BIOCARE
MEDICAL

2013 Supplement

Catalog

www.biocare.net

Fighting Cancer

One Slide at a Time

Contact Customer Service
7:00 am - 5:00 pm PST
Toll Free 800-799-9499
customerservice@biocare.net

Contact Biocare Medical
Toll Free 800-799-9499
Local 925-603-8000
Fax 925-603-8080

Contact Technical Support
24/7 Live Technical Support
Toll Free 800-799-9499 **Option 3**
techsupport@biocare.net

BIOCARE MEDICAL

4040 Pike Lane, Concord, CA 94520

Table of Contents

Ordering Information

How to Place an Order

Contact customer service orders may be submitted via phone, fax, email or standard mail. Please provide the following information on your purchase order or correspondence: purchase order number; name, telephone number, shipping address (no P.O. boxes) and billing address (If applicable); name of product, catalog number, and quantity; credit card number, expiration date and name exactly as it appears on the credit card.

Place an Order Internationally

To order outside the USA, please contact the Biocare Medical international distributor closest to you. For a list of current international distributors visit us online at www.biocare.net.

Payment Methods

Payments must be made in U.S. dollars. Methods of payment are as follows: MasterCard, VISA, American Express or by check, drawn on a U.S. bank, made payable to "Biocare Medical, LLC".

Conditions of Sale

All prices are quoted in U.S. dollars, exclusive of state and county tax, where applicable. Prices are subject to change without notice.

Credit Terms

Net 30 upon approval. Overdue accounts subject to finance charges.

Shipping & Priority Delivery

Shipments are F.O.B. Concord, CA. Freight and handling charges must be prepaid and are added to the invoice. Priority and Saturday delivery are available upon request.

Returns

If you are not completely satisfied with the performance of a product, you may return it to Biocare Medical for a refund or replacement, at our discretion. Returns can only be accepted with a return identification number and authorization. Contact Customer Service for assistance in returning products. Returns not caused by unsatisfactory product performance must be approved by Biocare in advance and made within 30 days of delivery and will be subject to a 30% restocking fee.

Image Identification Key

Product Size Key

Letter	Volume
A, AK	0.1 ml
B, BK	0.5 ml
C, CK	1.0 ml
G3	3.0 ml
G5	5.0 ml
AA, G, KG, AAK	6.0 ml

Letter	Volume
G10	10 ml
G20	20 ml
H, G25, KH	25 ml
JJ, R	50 ml
G80	80 ml
L, LX, S	100 ml

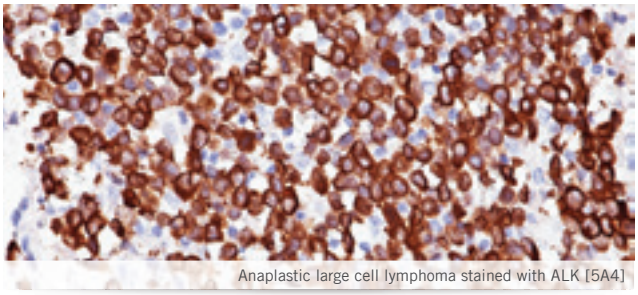
Letter	Volume
L10	110 ml
LL	200 ml
M, M-RVS, MX	500 ml
MM, MMRTU	1000 ml
BULK	2.5 L
G1, GL	1 gallon

Primary Antibodies

Biocare Medical's dedicated Research & Development Team pride themselves on developing the most sensitive and highly specific antibodies which are suitable for use in the Anatomical Pathology Laboratory. We are routinely expanding our antibody offerings to include key antibodies that are critical tools to aid in cancer and infectious disease detection. We provide exclusive, licensed antibodies such as ERG, p63 and PAX8, which may aid in pathologist interpretation and decision making. All Biocare antibodies are optimized for immunohistochemical procedures for use on FFPE tissues and are formulated to provide maximum sensitivity while concurrently minimizing the amount of background staining. Available in both prediluted and concentrated formats, we also offer a concise list of antibodies that are optimized for our automated slide stainer, the intelliPATH™, and for the Ventana Medical Systems instrumentation. Our antibodies are readily available in a number of formats, making them accessible to all IHC laboratories.

ALK [5A4] IVD FFPE

Clone	5A4
Isotype	IgG1
Reactivity	
Control	Anaplastic large cell lymphoma



Anaplastic large cell lymphoma stained with ALK [5A4]

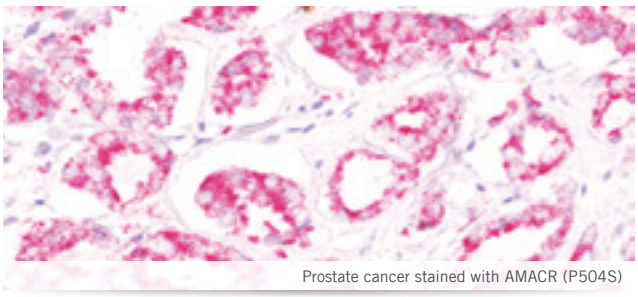
ALK (p80) recognizes the formalin-resistant epitope of native anaplastic lymphoma kinase (ALK) protein. ALK specifically labels t(2;5)-positive cells giving strong cytoplasmic and/or nuclear staining. Research has shown that ALK stains the majority of CD30+ ALCL, and ALK protein is univerally expressed by ALK-rearranged lung adenocarcinoma. ALK should be used in a panel with CD15, CD30, TIA-1 and EMA.

References: 1. Falini B, *et al.* Am J Pathol. 1998; 153(3):875-86. 2. Mino-Kenudson M, *et al.* Clin Cancer Res. 2010; 16(5):1561-71. 3. Paik JH, *et al.* J Thorac Oncol. 2011; 6(3):466-72. 4. McLeer-Florin A, *et al.* J Thorac Oncol. 2012; 7(2):348-54.

Cat. No.	Predilute API 3041 AA; Concentrate ACI 3041 A, B

AMACR ASR FFPE

Clone	13H4
Isotype	Rabbit IgG
Reactivity	N/A
Control	N/A



Prostate cancer stained with AMACR (P504S)

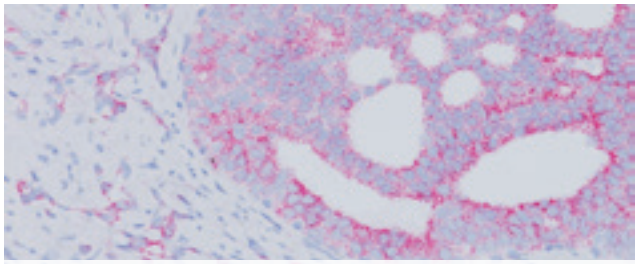
α-Methylacyl coenzyme A racemase (AMACR), also known as P504S, is a peroxisomal and mitochondrial enzyme that plays a role in bile acid synthesis and β-oxidation of branched chain fatty acids. In immunohistochemistry, AMACR has been shown to be a sensitive marker of prostatic carcinoma. Additionally, prostate glands involved in PIN have been found to express AMACR.

References: 1. Hameed O, *et al.* Semin Diagn Pathol. 2005 22(1):88-104. 2. Trpkov, K, *et al.* Am J Clin Pathol. 2009 123(2):211-20 3. Wu CL, *et al.* Hum Pathol. 2004; 35:1008-1013.

Cat. No.	Predilute APA 3024 AA

AMACR, 2X & 3X ASR FFPE

Clone	13H4
Isotype	Rabbit IgG
Reactivity	N/A
Control	N/A



Prostate cancer stained with AMACR (P504S), 2X

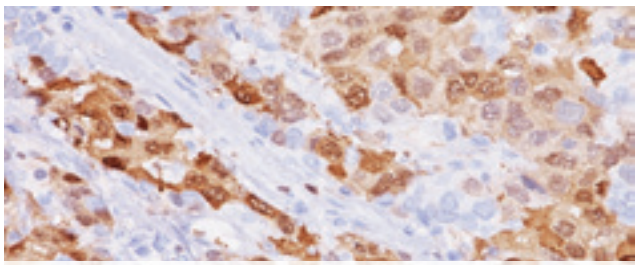
α-Methylacyl coenzyme A racemase (AMACR), also known as P504S, is a peroxisomal and mitochondrial enzyme that plays a role in bile acid synthesis and β-oxidation of branched chain fatty acids. In immunohistochemistry, AMACR has been shown to be a specific marker of prostatic adenocarcinoma. Additionally, prostate glands involved in PIN have been found to express AMACR. AMACR + CK5/14 may be used to assess neoplasia in prostate biopsies.

References: 1. Hameed O, *et al.* Semin Diagn Pathol. 2005; 22(1):88-104. 2. Trpkov, K, *et al.* Am J Clin Pathol. 2009; 123(2):211-20 3. Wu CL, *et al.* Hum Pathol. 2004; 35:1008-1013.

Cat. No.	Predilute, 2X APA 3016 AA supernova	**Cat. No.**	Predilute, 3X APA 3055 G3 supernova

Arginase-1 IVD FFPE

Clone	EPR6672(B)
Isotype	Rabbit IgG
Reactivity	
Control	Normal human liver



Hepatocellular carcinoma (HCC) stained with Arginase-1

Arginase-1 (ARG-1) is a key enzyme of the urea cycle found in liver that catalyzes the conversion of L-arginine into L-ornithine and urea. ARG-1 has been shown to be more sensitive than HepPar-1 and Glypican-3 in hepatic differentiation and is a specific marker for differentiating hepatocellular carcinoma (HCC) from non-HCC.

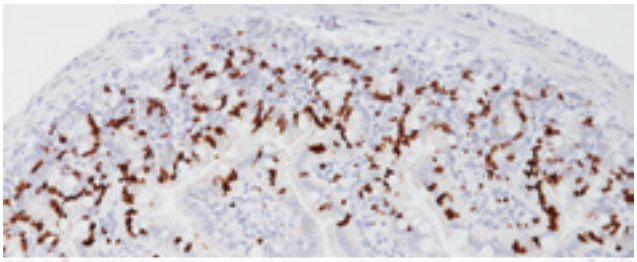
References: 1. Fujiwara M, *et al.* Cancer (Cancer Cytopathol) 2012; 120:230-7. 2. Timek DT, *et al.* Am J Clin Pathol. 2012; 138(2):203-10. 3. Yan BC, *et al.* Am J Surg Pathol. 2010; 34(8):1147-54.

Cat. No.	Predilute API 3058 AA; Concentrate ACI 3058 A, B

Biotinylated BrdU RUO FFPE

(Biotinylated Bromodeoxyuridine)

Clone	BU20a
Isotype	IgG1
Reactivity	
Control	BrdU localized in tissues



Bromodeoxyuridine positive mouse intestine stained with anti-BrdU

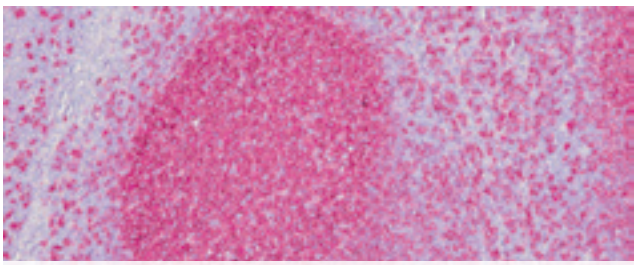
BrdU is a biotinylated monoclonal antibody that recognizes bromodeoxyuridine (BrdU), an analog to thymidine, and can be incorporated into replicating DNA during the S-phase of the cell cycle. The BrdU antibody can be used for DNA labeling index, evaluation of DNA synthesis, and cell proliferation studies. This antibody is biotinylated, and thus eliminates the need for a biotinylated secondary antibody. This universal antibody can be used in all species, including mouse and rat tissues.

