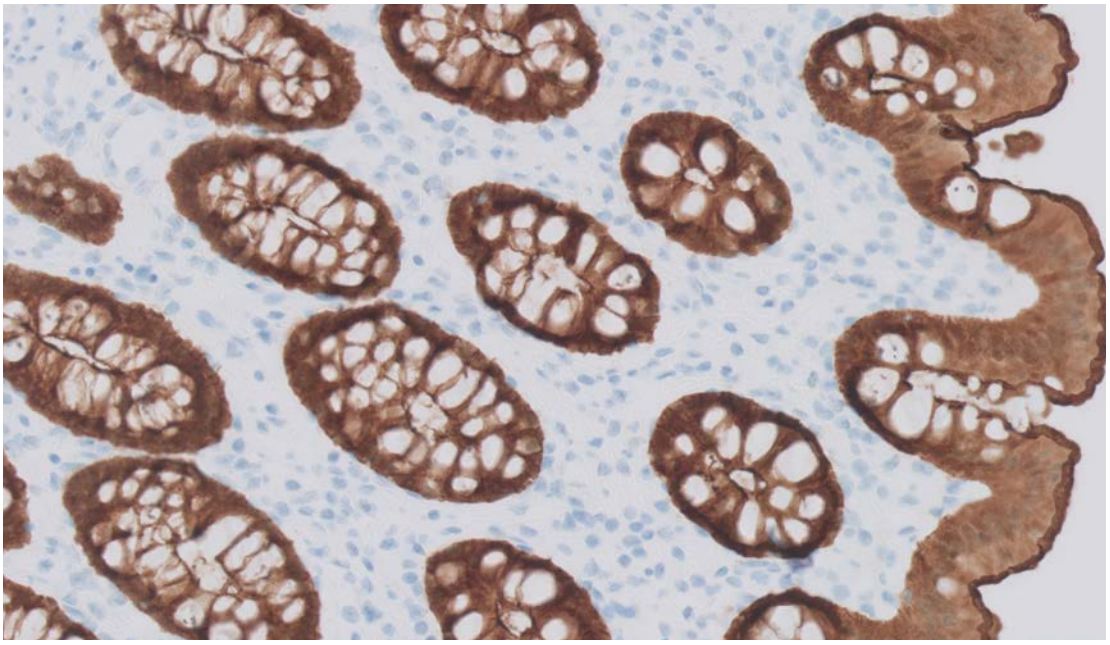
Antibody: Monoclonal Mouse Anti-**Villin**