References: 1. McGinley JN, *et al.* J Histochem Cytochem 2000 Mar; 48(3):355 -362. 2. Cher ML, *et al.* Prostate. 1995; 2b(2):87-93. 3. Hogarth CA, *et al.* Methods Mol Biol. 2013; 927:309-20.

Cat. No.	Concentrate ACR 3042 AK, CK

CD20 (P) RUO FFPE FARMA

Clone	N/A
Isotype	N/A
Reactivity	
Control	Tonsil or B-cell lymphoma



Dog tonsil stained with CD20 (P) using Warp Red™

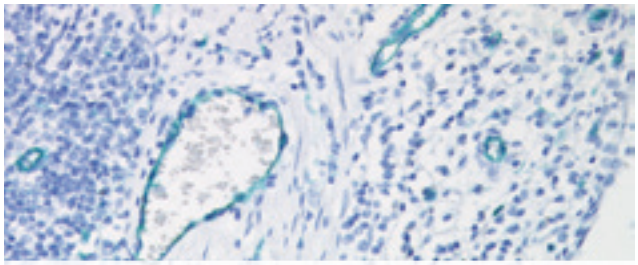
This antibody is optimized to work with Biocare Medical's PromARK™ detection products for animal tissues. CD20 is a 33 kDa leukocyte surface antigen consisting of four transmembrane regions and cytoplasmic N- and C-termini. CD20 is expressed primarily in B-cells but has also been detected in a subset of both normal and neoplastic T-cells. This gene encodes a B-lymphocyte surface molecule which plays a role in the development and differentiation of B-cells into plasma cells. CD20 has been tested and confirmed on multiple mammalian tissues including cat, dog, cow, pig, horse, sheep, and human, but does not cross-react in mouse or rat tissues.

References: 1. Shan, D, *et al.* Blood 1998; 91(5):1644-52. 2. Tedder TF, *et al.* Immunol Today 1994; 15:450-4.

Cat. No.	Concentrate ACR 3004 A, B

CD31 (PECAM-1) IVD FFPE

Clone	JC/70A
Isotype	IgG1/kappa
Reactivity	
Control	Tonsil, colon, or hemangioma



Blood vessel stained with CD31 using Vina Green™

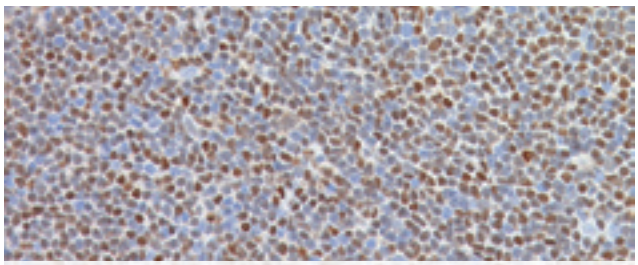
CD31 recognizes a 100 kDa glycoprotein in endothelial cells and a 130 kDa protein in platelets. It reacts weakly with mantle zone B-cells, peripheral T-cells, and neutrophils. CD31 can detect vascular endothelium associated antigen and has been used as a marker for benign and malignant human vascular disorders, myeloid leukemia infiltrates, and megakaryocytes in normal bone marrow. When compared to Factor VIII and CD34 antibodies, studies have shown CD31 to be a superior marker for angiogenesis. A CD31, CD34, and Factor VIII panel has also been used to mark Kaposi's sarcoma and angiosarcomas.

References: 1. Dango S, *et al.* Lung Cancer. 2008; 60(3):426-33. 2. Rongioletti, F. *et al.* Am J Dermatopathol. 1996; 18(5):474-7. 3. Poblet E, *et al.* J Clin Pathol. 1995 Nov; 48(11):1011-6. 4. Hudock J, *et al.* Am J Clin Pathol. 1994; 102(1):55-60. 5. De Young, BR, *et al.* Appl. Immunohistochem. 1993; 1:97-100.

Cat. No.	Predilute PM 131 AA; Concentrate CM 131 A,C

Cyclin D1 IVD FFPE

Clone	EP12
Isotype	Rabbit IgG
Reactivity	
Control	Mantle Cell Lymphoma & Breast



Mantle cell lymphoma stained with Cyclin D1

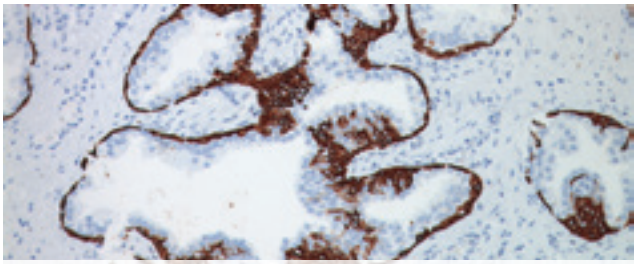
This rabbit monoclonal antibody recognizes a protein of 36 kDa, identified as Cyclin D1 (also known as Bcl-1 or PRAD-1). Cyclin D1 is a regulatory subunit of certain protein kinases thought to advance the G1 phase of the cell cycle. Cyclin D1 used in tandem with CD5, CD10, and CD23 may aid in the diagnosis for mantle cell lymphoma. Cyclin D1 over-expression may be a marker of prolonged survival in breast carcinoma subgroups with aggressive phenotypes in invasive breast cancer. Due to the superior technology in the development of this antibody, its binding capacity is superior to mouse monoclonal antibodies and is virtually background free.

References: 1. de Leon ED, *et al.* Mod Pathol. 1998; 11(11):1046-51. 2. Samaha H, *et al.* Leukemia. 1998; 12(8):1281-7. 3. Quintanilla-Martinez L, *et al.* Am J Pathol. 1998; 153(1):175-82. 4. Nakamura S, *et al.* Pathol Int. 1997; 47(7):421-9. 5. van Diest PJ, *et al.* Am J Pathol. 1997; 150(2):705-11. 6. de Boer CJ, *et al.* Blood. 1995; 86(7):2715-23. 7. Bartkova J, *et al.* J Pathol. 1994; 172(3):237-45. 8. Mylona, E, *et al.* Histopathol. 2013; 62(3):472-80.

Cat. No.	Predilute PME 432 AA; Concentrate CME 432 A, C

Cytokeratin 5 IVD FFPE

Clone	EP1601Y
Isotype	N/A
Reactivity	
Control	Lung SqCC, Breast, Prostate & Skin



Prostate stained with Cytokeratin 5

CK5 is a type II intermediate filament protein that is expressed in active basal layers of most stratified squamous epithelia. CK5 is expressed in many non-keratinizing stratified squamous epithelia as well as basal cells in prostate glands and myoepithelial cells in mammary glands. In a published study, rabbit monoclonal CK5 antibody was compared to mouse monoclonal CK5/6. CK5 was 84% sensitive and 100% specific for lung SqCC when compared to CK5/6 (80% sensitivity and 97% specificity). The CK5 predilute has been optimized for lung squamous cell carcinoma; other tumors have not been tested.

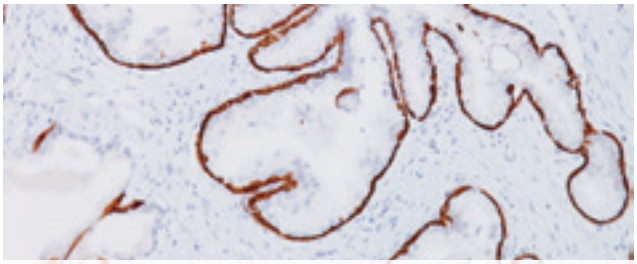
References: 1. Mukhopadhyay S, *et al.* Am J Surg Pathol. 2011; 35(1):15-25. 2. Tacha D, *et al.* Appl Immunohistochem Mol Morpho. 2012; 20:201-7. 3. Terry J, *et al.* Am J Surg Pathol. 2010; 34(12):1805-11. 4. Kargi A, *et al.* Appl Immunohistochem Mol Morphol. 2007; 15(4):415-20. 5. Miettinen M, *et al.* Am J Surg Pathol. 2003; 27(2):150-8. 6. Bocker W, *et al.* Lab Invest. 2002; 82(6):737-46.

Cat. No.	Predilute PME 430 AA; Concentrate CME 430 A, B

CK5/14, 2X IVD FFPE

(Cytokeratin 5/14)

Clone	XM26 + LL002
Isotype	IgG1/kappa + IgG3
Reactivity	
Control	Normal prostate



Basal epithelium in human prostate glands stained with CK5/14, 2X

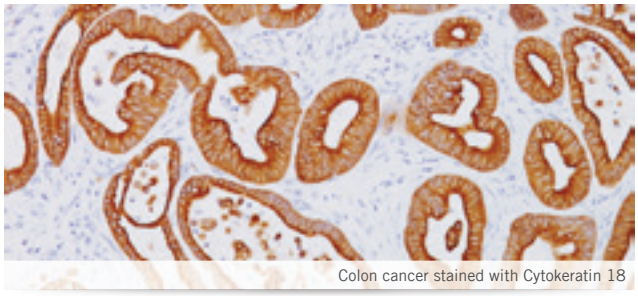
The CK5/14 monoclonal antibodies have been shown to be superior to CK5/6 and 34βE12. Sporadic loss of CK5/14 epithelium staining, along with p63, has been shown to occur in prostatic intraepithelial neoplasia (PIN), with near complete loss in prostate cancer. CK5/14 + AMACR (P504S) may be used to assess neoplasia in prostate biopsies. A panel comprised of CK5/14 + p63 + P504S has become the standard for PIN and prostate cancer detection in many histopathology laboratories.

References: 1. Abrahams NA, *et al.* Histopathology. 2002; 41(1):35-41. 2. Reis-Filho JS, *et al.* Virchows Arch. 2003; 443(2):122-32. 3. Laakso M, *et al.* Mod Pathol. 2005; 18(10):1321-8.

Cat. No.	Predilute API 3026 AAK supernova

Cytokeratin 18 IVD FFPE

Clone	DC10
Isotype	IgG1
Reactivity	
Control	Colon and skin



Colon cancer stained with Cytokeratin 18

Cytokeratin 18 (CK18) [DC10] is a 45 kDa acidic intermediate filament protein. It is normally co-expressed with cytokeratin 8 and is found in most simple ductal and glandular epithelia. The antibody reacts with a wide variety of simple epithelia such as gastrointestinal tract, lung, breast, pancreas, ovary, and thyroid tumors, whereas tumor cells of non-epithelial origin such as glioma, melanoma, and osteosarcoma are not reactive. It does not react with stratified squamous epithelium on most squamous cell carcinoma.

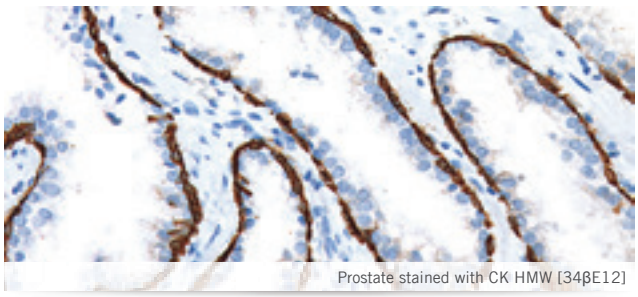
References: 1. Shao MM, *et al.* Virchows Arch. 2012; 461(3):313-22. 2. Fareed KR, *et al.* World J Gastroenterol. 2012; 18(16):1915-20. 3. Lauerova L, *et al.* Hybridoma. 1988; 7(5):495-504. 4. Nhung NV, *et al.* Desk Pathol. 1999; 35(3):80-4. 5. Ueno T, *et al.*, Pathol Int. 2003; 53(5): 265-9.

Cat. No.	Predilute API 3061 AA; Concentrate ACI 3061 A, C

CK HMW, 3X IVD FFPE

(Cytokeratin [34βE12])

Clone	34βE12
Isotype	IgG1 - kappa
Reactivity	
Control	Normal prostate



Prostate stained with CK HMW [34βE12]

34βE12 recognizes cytokeratins (CK) 1, 5, 10, and 14. This antibody is shown to be reactive with squamous and adeno-squamous carcinomas; adenocarcinomas are negative. In normal epithelia, 34βE12 stains stratified epithelia, myoepithelial cells and basal cells in the prostate gland and bronchi. 34βE12 maybe useful as a differential marker for squamous carcinomas and adenocarcinomas as well as for benign and malignant tumors of the prostate gland.

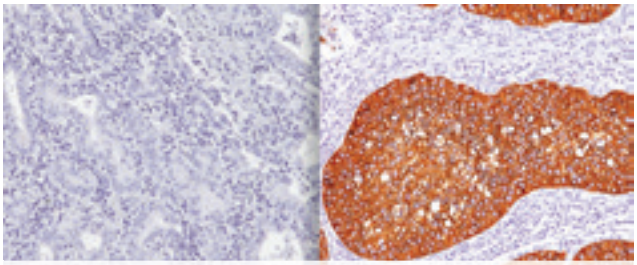
References: 1. Moinfar F, *et al.* Am J Surg Pathol. 1999; 23(9):1048-58. 2. Varma M, *et al.* Mod Pathol. 1999; 12(5):472-8. 3. Iczkowski KA, *et al.* Mod Pathol. 1999; 12(1):1-4. 4. Morice WG, *et al.* Hum Pathol. 1998; 29(6):609-12. 5. Boran C, *et al.* Uro Oncol 2011; 29(6):614-23 6. Boran C, *et al.*, Urol Oncol. 2011; 29(6):614-23. doi:10.1016/j.urolonc.2009.11.013. Epub 2010.

Cat. No.	Predilute API 3056 G3, H supernova

DSG3 + CK5 IVD FFPE

(Desmoglein 3 + Cytokeratin 5)

Clone	BC11 + XM26
Isotype	IgG1 + IgG1/Kappa
Reactivity	
Control	Lung Squamous Cell Carcinoma



(L) LADC negative for DSG3 + CK5 (R) Lung SqCC stained with DSG3 + CK5

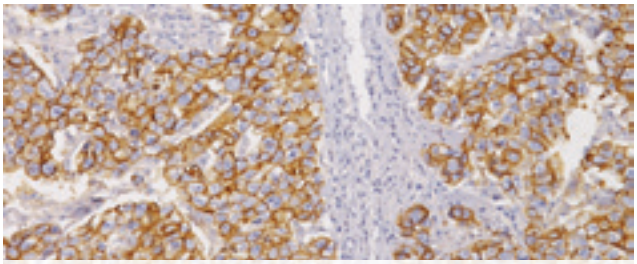
Studies have shown that Desmoglein 3 (DSG3) had a sensitivity and specificity of 83% and 100% respectively, in detecting SqCC vs. adenocarcinomas. CK5 has been shown to be extremely specific for lung SqCC and negative in lung adenocarcinomas. One study showed that DSG3 used in combination with CK5, provided 93.7% sensitivity with 100% specificity for lung SqCC. DSG3 + CK5 was 100% negative for all adenocarcinomas.

References: 1. Tacha D, *et al.* AIMM. 2012; 20(3):201-207. 2. Mukhopadhyay S, *et al.* Am J Surg Pathol. 2011; 35:15-25. 3. Savci-Heijink CD, *et al.* Am J Pathol. 2009; 174:1629-37. 4. Fukuoka J, *et al.* Hum Pathol. 2007; 38:276-83. 5. Tacha D, *et al.* Modern Pathol. 2010; 23 Supplement 1:222A.

Cat. No.	Predilute API 3018 AA; Concentrate ACI 3018 A, C

E-cadherin IVD FFPE

Clone	EP700Y
Isotype	Rabbit IgG
Reactivity	
Control	Normal or Ductal Breast Carcinoma



Breast ductal cell carcinoma stained with E-cadherin

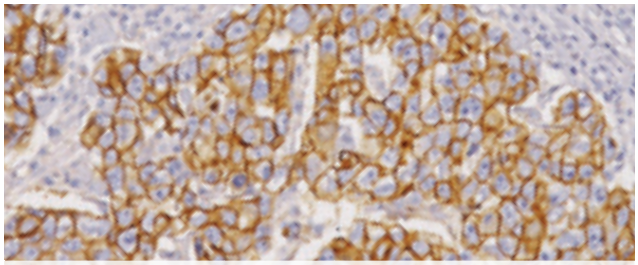
Immunohistochemical studies have shown E-cadherin to be expressed in breast ductal carcinoma with loss of expression in lobular carcinoma. As a result, mouse monoclonal anti-E-cadherin [HECD-1] has been used by pathologists to differentiate between ductal and lobular carcinomas of the breast, with currently published sensitivity and specificity of approximately 90%. Rabbit monoclonal E-cadherin antibody may combine the best properties of both mouse monoclonal antibodies and rabbit antisera.

References: 1. de Deus Moura R, *et al.* Appl Immuohistochem Mol Morphol 2013; 21(1):1-12. 2. Dabbs DJ, *et al.* Am J Surg Path. 2007; 31:427-37. 3. Moriya T, *et al.* Pathology. 2009; 41(1):68-76. 4. Qureshi, HS, *et al.* Am J Clin Pathol. 2006; 125:377-85.

Cat. No.	Predilute API 3012 AA; Concentrate ACI 3012 A, C

E-cadherin, 2X IVD FFPE

Clone	EP700Y
Isotype	Rabbit IgG
Reactivity	
Control	Normal or Ductal Breast Carcinoma



Breast ductal cell carcinoma stained with E-cadherin, 2X

In breast lesions, membranous expression of E-cadherin has been associated with ductal neoplasia. In contrast, the loss of E-cadherin is typically observed in the majority of cases (80%) of lobular neoplasia. Staining of p120 and E-cadherin has been shown in studies to be complementary and aid in the accurate categorization of ductal and lobular neoplasms, including the distinction between low-grade ductal carcinoma *in situ* and lobular neoplasia.

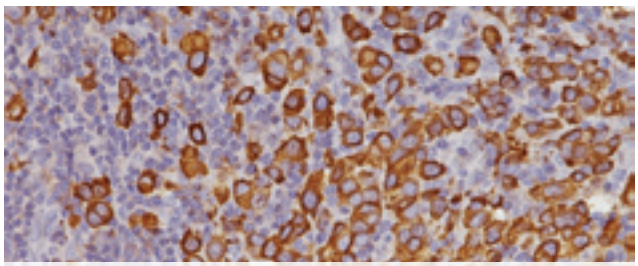
References: 1. de Deus Moura R, *et al.* Appl Immuohistochem Mol Morphol 2013; 21(1):1-12. 2. Dabbs DJ, *et al.* Am J Surg Path. 2007; 31:427-437. 3. Sarrio D, *et al.* Oncogene. 2004; 23:3272-3283. 4. Mastracci TL, *et al.* Mod Path. 2005; 18:741-751. 5. Qureshi, HS *et al.* Am J Clin Pathol. 2006; 125:377-85.

Cat. No.	Predilute API 3053 G3 supernova

EMA [E29] IVD FFPE

(Epithelial Membrane Antigen)

Clone	E29
Isotype	IgG
Reactivity	
Control	Colon and breast cancer



Breast cancer stained with EMA [E29]

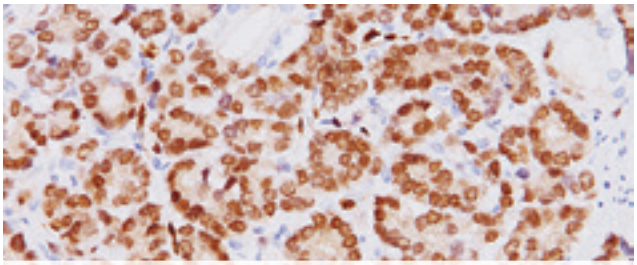
Epithelial Membrane Antigen (EMA) is considered a broad-spectrum antibody that is reactive against many types of adenocarcinoma. Breast and skin adnexal tumors are often strongly positive. Less staining is seen in carcinomas of the endometrium, kidney, thyroid, stomach, pancreas, lung, colon, ovary, prostate, and cervix. Embryonal carcinomas, medullary carcinomas of thyroid, squamous carcinomas, sarcomas, lymphomas, and melanomas all tend to be nonreactive or show rare positive cells. Transitional cell carcinomas may show weak reactivity and anaplastic large cell lymphomas can be positive for EMA.

References: 1. Verdu M, *et al.* Mod Pathol. 2011; 24(5):729-38. 2. Saad RS, *et al.* Diagn Cytopathol. 2005; 32(3):156-9. 3. Carbone A, *et al.* Cancer. 1992; 70(11):2691-8. 4. Heyderman E, *et al.* Br J Cancer. 1985; 52(3):355-61.

Cat. No.	Predilute API 3038 AA; Concentrate ACI 3038 A, C

ERG IVD FFPE

Clone	9FY
Isotype	IgG1
Reactivity	
Control	ERG+ Prostate Cancer



Prostate cancer stained with ERG

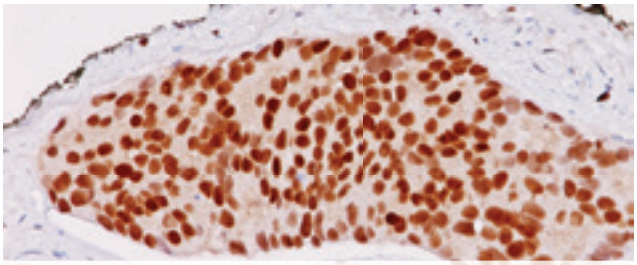
A mouse monoclonal anti-ERG antibody was developed and has been reported to provide 99.9% specificity for detecting prostatic adenocarcinomas. In addition there is a 96.5% concordance of ERG positive prostatic intraepithelial neoplasia (PIN) and ERG positive carcinoma in prostatectomy specimens. *Note: ERG [9FY] was developed by the Center for Prostate Disease Research in association with the Henry M. Jackson Foundation, Rockville, Maryland. Patent Pending.*

References: 1. Petrovics G, *et al.* Oncogene. 2005; 24:3847-3852. 2. Rosen P, *et al.* Nature Reviews Urology. 2012; 9(3):131-7. 3. Furusato B, *et al.* Prostate Cancer Prostatic Dis. 2010; 13:228-237. 4. Braun M, *et al.* Prostate Cancer Prostatic Dis. 2012; 15:165-169. 5. Miettinen M, *et al.* Amer J of Surgical Pathol. 2011; 35:432-441.

Cat. No.	Predilute PM 421 AA; Concentrate CM 421 A, C; VP Echelon VP 421 G

ERG (M), 2X IVD FFPE

Clone	9FY
Isotype	IgG1
Reactivity	
Control	ERG+ Prostate Cancer



Prostate cancer stained with ERG, 2X

A mouse monoclonal anti-ERG antibody was developed and has been reported to show 99.9% specificity for detecting prostatic adenocarcinomas. In addition, there is a 96.5% concordance of ERG positive prostatic intraepithelial neoplasia (PIN) and ERG positive carcinoma in prostatectomy specimens. ERG (M), 2X may be used in combination with AMACR (RM), 2X.