Clone: 1D2 C3

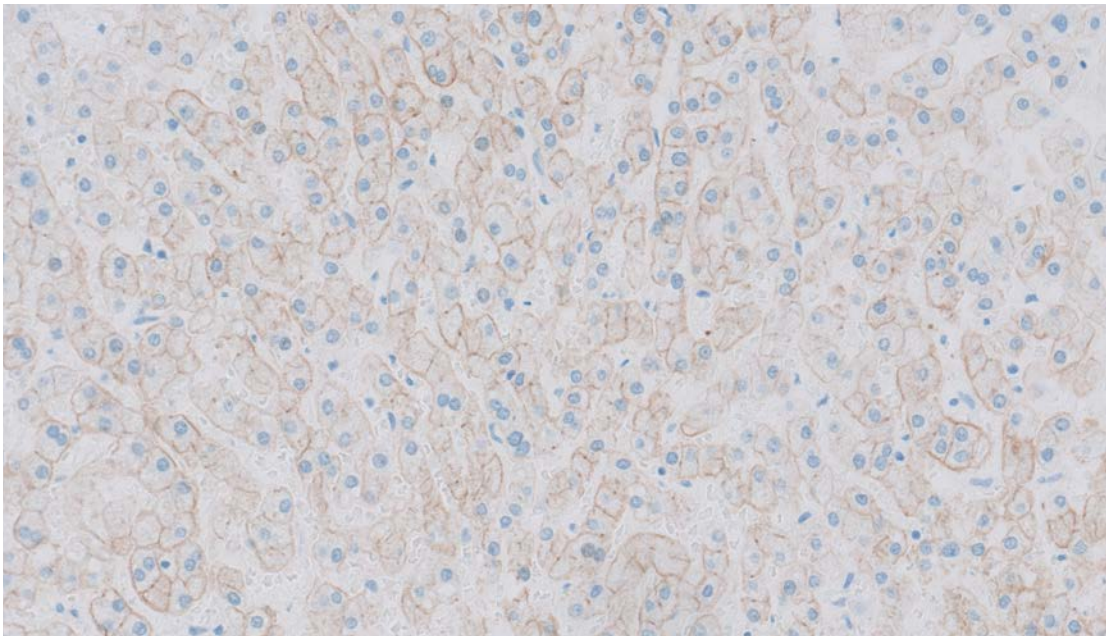
Code: IR076

Reaction Location	Membrane and cytoplasm	
Quality Control	**Colon/Appendix**	**Liver**
High Expression	Epithelial cells show a moderate to strong predominantly membranous staining reaction. The cytoplasm will typically show a diffuse and weak staining reaction.	NA
Low Expression	NA	Hepatocytes show a weak to moderate membranous staining reaction with no, or only a minimal, cytoplasmic staining reaction.
Non-expression	Lymphocytes in lamina propria	NA

Note: Cytoplasmic staining may be accompanied by nuclear staining.



Colon (20x)



Liver (20x)