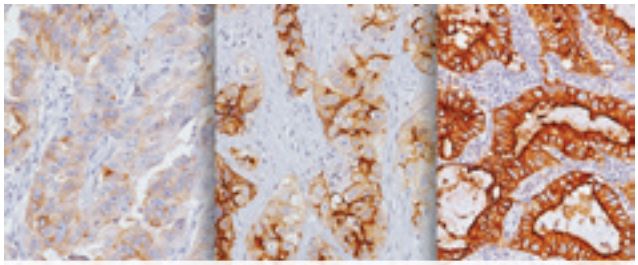
References: 1. Petrovics G, *et al.* Oncogene. 2005; 24:3847-3852. 2. Rosen P, *et al.* Nature Reviews Urology. 2012; 9(3):131-7. 3. Furusato B, *et al.* Prostate Cancer Prostatic Dis. 2010; 13:228-237. 4. Miettinen M, *et al.* Am J of Surgical Pathol. 2011; 35:432-441. 5. Trpkov K, *et al.* Am J Clin Pathol. 2009; 132:211-220.

Cat. No.	Predilute API 3017 AAK supernova

FRα IVD FFPE

(Folate Receptor Alpha)

Clone	26B3.F2
Isotype	IgG
Reactivity	
Control	LADC or Ovarian Serous Papillary ADC



Lung adenocarcinoma from L to R: 1+ staining, 2+ staining, 3+ staining

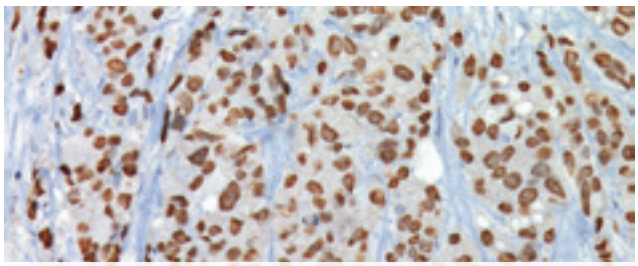
Mouse anti-human Folate Receptor alpha monoclonal antibody [26B3.F2] specifically recognizes the alpha isoform of Folate Receptor. FRalpha is primarily expressed in the apical surface of some polarized epithelial cells of normal tissues and on many cancer cells of epithelial origin. It was reported that in epithelial ovarian cancer FRalpha expression increases with tumor stage and is associated with decreased survival. In NSCLC, FRalpha was shown to be over-expressed in lung adenocarcinomas (LADC) relative to squamous cell carcinoma.

References: 1. O'Shannessy DJ, *et al.* Oncotarget. 2011; 2(12):1227-43. 2. Basal E, *et al.* PLoS One. 2009; 4:e6292. 3. Iwakiri S, *et al.* Annals of Surgical Oncol. 2008; 15(3):889-899. 4. Smith AE, *et al.* Hybridoma. 2007; 26(5): 281-288. 5. Nunez MI, *et al.* J Thorac Oncol. 2012; 7(5):833-40

Cat. No.	Predilute BRI 4006K AA; intelliPATH™ IPI 4006K G10

GATA-3 IVD FFPE

Clone	L50-823
Isotype	IgG1/Kappa
Reactivity	
Control	Bladder cancer and breast cancer



Breast cancer stained with GATA-3

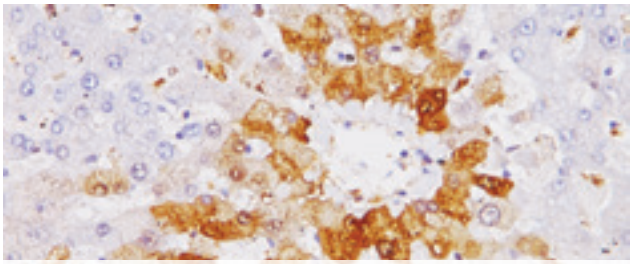
GATA-3 (GATA binding protein 3) is a member of the GATA family of transcription factors. GATA-3 appears to control a set of genes involved in the differentiation and proliferation of breast cancer. The expression of GATA-3 was shown to have a strong association with estrogen receptor-alpha (ER) expression in breast cancer, and evidence exists that GATA-3 may be used to predict response to hormonal therapy of breast cancer patients. GATA-3 has also been shown to be a novel marker for bladder cancer. In one study, GATA-3 stained 67% of 308 urothelial carcinomas but no prostate or renal carcinomas.

References: 1. Raspollini MR, *et al.* Pathologica. 2010; 102(1):33-5. 2.Esheba GE, *et al.* Am J Surg Pathol. 2009; 33(3):347-53. 3. Albergaria A, *et al.* Breast Cancer Res. 2009; 11(3):R40. 4. Kouros-Mehr H, *et al.* Cancer Cell. 2008; 13(2):141-52. 5. Parikh P, *et al.* J Am Coll Surg. 2005; 200(5):705-10. 6. Fang SH, *et al.* J Surg Res. 2009; 157(2):290-5.

Cat. No.	Predilute PM 405 AA; Concentrate CM 405 A, B

Glutamine Synthetase IVD FFPE

Clone	6/Glutamine Synthetase
Isotype	IgG2a
Reactivity	
Control	Hepatocellular Carcinoma



Liver stained with Glutamine Synthetase

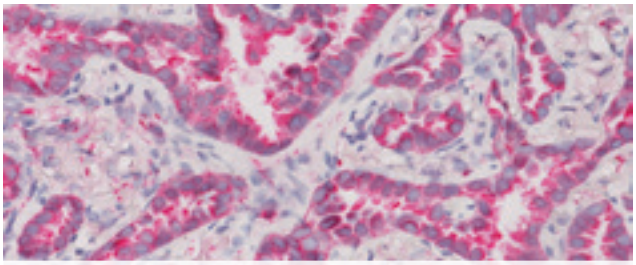
Glutamine Synthetase (GS) catalyzes the synthesis of glutamine, the major energy source of tumor cells. Accumulation of GS was first found in hepatocellular carcinoma (HCC). Liver biopsy for HCC detection is largely restricted to small hepatocellular lesions, which are often morphologically challenging, requiring careful distinction between dysplastic nodules (high-grade) and well-differentiated HCC. It was reported that when a panel of GS, Heat Shock Protein 70, and Glypican 3 is used, if any 2 of the 3 markers are positive, the sensitivity and specificity for the detection of early HCC-G1 were 72% and 100% respectively.

References: 1. Zhuang Z, *et al.* J Neurosurg. 2011; 115(4):789-95. 2. Long J, *et al.* Hepatobiliary Pancreat Dis Int. 2010; 9(3):296-305. 3. Roskams T, *et al.* Semin Liver Dis. 2010; 30(1):17-25. 4. Sakamoto M. J Gastroenterol. 2009; 44(19):108-11. 5. Di Tommaso L, *et al.* Hepatol. 2007; 45(3):725-34.

Cat. No.	Predilute API 3009 AA; Concentrate ACI 3009 A, B

Napsin A (RM) IVD FFPE

Clone	BC15
Isotype	Rabbit IgG
Reactivity	
Control	Lung adenocarcinoma



Lung adenocarcinoma stained with Napsin A

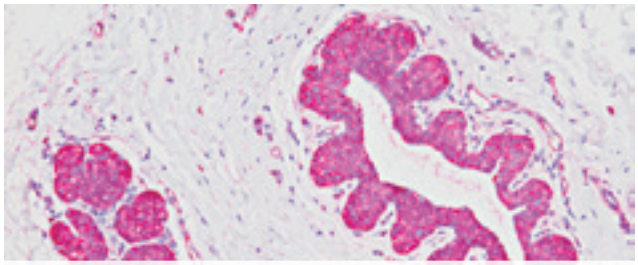
Napsin A is a pepsin-like aspartic proteinase. It is expressed in type II pneumocytes and in adenocarcinomas of the lung and kidney. Studies have shown that Napsin A is both a more sensitive and specific marker than TTF-1 and is extremely specific for lung adenocarcinomas. Most studies show Napsin A is 100% specific for lung SqCC.

References: 1. Mukhopadhyay S, *et al.* Am J Surg Pathol. 2011; 35(1):15-25. 2. Bishop JA, *et al.* Hum Pathol. 2010; 41(1):20-5. 3. Jagirdar J. Arch Pathol Lab Med. 2008; 132(3):384-96. 4. Dejmek A, *et al.* Diagn Cytopathol. 2007; 35(8):493-7. 5. Suzuki A, *et al.* Pathol Res Pract. 2005; 201(8-9):579-86. 6. Turner BM, *et al.* Arch Pathol Lab Med. 2012; 136(2):163-71.

Cat. No.	Predilute API 3043 AA; Concentrate ACI 3043 A, C

p120 Catenin, 2X IVD FFPE

Clone	98/pp120
Isotype	IgG1
Reactivity	
Control	Normal or lobular breast carcinomas



Lobular breast carcinoma *in situ* stained with p120 Catenin

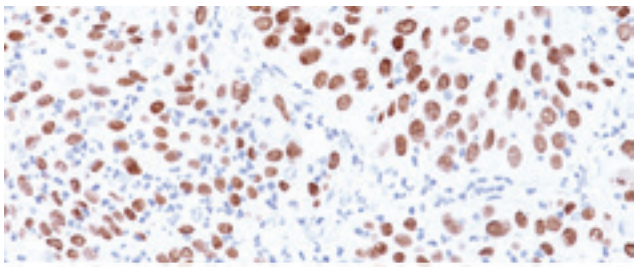
p120 is a proliferation-associated nucleolar protein found in most human malignant tumors, but not in resting normal cells. In colorectal cancer the altered localization of p120 Catenin corresponds with loss of cytoplasmic localization of E-cadherin. Studies have shown accurate categorization of ductal vs. lobular neoplasia in the breast was achieved with p120 staining. p120 expression further clarifies the separation of low-grade ductal carcinoma *in situ* from lobular neoplasia.

References: 1. Talvinen K, *et al.* J Cancer Res Clin Oncol. 2010 Sep; 136(9):1377-87. 2. Yu J, *et al.* Diagn Pathol. 2010 Jun 15; 5:36. 3. Chivukula M, *et al.* Am J Surg Pathol. 2008 Nov; 32(11):1721-6. 4. Esposito NN, *et al.* Mod Pathol. 2007 Jan; 20(1):130-8. 5. Dabbs DJ, *et al.* Am J Surg Pathol. 2007 Mar; 31(3) 427-37.

Cat. No.	Predilute API 3008 AA; Concentrate ACI 3008 A, B	**Cat. No.**	Predilute, 2X API 3052 G3 supernova

p40 (M) IVD FFPE

Clone	BC28
Isotype	IgG1
Reactivity	
Control	Lung SqCC



Lung SqCC stained with p40 (M)

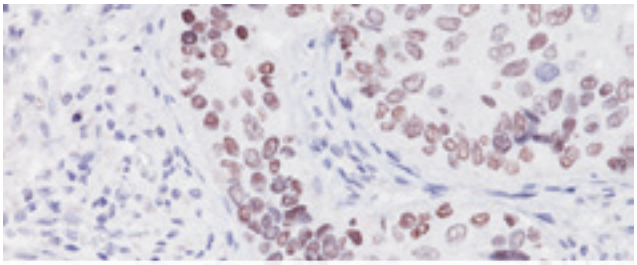
In recent studies, staining with a rabbit polyclonal anti-p40 antibody was equivalent to p63 [4A4] in sensitivity for lung SqCC, but p40 exhibited markedly superior specificity due to staining in fewer cases of lung adenocarcinoma compared to p63. This new mouse monoclonal anti p40 [BC28] demonstrated similar sensitivity and specificity, staining 65/67 (97%) cases of lung SqCC and 0/71 (0%) cases of lung ADC (in-house study). p40 has also been reported in combination with TTF-1 in a method to improve specificity for SqCC vs. ADC, while preserving limited tissue specimens.