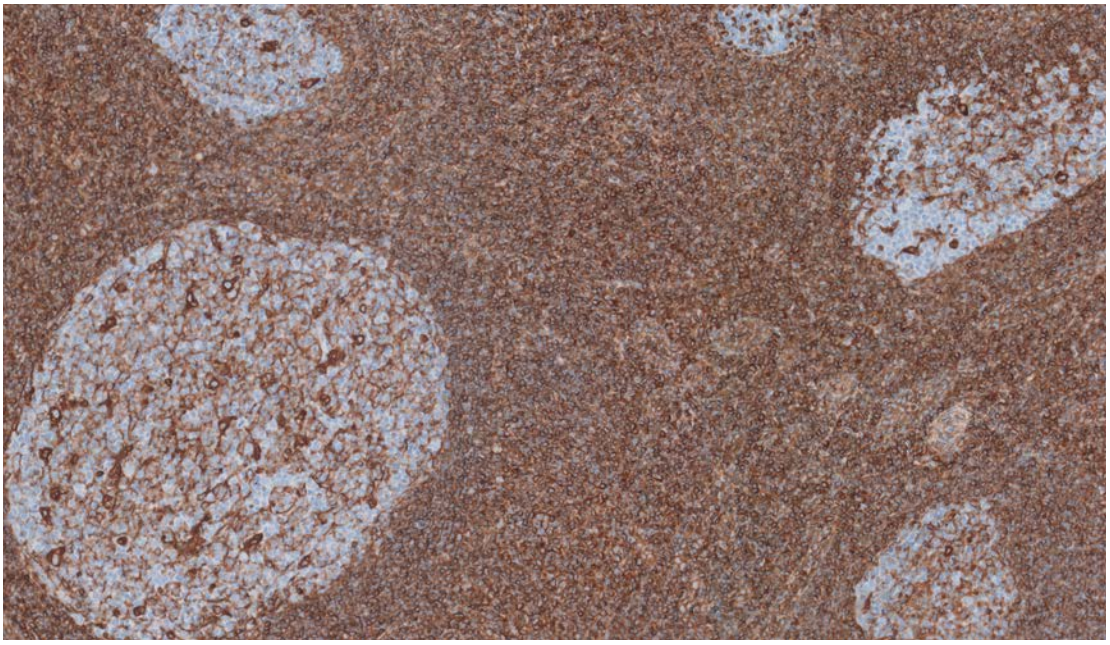
Monoclonal Mouse Anti-Human

Antibody: **Vimentin**

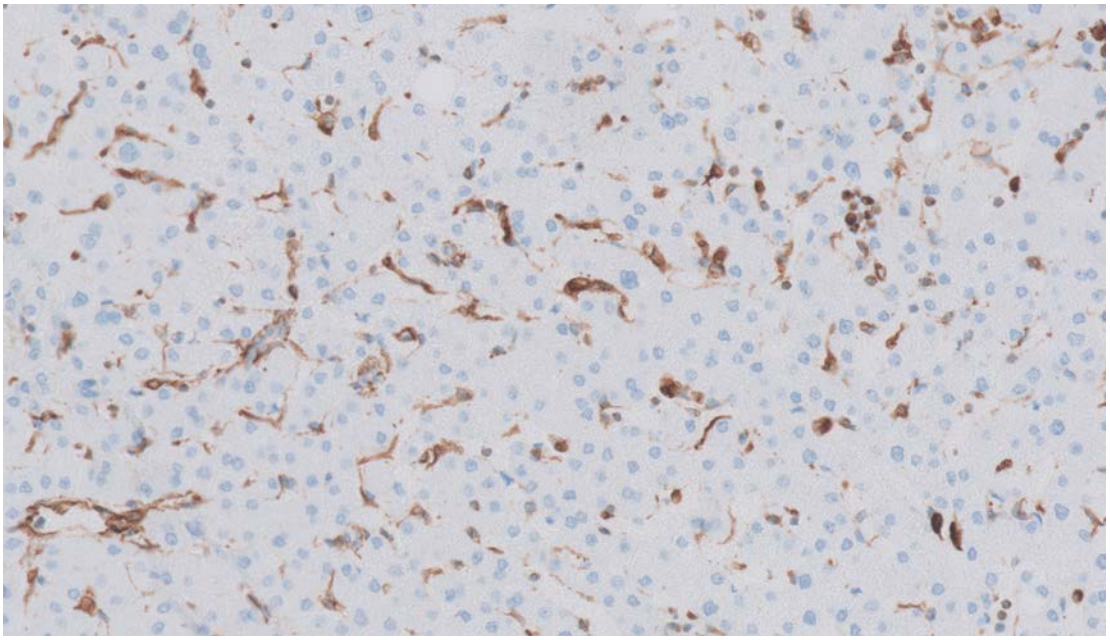
Clone: V9

Code: GA630 | IR630

Reaction Location	Cytoplasm	
Quality Control	**Tonsil**	**Liver**
High Expression	Lymphocytes and endothelial cells show a moderate to strong staining reaction.	Kupffer cells and lymphocytes show a moderate to strong staining reaction.
Low Expression	NA	Sinusoid smooth muscle cells show a weak to moderate staining reaction.
Non-expression	NA	Hepatocytes



Tonsil (10x)



Liver (20x)

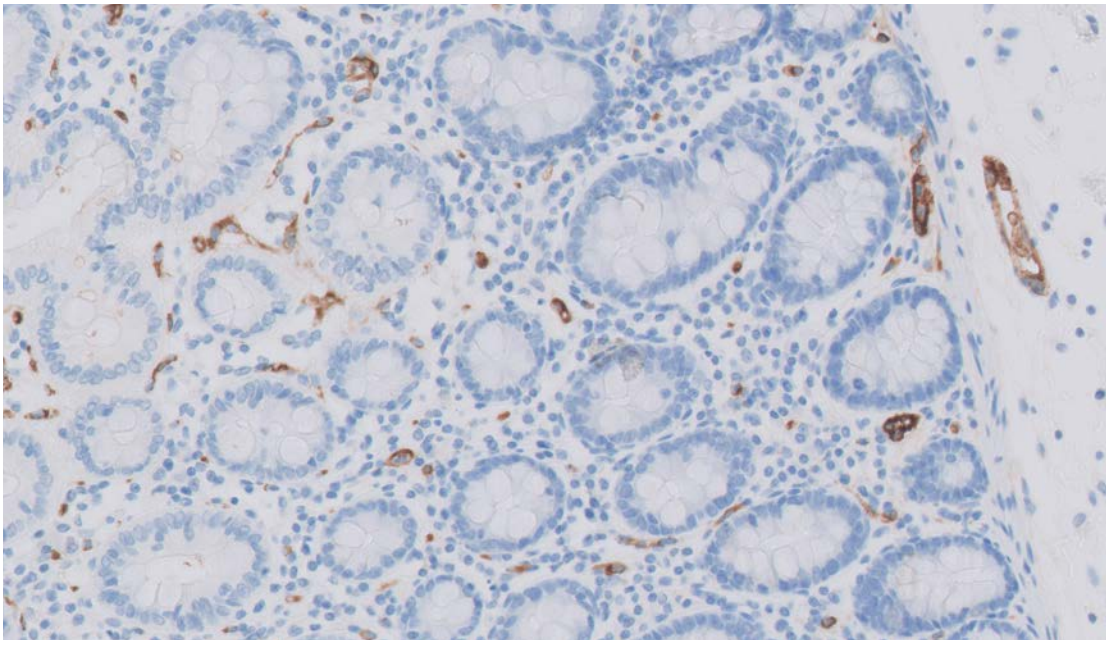
Polyclonal Rabbit Anti-Human

Antibody: **Von Willebrand Factor**

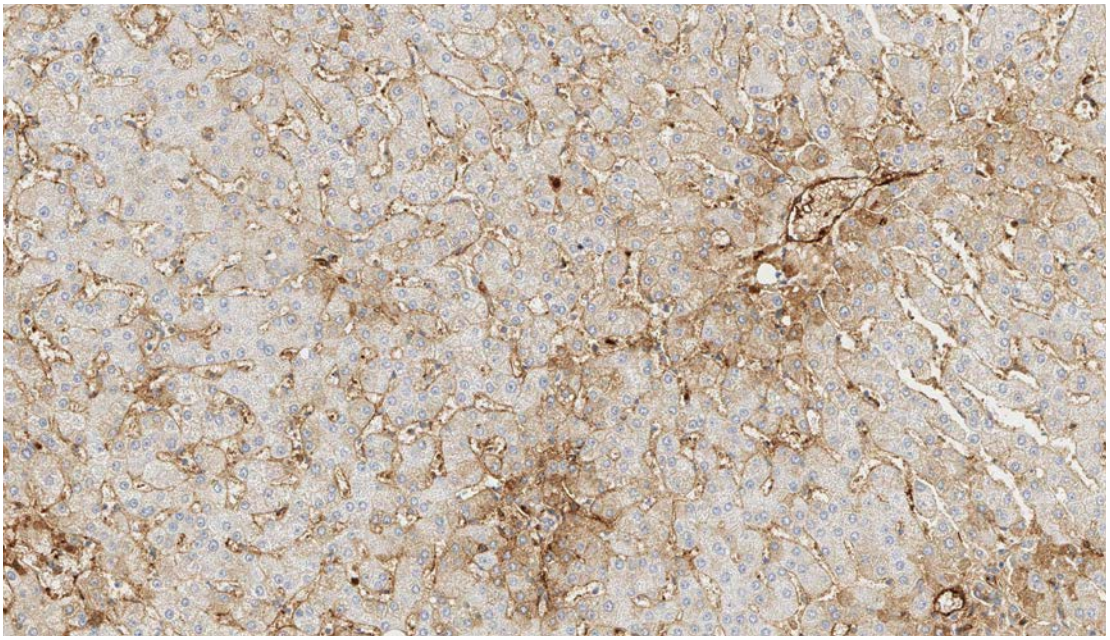
Clone: Polyclonal

Code: GA527

Reaction Location	Cytoplasm	
Quality Control	**Appendix/Colon**	**Liver**
High Expression	Endothelial cells in the vessels in the lamina propria show a moderate to strong staining reaction.	Endothelial cells in large vessels show a moderate to strong staining reaction.
Low Expression	NA	Endothelial cells lining the sinusoids show a weak to moderate staining reaction.
Non-expression	Epithelial cells	NA