References: 1. Bishop JA, *et al.* Mod Pathol. 2012; 25(3):405-15. 2. Nonaka D. Am J Surg Pathol. 2012; 36(6):895-9. 3. Pelosi G, *et al.* J Thorac Oncol. 2012; 7(2):281-90. 4. Brown AF, *et al.* Arch Pathol Lab Med. 2013.

Cat. No.	Predilute API 3066 AA; Concentrate ACI 3066 A, C, AA

p40 (P) IVD FFPE

Clone	N/A
Isotype	Rabbit IgG
Reactivity	
Control	Lung SqCC



Lung SqCC stained with p40 (P)

p40 recognizes the shortest variant of human p53, and may be a valuable marker in cases where p63 has traditionally been used. At present p63 is the frequently used marker for lung squamous cell carcinoma (SqCC) and is extrememly sensitive; however it suffers from specificity limitations. In a recent study, p40 staining was equivalent to p63 in sensitivity for SqCC, but exhibited markedly superior specificity vs. p63, minimizing misinterpretation of a p63-positive adenocarcinoma as squamous cell carcinoma.

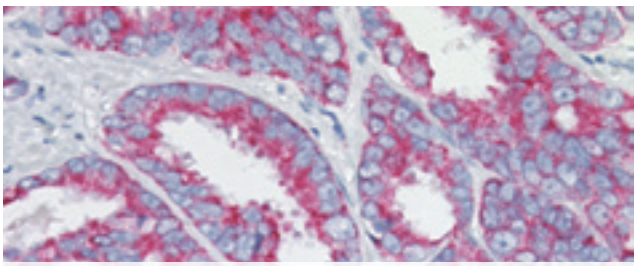
References: 1. Bishop JA, *et al.* Mod Pathol. 2011; 25:405-15. 2. Pelosi, G. *et al.* J Thorac Oncol. 2012 Feb; 7(2):281-90.

Cat. No.	Predilute API 3030 AA; Concentrate ACI 3030 A, B

P504S, 3X ASR FFPE

(Prostate)

Clone	N/A
Isotype	N/A
Reactivity	N/A
Control	N/A



Prostate cancer stained with P504S, 3X

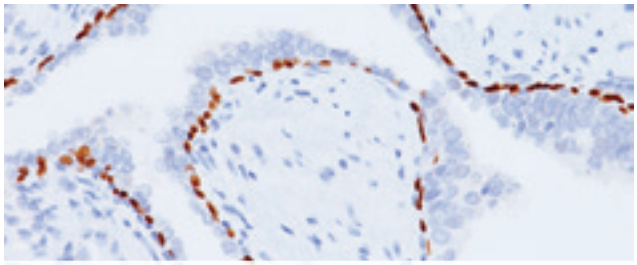
P504S, also known as β-methylacyl coenzyme A racemase (AMACR), is a peroxisomal and mitochondrial enzyme that plays a role in bile acid synthesis and β-oxidation of branched chain fatty acids. In immunohistochemistry, P504S has been shown to be a specific marker of prostatic adenocarcinoma. Additionally, prostate glands involved in PIN have been found to express P504S, whereas P504S was nearly undetectable in benign glands.

References: 1. Ferdinandusse S, *et al.* J Lipid Res. 2000; 41:1890-1896. 2. Xu J, *et al.* Cancer Res. 2000; 60:1677-1682. 3. Rubin MA, *et al.* JAMA. 2002; 287:1662-1670. 4. Luo J, *et al.* Cancer Res. 2002; 62:2220-2226. 4. Zhou M, *et al.* Am J Surg Pathol. 2002; 26:926-931. 5. Wu CL, *et al.* Hum Pathol. 2004; 35:1008-1013.

Cat. No.	Predilute APA 3054 G3, H supernova

p63, 3X IVD FFPE
(Prostate)

Clone	4A4
Isotype	IgG2a/Kappa
Reactivity	
Control	Normal prostate



Prostate tissue stained with p63, 3X

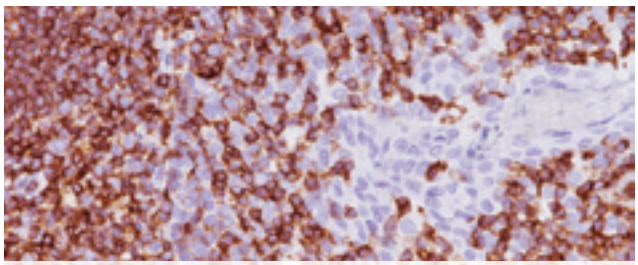
p63, a homolog of the tumor suppressor p53, has been identified in proliferating basal cells in the epithelial layers of a variety of tissues, including epidermis, cervix, urothelium, and prostate. p63 was detected in nuclei of the basal epithelium in normal prostate glands; however, it was not expressed in malignant tumors of the prostate.

References: 1. Yang A, *et al.* Mol Cell. 1998 Sep; 2(3):305-16. 2. Signoretti S, *et al.* Am J Pathol. 2000 Dec; 157(6):1769-75. 3. Tacha DE, *et al.* Appl Immunohistochem Mol Morphol. 2004 Mar; 12(1):75-8.

Cat. No.	Predilute API 3057 G3, H supernova

Pan Lymphoma IVD FFPE
(LCA+CD20+CD3+CD43)

Clone	PD7/26/16 + 2B11 + L26 + PS1 + DF-T1
Isotype	IgG1, IgG2a, Kappa
Reactivity	
Control	Tonsils or B-cell and T-cell Lymphomas



Tonsil stained with Pan Lymphoma

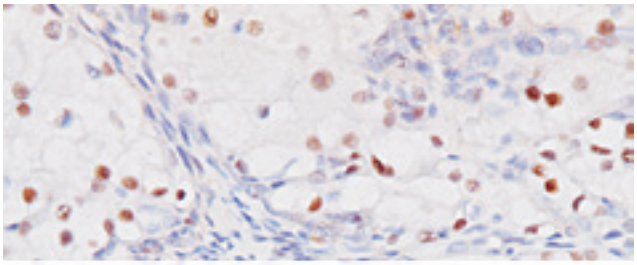
LCA (CD45), CD20, CD3, and CD43 are specific leukocyte markers used in the identification and assessment of lymphoid neoplasms. This combination of antibodies offers a broad spectrum marker for the identification of a variety of leukocytes. CD45, leucocyte common antigen (LCA), is expressed on hematopoietic cell lines, but absent on non-hematopoietic cell lines and non-hematopoietic tissues. CD43 is involved in activation of T-cells, B-cells, NK-cells, and monocytes. CD3 antigen was shown to be a highly specific marker for T-cells, and is present in T-cell neoplasms, but absent in B-cells. CD20 is a non-Ig differentiation antigen of B-cells whose expression is restricted to normal and neoplastic B-cells, but absent from other leukocytes and tissues.

References: 1. Lucas DR, *et al.*, Am J Clin Pathol. 2001; 115(1):11-7. 2. Olsen RJ, *et al.*, Arch Pathol Lab Med. 2008; 132(3):462-75. 3. Steward M, *et al.* Histopathology. 1997; 30 (1):16-22. 4. de Smet W, *et al.* Immunology. 1993; 79(1):46-54. 5. Basadonna GP, *et al.* Proc Natl Acad Sci USA. 1998; 95(7):3821-6.

Cat. No.	Predilute API 3035 AA

PAX8 (M) IVD FFPE

Clone	BC12
Isotype	IgG1
Reactivity	
Control	Kidney, Renal Cell or Serous Ovarian



Renal cell carcinoma stained with PAX8 (M)

PAX8 has been reported to be expressed in a high percentage of renal cell carcinomas and ovarian cancers. This mouse monoclonal PAX8 antibody [BC12] has been designed to target restricted epitopes, and is shown to exhibit higher specificity; providing sharper staining than the PAX8 rabbit polyclonal antibody. This mouse monoclonal antibody does not stain B-cells, nor does it recognize epitopes of pancreatic origin, or neuroendocrine cells in stomach and colon.

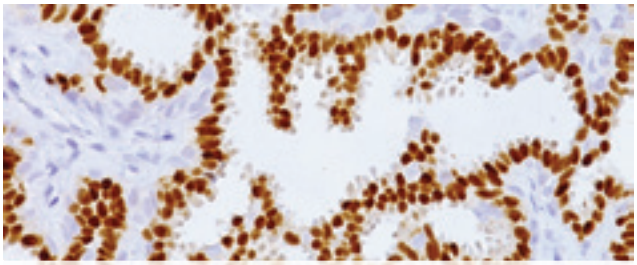
References: 1. Tacha D, *et al.* Appl Immunohistochem Mol Morphol. 2011; 19(4):293-9. 2. Lotan TL, *et al.* Am J Surg Pathol. 2009; 33(7):1037-41. 3. Viktorovia T, *et al.* Diagn Cytopathol. 2008; 36(8):568-73. 4. Narlis M, *et al.* J Am Soc Nephrol. 2007; 18(4):1121-9.

Cat. No.	Predilute API 438 AA; Concentrate ACI 438 A, B, C; VP Echelon AVI 438 G

PR [16] ASR RUO FFPE

(Progesterone Receptor)

Clone	16
Isotype	IgG1
Reactivity	
Control	N/A / PGR positive breast carcinoma



Breast cancer stained with Progesterone Receptor [16]

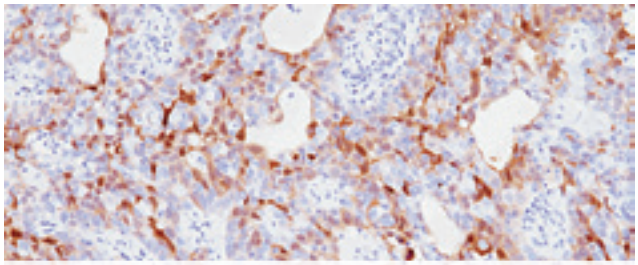
Progesterone Receptor (PR) is a well recognized predictor of prognosis and response to endocrine therapy. PR [16] is directed against the human progesterone receptor molecule. A prokaryotic recombinant protein, corresponding to the N-terminal region of the A-form of human progesterone receptor, was used as the immunogen. Antibody characterization studies demonstrated that PR [16] reacts with both A- and B- forms of human progesterone receptor in Western Blotting procedures.

References: 1. Qiu J, *et al.* Am J Clin Pathol. 2010; 134(5):813-9. 2. Arihiro K, *et al.* Am J Clin Pathol. 2007;127: 356-365. 3. Press M, *et al.* Steroids. 2002; 67(9):799-813. 4. Mote P, *et al.* J Clin Pathol. 2001; 54:624-630. 5. Bevitt D, *et al.* J of Pathol. 1997; 183:228-232.

Cat. No.	Predilute PM 424 AA; Concentrate CM 424 A, C

S100P IVD FFPE

Clone	N/A
Isotype	N/A
Reactivity	
Control	Bladder cancer



Bladder cancer stained with S100P

Placental S100 (S100P) is a member of S100 protein family, whose members function as extracellular and intracellular regulators of diverse cellular processes. S100P expression has been detected in human tumor cell lines derived from breast, prostate, pancreas, lung, and colon; and is associated with a malignant phenotype, hormone independence, and chemotherapy resistance. Over-expression of S100P promoted tumorigenesis and metastasis in diverse cancer models. Recent studies have shown that S100P is highly expressed in both the cytoplasm and nucleus of cells in poorly differentiated bladder cancers.

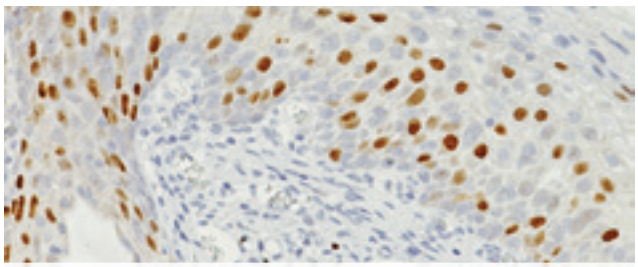
References: 1. Esheba GE, *et al.* Am J Surg Pathol. 2009; 33(3):347-53. 2. Chuang AY, *et al.* Am J Surg Pathol. 2007; 31(8):1246-55. 3. Higgins JP, *et al.* Am J Surg Pathol. 2007; 31(5):673-80. 4. Gibadulinova A, *et al.* Amino Acids. 2011; 41(4):885-92. 5. Deng H, *et al.* Am J Clin Pathol. 2008; 129(1):81-8. 6. Shiota M, *et al.*, BJU Int. 2011; 107(7):1148-53.

Cat. No.	Predilute API 3010 AA; Concentrate ACI 3010 A, B

Topo IIa IVD FFPE

(Topoisomerase II alpha)

Clone	31
Isotype	IgG1
Reactivity	
Control	Cervix or tonsil



Normal cervix stained with Topoisomerase II alpha

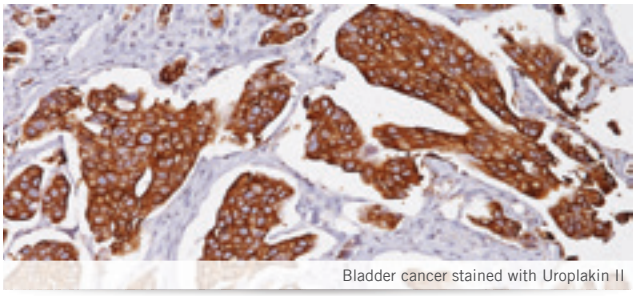
Topoisomerase II alpha (Topo IIa) plays an important role in DNA synthesis and RNA transcription, as well as chromosomal segregation during mitosis. It is reported to be a sensitive and specific marker of late S-, G2-, & M-phases in transformed and developmentally regulated normal cells. Topo IIa is also implicated in drug resistance of tumor cells and has been shown to be over-expressed in many human cancers. Decreased expression of Topo IIa is the predominant mechanism of resistance to several chemotherapeutic agents.

References: 1. Gao XH, *et al.* Int J Colorectal Dis. 2012; 27(4):429-35. 2. Nikolényi A, *et al.* Oncology. 2011; 80(3-4):269-77. 3. Karnes RJ, *et al.* Cancer Res. 2010; 70(22):8994-9002. 4. Ferrandina G, *et al.* Br J Cancer. 2008; 98(12):1910-5. 5. Kim EJ, *et al.* Urology. 2010; 75(6):1516.e9-13.

Cat. No.	Predilute API 3045 AA; Concentrate ACI 3045 A, B

Uroplakin II IVD FFPE

Clone	BC21
Isotype	IgG1/kappa
Reactivity	
Control	Normal bladder or urothelial carcinoma



Bladder cancer stained with Uroplakin II

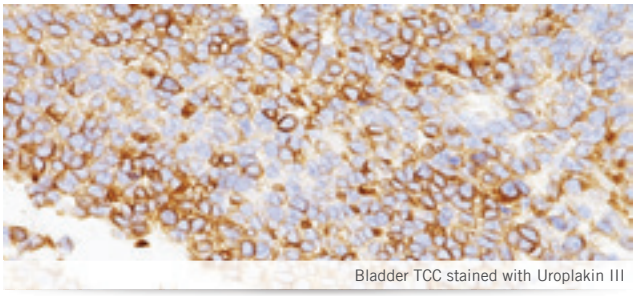
Studies have shown Uroplakin II mRNA was highly and specifically expressed in both bladder cancer tissues and peripheral blood of patients with primary and metastatic urothelial carcinoma of the bladder. This new Uroplakin II [BC21] exhibits an increased sensitivity (46/59, 78%) when compared to Uroplakin III [AU1] (191/56, 34%) in cases of urothelial carcinoma of the bladder, and was 100% specific (in-house study). (Patent Pending).

References: 1. Wu XR, *et al.* Kidney Int. 2009; 75(11):1153-65. 2. Wu X, *et al.* J Urol. 2005; 174(6):2138-42. 3. Lu JJ, *et al.* Clin Cancer Res. 2000; 6(8):3166-71. 4. Li SM, *et al.* J Urol. 1999;162(3 Pt 1):931-5.

Cat. No.	Predilute API 3051 AA; Concentrate ACI 3051 A, C

Uroplakin III IVD FFPE

Clone	BC17
Isotype	IgG1
Reactivity	
Control	Bladder cancer



Bladder TCC stained with Uroplakin III

Uroplakin III [BC17] is a newly developed clone, which has demonstrated a higher sensitivity (33/59, 56%), compared with clone AU1 (19/58, 32%) on urothelial transitional cell carcinomas (in an in-house study). Clone BC17 is highly specific to uroepithelial tumors (negative in breast, lung, colon, prostate, kidney, ovarian, liver, and normal and neoplastic tissues) and may be useful in the discrimination of bladder, renal, and prostate cancers.

References: 1. Matsumoto K, *et al.* Urology. 2008; 72(2):444-9. 2. Moll UM, Clin Cancer Res. 2003; 9(15):5437-41. 3. Brown HM, *et al.* Hum Pathol. 2002; 33(5):545-8 4. Riedel I, *et al.* Virchows Arch. 2001; 438(2):181-91. 5. Moll R, *et al.* Verh Dtsch Ges Pathol. 1993; 77: 260-5. 6. Olsburgh J, *et al.*, J Pathol. 2003; 199(1): 41-9.

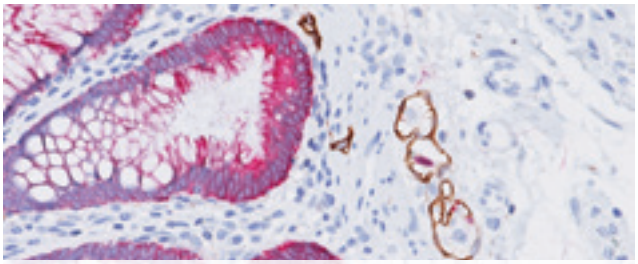
Cat. No.	Predilute API 3023 AA; Concentrate ACI 3023 A, C

Multiplex IHC™

Biocare Medical's innovative range of Multiplex IHC products, including novel antibody combinations and highly sensitive multiplex detection technology, offer an expanding portfolio of integrated products to address the growing cancer, infectious disease and research markets. The Multiplex IHC™ product line allows for simultaneous testing of distinct markers; to aid in solving clinical problems and simplifying interpretation, while conserving precious patient tissue. With key products for prostate, breast, lung and bladder disease detection, we can offer the clinical IHC laboratory a set of tools to aid in cancer detection when interpreted by a qualified pathologist.

D2-40 + CK8/18 RUO FFPE

Clone	D2-40 + EP17/EP30
Isotype	IgG1 + Rabbit IgG
Reactivity	
Control	Normal breast or breast carcinoma



Lymphatic vessels stained with D2-40 (DAB) and colon cancer stained with CK8/18 (FR)

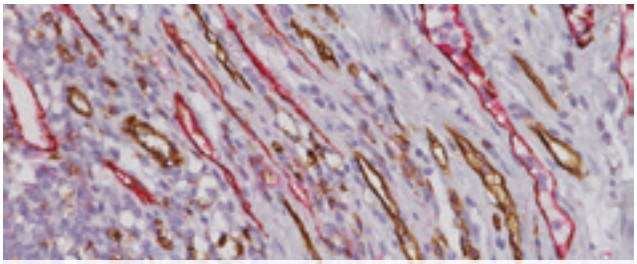
In studies, D2-40 has shown a staining reaction in lymphatic channel endothelium, but not in the adjacent capillaries. Cytokeratin 8/18 (CK8/18) has been shown to stain most carcinomas such as liver, prostate, pancreatic, lung, breast, and colon cancers. Labeling lymphatic endothelium with D2-40, and carcinomas with CK8/18 in a single section, may simplify the evaluation and assessment of lymphatic microinvasion.

References: 1. Yaman S, *et al.* Am Surg. 2012, 78(11):1238-42. 2. Saad RS, *et al.* Int J Gynecol Pathol. 2010; 29(4):386-93. 3. Saad RS, *et al.* Mod Pathol. 2006; 19(10):1317-23. 4. Moll R, *et al.* Histochem Cell Biol. 2008; 129(6):705-33. 5. Barak V, *et al.* Clin Biochem. 2004; 37(7):529-40.

Cat. No.	Predilute APR 3034DS AA

D2-40 + CD31 RUO FFPE

Clone	D2-40 + EP78
Isotype	IgG1 + Rabbit IgG
Reactivity	
Control	Colon cancer



Lymphatic and blood vessels stained with D2-40 + CD31

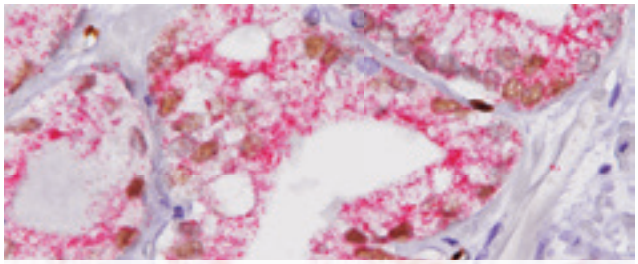
In studies, D2-40 effectively marked the lymphatic channel endothelium, but not the adjacent capillary. CD31, also known as PECAM-1, labels endothelial cells of arteries, arterioles, venules, veins, and non-sinusoidal capillaries in various tissues. In addition, CD31 has been used to evaluate vascular invasion of tumors and assess angiogenesis. The combination of D2-40 and CD31 can serve as a co-marker for both lymphatic density and blood vascular studies.

References: 1. Yaman S, *et al.* Am Surg. 2012; 78(11):1238-42. 2. Engel CJ, *et al.* Am J Surg Pathol. 1996; 20(10):1260-5. 3. El-Gohary YM, *et al.* Breast J. 2009; 15(3):261-7. 4. Saad RS, *et al.* Int J Gynecol Pathol. 2010; 29(4):386-93. 5. El-Gohary YM, *et al.* Am J Clin Pathol. 2008; 129(4):578-86. 5. Renyi-Vamos F, *et al.* Clin Cancer Res. 2005; 11(20):7344-53.

Cat. No.	Predilute APR 3021DS AA

ERG + AMACR RUO FFPE

Clone	9FY + 13H4
Isotype	IgG1 + Rabbit IgG
Reactivity	
Control	ERG+ prostate cancer &/or PIN glands



Prostate cancer stained with ERG + AMACR

It is reported that there is a 96.5% concordance between the TMPRSS2:ERG rearrangement and ERG-positive prostatic intraepithelial neoplasia (PIN) and ERG positive carcinoma in prostatectomy specimens. In a recent study AMACR showed diffuse or focal positivity in cancer, high grade PIN, and atypia in 96.8%, 85%, and 80% of cases, respectively. *Note: ERG [9FY] was developed by the Center for Prostate Disease Research in association with the Henry M. Jackson Foundation, Rockville, Maryland. Patent Pending.*

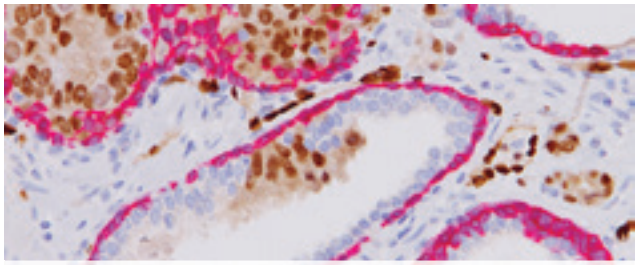
References: 1. Petrovics G, *et al.* Oncogene. 2005; 24(23):3847-3852. 2. Kumar-Sinha C, *et al.* Nat Rev Cancer. 2008; 8(7):497-511. 3. Furusato B, *et al.* Prostate Cancer Prostatic Dis. 2010; 13(3):228-237. 4. Mohamed AA, *et al.* Cancer. 2010; 1:197-208. 5. Miettinen M, *et al.* Am J of Surg Pathol. 2011; 35(3):432-441. 6. Trpkov K, *et al.* Am J Clin Pathol. 2009; 132(2):211-220.