Colon (20x)



Liver (10x)

Monoclonal Mouse Anti-Human

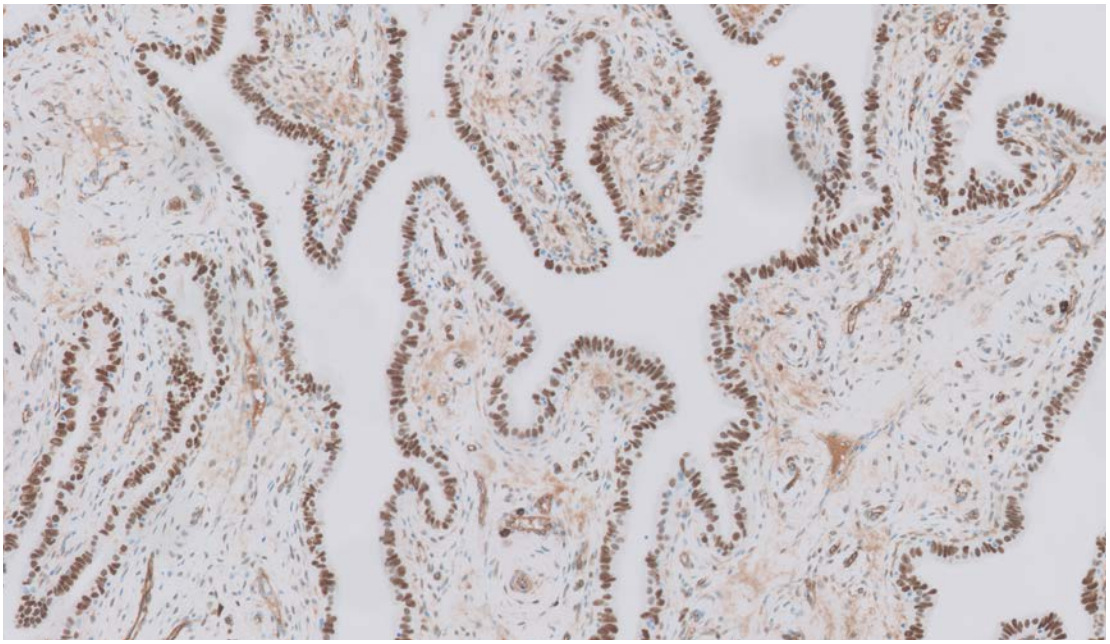
Antibody: **Wilms' Tumor 1 Protein**

Clone: 6F-H2

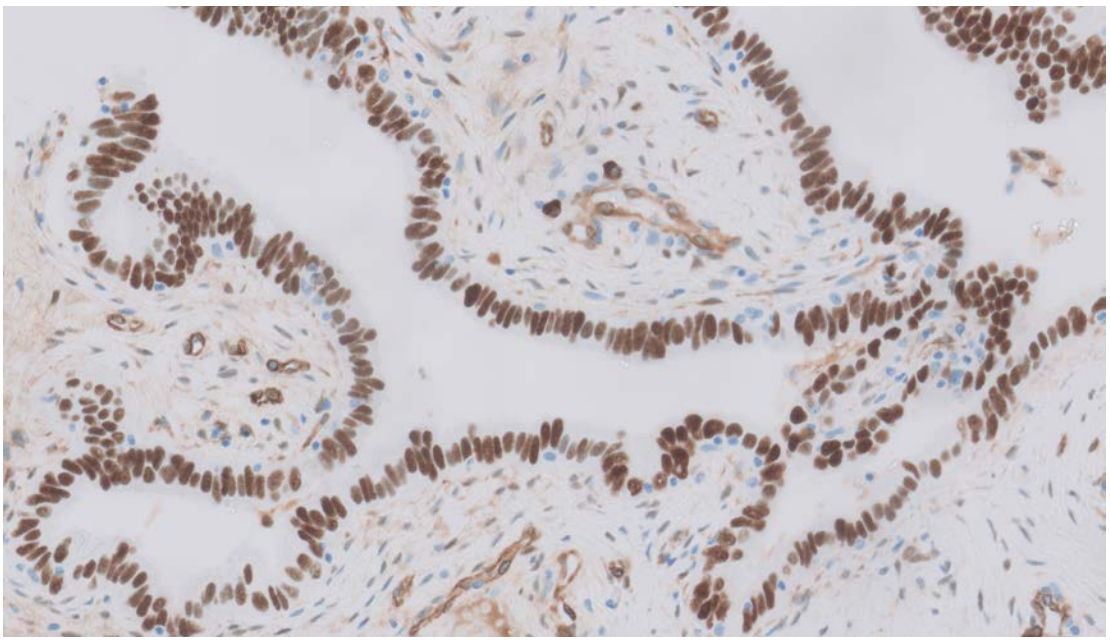
Code: IR055

Reaction Location	Nucleus
Quality Control	**Fallopian tube**
High Expression	Epithelial cells and the majority of stromal smooth muscle cells show a moderate to strong nuclear staining reaction. A weak cytoplasmic background staining in these cells is accepted.
Low Expression	NA
Non-expression	NA

Note: Endothelial cells will typically show a moderate to strong cytoplasmic staining reaction.



Fallopian tube (10x)



Fallopian tube (20x)



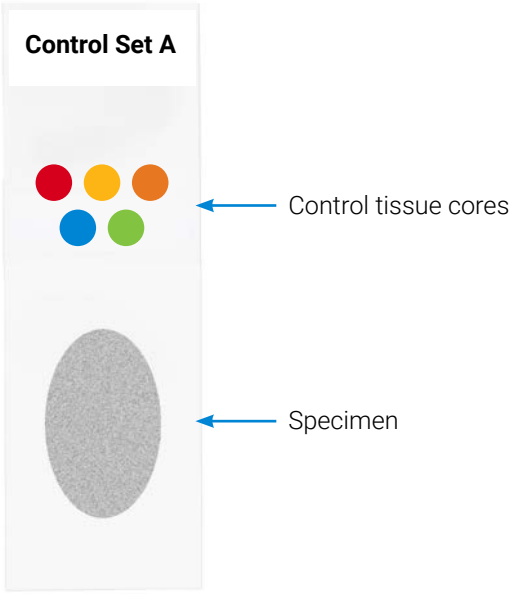
Appendix

On-slide controls

We recommend using small, core tissue sections attached to the same glass slide as the test specimen for each staining. For inspiration we have suggested three different, standard control sets of five tissue cores which will cover over 75% of the FLEX RTU antibodies in this Atlas of Controls.

Control Set A	Control Set B	Control Set C
Tonsil	Tonsil	Breast/Breast hyperplasia
Colon	Kidney	Skin/Nevus
Appendix	Brain	Placenta
Liver	Prostate	Thyroid
Pancreas	Thymus	Cervix

Glass slide with on-slide control tissue



The recommendation of on-slide control tissue cores in these combinations is by no means intended to override the Instructions for Use and the professional judgment of a certified pathologist. The contents are provided as information only, and Agilent Dako neither claims nor warrants the universal validity of the information provided as there are national and professional differences in the acceptance of the relevance of various markers and related quality control tissues.

Notes

Notes

D58532_04

This information is subject to change without notice.

© Agilent Technologies, Inc. 2020-2026
Published in the USA, October 27, 2026
00230 2026SEP21

Agilent
Trusted Answers