Cat. No.	Predilute APR 3013DS AA

ERG-2™ IVD FFPE

(ERG + CK5)

Clone	9FY + EP1601Y
Isotype	IgG1 + N/A
Reactivity	
Control	ERG+ prostate cancer &/or PIN glands



ERG positive prostate cancer stained with ERG-2 (ERG + CK5)

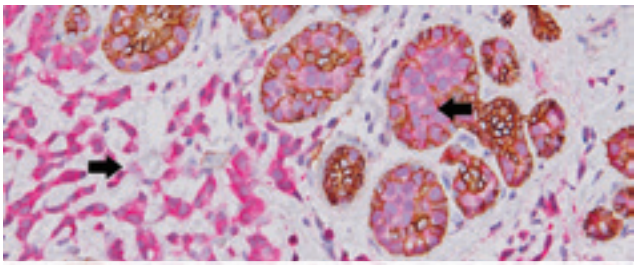
It was reported that there is a 96.5% concordance between the TMPRSS2:ERG rearrangement and ERG-positive prostatic intraepithelial neoplasia (PIN) and ERG positive carcinoma in prostatectomy specimens. CK5 stains normal basal cell layers in prostate, benign prostate hyperplasia (BPH), and PIN. The combination of ERG + CK5 provides a unique stain that helps to visualize ERG positive PINs. *Note: ERG [9FY] was developed by the Center for Prostate Disease Research in association with the Henry M. Jackson Foundation, Rockville, Maryland. Patent Pending.*

References: 1. Kumar-Sinha C, *et al.* Nat Rev Cancer. 2008; 8(7):497-511. 2. Furusato B, *et al.* Prostate Cancer Prostatic Dis. 2010; 13(3):228-237. 3. Mohamed AA, *et al.* J Cancer. 2010; 1:197-208. 4. Miettinen M, *et al.* Am J of Surg Pathol. 2011; 25(3):432-441. 5. Dalfior D, *et al.* Pathology. 2010; 42(1):1-5. 6. Abrahams NA, *et al.* Am J Clin Pathol. 2003; 120(3):368-76.

Cat. No.	Predilute API 437DS AA; VP Echelon AVI 437DSK

p120 + E-cadherin IVD FFPE

Clone	98/pp120 + EP700Y
Isotype	IgG1 + Rabbit IgG
Reactivity	
Control	Ductal and lobular carcinomas



Lobular hyperplasia with invasive lobular carcinoma stained with p120 + E-cadherin

Studies have shown that E-cadherin is useful in the distinction of ductal neoplasia vs. lobular; however as a negative marker for lobular neoplasia, it can be difficult to interpret. p120 displays membrane staining in ductal carcinoma and cytoplastmic staining in lobular carcinoma. Studies have also shown accurate categorization of ductal vs. lobular neoplasia in the breast with p120 Catenin + E-cadherin which may help give further clarification in the separation of low-grade ductal carcinoma *in situ* from lobular neoplasia.

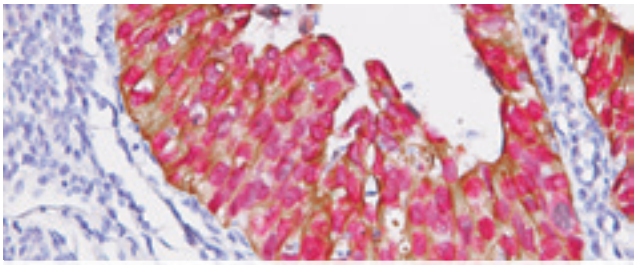
References: 1. Esposito NN, *et al.* Mod Pathol. 2007; 20(1):130-8. 2. Dabbs DJ, *et al.* Am J Surg Pathol. 2007; 31(3):427-37. 3. Bellovin DI, *et al.* Cancer Res. 2005; 65(23):10938-45. 4. de Deus Moura R, *et al.* AIMM. 2013; 21(1):1-12.

Cat. No.	Predilute API 3011DS AA

Uro-2™ IVD FFPE

(CK20 + p53)

Clone	Ks20.8 + Y5
Isotype	IgG2a + IgG
Reactivity	
Control	p53 positive bladder or colon cancers

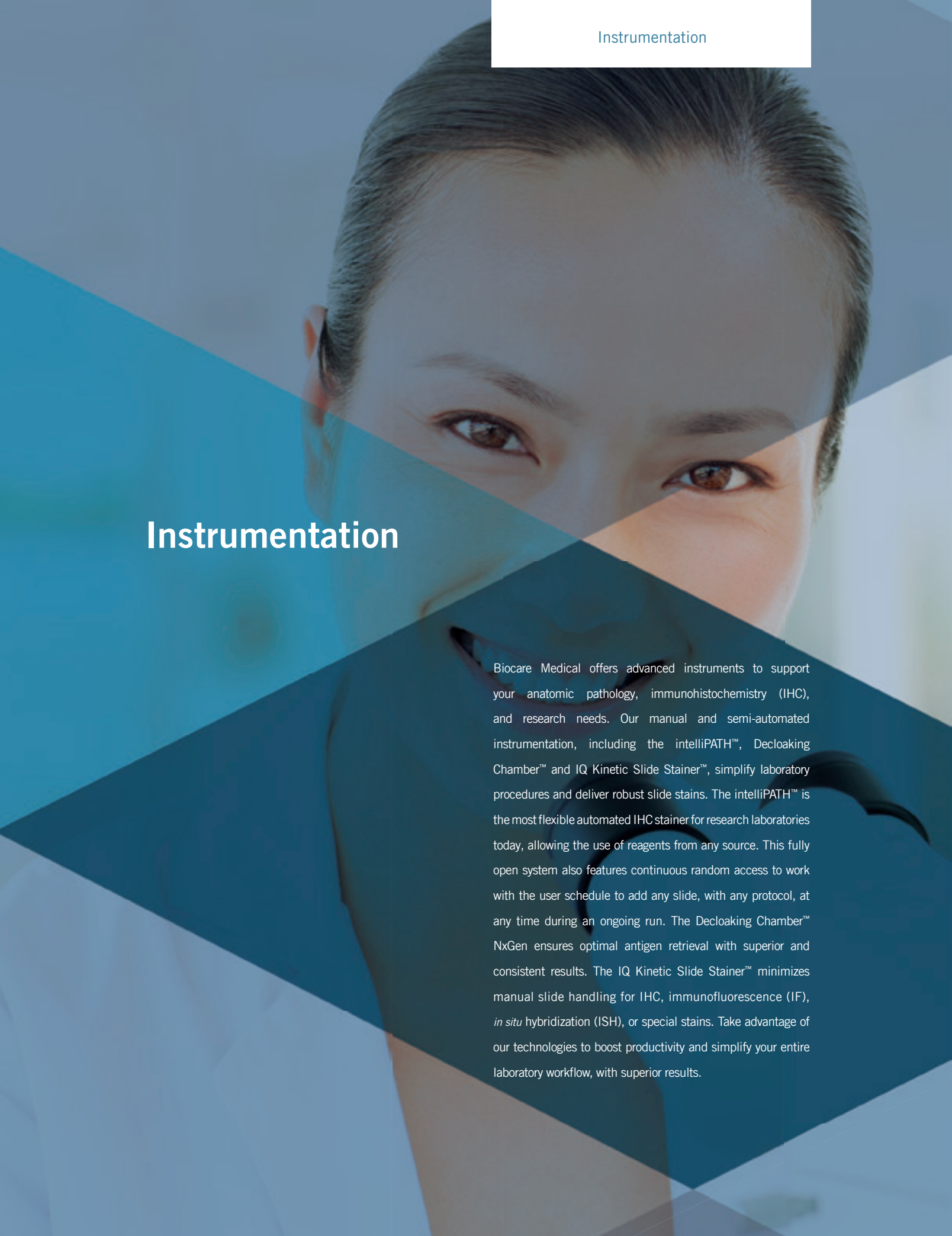


Bladder carcinoma *in situ* stained with Uro-2™ (CK20 (DAB) + p53 (FR))

Studies have shown that in normal urothelium, the superficial umbrella cell layer shows reactivity for CK20 only; whereas, p53 nuclear staining is weak to non-existent. For urothelium with reactive atypia, particularly in cases with marked atypia, CK20 and p53 staining remain identical to those seen in normal urothelium. In cases of CIS, diffuse, strong cytoplasmic reactivity is observed for CK20; while diffuse, nuclear reactivity for p53 is observed throughout the urothelium.

References: 1. Russo S, *et al.* Pathologica. 2007; 99(2):46-9. 2. McKenney JK, *et al.* Am J Surg Pathol. 2001; 25(8):1074-8. 3. Sun W, *et al.* Appl Immunohistochem Mol Morphol. 2002; 10(4):327-31. 4. Mallofré, *et al.* Mod Pathol. 2003; 16(3):187-91.

Cat. No.	Predilute API 3001DS AA



Instrumentation

Biocare Medical offers advanced instruments to support your anatomic pathology, immunohistochemistry (IHC), and research needs. Our manual and semi-automated instrumentation, including the intelliPATH™, Decloaking Chamber™ and IQ Kinetic Slide Stainer™, simplify laboratory procedures and deliver robust slide stains. The intelliPATH™ is the most flexible automated IHC stainer for research laboratories today, allowing the use of reagents from any source. This fully open system also features continuous random access to work with the user schedule to add any slide, with any protocol, at any time during an ongoing run. The Decloaking Chamber™ NxGen ensures optimal antigen retrieval with superior and consistent results. The IQ Kinetic Slide Stainer™ minimizes manual slide handling for IHC, immunofluorescence (IF), *in situ* hybridization (ISH), or special stains. Take advantage of our technologies to boost productivity and simplify your entire laboratory workflow, with superior results.

Decloaking Chamber™ NxGen

The Decloaking Chamber™ NxGen has been designed for heat-induced epitope retrieval (HIER) and ease of use. It has 5 discrete temperature settings ranging between 60ºC and 110ºC with user programmable times. The 110ºC antigen retrieval protocol can be completed from start to finish in under an hour. With a 72 total slide capacity and only minutes of hands-on time per run, the NxGen offers a walk-away capability similar to automated staining instruments.

The Decloaking Chamber NxGen transfers run data to a USB drive for export to a user's computer. The run data recorded includes the date and time per run with temperature and pressure readings throughout. With the Decloaking Chamber NxGen recalling the settings from the last run, a quick start of the same protocol is possible.

The Decloaking Chamber is an excellent tool for HIER. The proper use of heat and pressure in conjunction with the appropriate buffer solutions is of the utmost importance for consistent immunohistochemistry (IHC) staining. The Decloaking Chamber is designed to optimize and standardize antibody staining procedures and has been engineered to pass strict laboratory safety and quality control requirements. Temperature, pressure and time can be monitored and recorded with the Decloaking Chamber to produce consistent staining.

Specifications	
Dimensions (W x H x D)	14.2" x 13.5" x 13" / 36.1 cm x 34.3 cm x 33.0 cm
Weight	13 lbs / 6.91 kg
Temperature range	60ºC - 110ºC (+/- 5ºC)
Slide capacity	72 total slides (3 slide canisters of 24 slides each)
Power requirements	115V, 60Hz, 1000W (110V); 230V, 50Hz, 1000W (220V)

Ordering Information	**Cat. No.**
Decloaking Chamber NxGen (For use in 110V markets)	DC2012
Decloaking Chamber NxGen (For use in 220V markets)	DC2012-220V

Ancillaries	**Cat. No.**
Metal Slide Canister, 3 Pack	DCA004-3PK
Sealing Gasket Kit	DCA061
Basket, Rack Holder DC2012	DCA125

IQ Kinetic Slide Stainer™

2 Digital Hot Bars™, 1 Waste Basin, 1 Orbital Shaker

The IQ Kinetic Slide Stainer™ offers the flexibility and reliable performance that both clinical and research investigators need for today's complex assays. This open system staining platform can be adapted for immunohistochemistry (IHC), *in situ* hybridization (ISH), immunofluorescence, or special stains.

It features an innovative 45-degree tilt-action rack that eliminates individual slide handling and prevents cross-contamination. The programmable Digital Hot Bar™ enables the user to elevate the temperature up to 95°C, and use the slide rack lids to create a humidity chamber.

The Orbital Shaker provides smooth agitation action for the reagents on the slides. The combination of heat and agitation allows tissues to be evenly and intensely stained by accelerating enzymatic or hybridization reactions and increasing reagent specificity.

The IQ2000 is supplied as 2 Digital Hot Bars™ with the three space waste basin and an orbital shaker. This provides the lab with the option to expand to 3 Digital Hot Bars™ should there be an increase in daily slide quantity.

Specifications	
Dimensions (W x H x D)	23" x 15" x 19" / 58 cm x 38 cm x 48 cm
Weight	25 lbs / 11.3 kg (without Orbital Shaker)
Temperature range	20ºC - 95ºC (+/- 4ºC)
Slide capacity	Up to 24 slides (1" x 3")
Power requirements	100-200 VAC, 60 Hz (110V); 200-240 VAC; 50 Hz (220V)

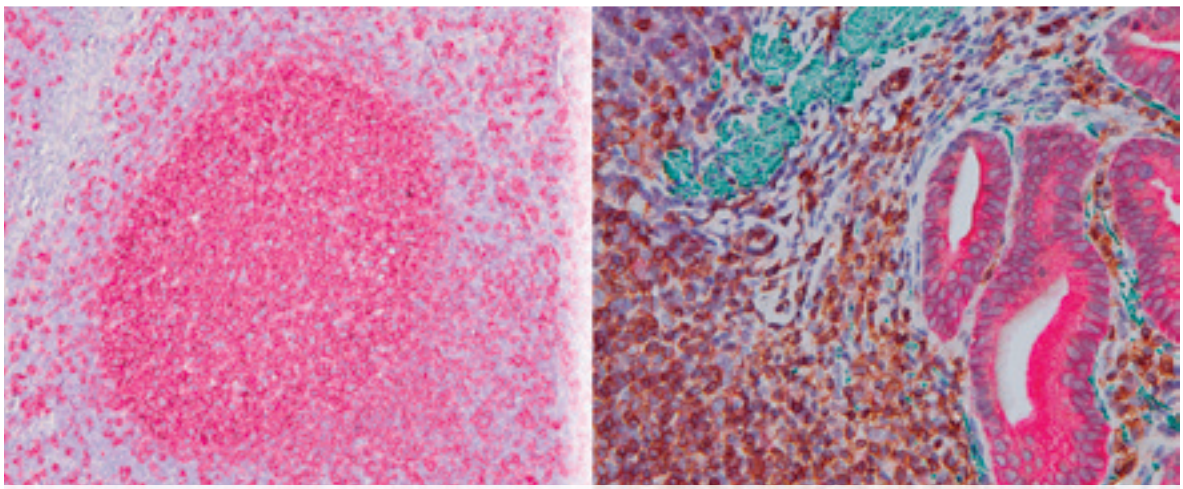
Ordering Information	**Description**	**Cat. No.**
IQ2000 (For use in 110V markets)	2 Digital Hot Bars™, 1 Waste Basin, 1 Orbital Shaker	IQ2000US
IQ2000 (For use in 220V markets)	2 Digital Hot Bars™, 1 Waste Basin, 1 Orbital Shaker	IQ2000INTL

Ancillaries	**Volume**	**Cat. No.**
IQ Aqua Sponge	3-pack	IQ030
Thermal Test Strips	(30-65ºC, 49-71ºC, 77-120ºC) 1 box (10 tests)	TS002 A, TS001 A, TS003 A
Digital Hot Bar™	1 each	IQ105

Detection

Select from Biocare Medical's collection of micro-polymer detections and chromogens for utmost sensitivity, specificity and reliability. With formulations designed for both human and animal tissues, Biocare's detection systems are the most specific, sensitive, clean, and reproducible biotin-free detection technology. Our innovative micro-polymer detection technology enables superior antigen access, giving unsurpassed specificity and sensitivity. The ability to further dilute primary antibodies provides reagent and cost savings as well as higher specificity, potentially eliminating false positives. To complement our Horseradish Peroxidase (HRP) and Alkaline Phosphatase (AP) enzyme labels, Biocare Medical offers a large variety of IHC-specific permanent chromogens. With five HRP and two AP colors available, the IHC end-results can be tailored to best suit the assay. Biocare's large selections of chromogen colors are vivid and clear under bright-field microscopy.

Canine AP-Polymer Detection RUO



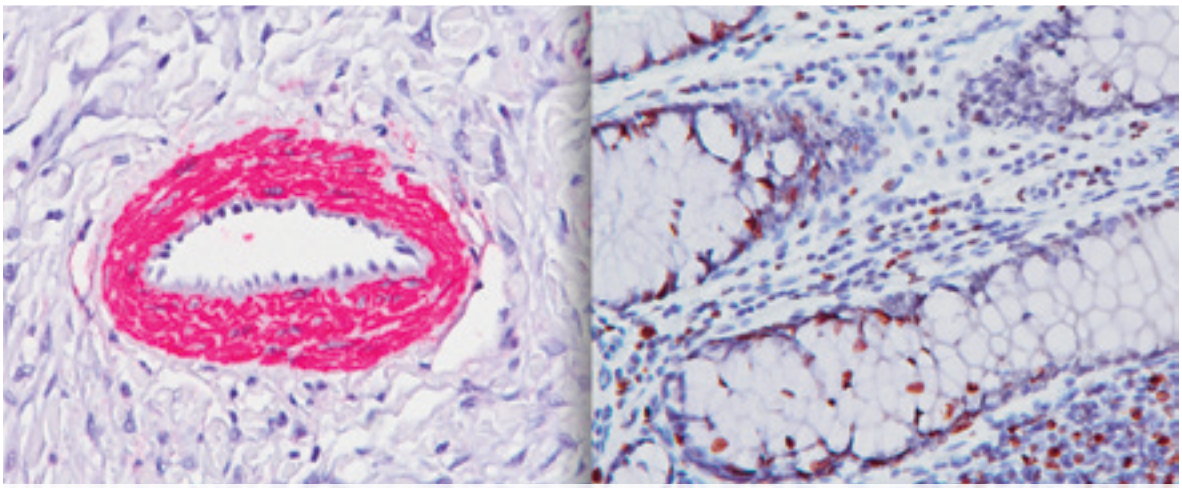
(Left) Dog tonsil stained with CD20 (P); (Right) Feline colon stained with CD20 (DAB) + Muscle Specific Actin (Vina Green) + CK8 (WR)

All PromARK™ micro-polymer detection systems are designed specifically for use on animal tissues. The Mouse-on-Canine AP-Polymer and the Rabbit-on-Canine AP-Polymer are specially intended for detection of mouse or rabbit primary antibodies, respectively, on canine and feline tissues. The advanced one-step polymer technology virtually eliminates cross-reactivity to endogenous canine and feline IgGs, increases sensitivity and reduces IHC steps (no Avidin/Biotin block or Link/Probe). Proprietary blockers included in the detection reagents permit the use of any of Biocare's retrieval solutions or enzyme digestion. The canine polymer detections can be used with paraffin-embedded tissues, floating sections and frozen sections and are suitable for both manual and automated systems such as the intelliPATH™.

For Multiplex IHC™ detection the Mouse-on-Canine Polymer may be combined in equal volumes with the Rabbit-on-Canine Polymer to prepare a detection solution that will simultaneously label a mouse antibody and a rabbit antibody. These new additions to Biocare's PromARK™ series expand IHC detection applications to a broader range of animal tissues, resulting in increased research capability.

Cat. No.	Mouse-on-Canine AP-Polymer: BRR 4003 G, H, L
Cat. No.	Rabbit-on-Canine AP-Polymer: BRR 4004 G, H, L

Mouse-on-Farma Polymer Detection RUO



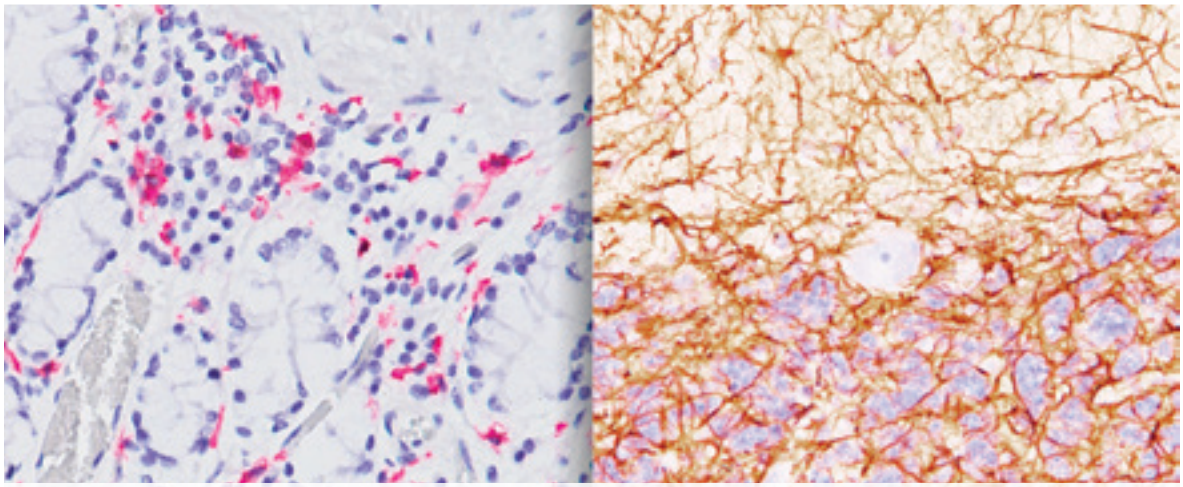
(Left) Muscle Specific Actin on equine artery; (Right) Ki-67 on porcine colon

All PromARK™ micro-polymer detection systems are designed specifically for use on animal tissues. The Mouse-on-Farma HRP-Polymer and the Mouse-on-Farma AP-Polymer are specially intended for detection of mouse primary antibodies on bovine, equine, porcine and ovine tissues. The advanced one-step polymer technology virtually eliminates cross-reactivity to endogenous bovine, equine, porcine, and ovine IgGs, increases sensitivity and reduces IHC steps (no Avidin/Biotin block or Link/Probe). In most cases, tissues do not require a protein block. These polymer detections are usable with any of Biocare Medical's retrieval solutions or enzyme digestion. The Farma polymer detections can be used with paraffin-embedded tissues and are suitable for both manual and automated systems such as the intelliPATH™.

For Multiplex IHC™ detection the Mouse-on-Farma Polymer may be combined in equal volumes with the Rabbit-on-Farma Polymer to prepare a detection solution that will simultaneously label a mouse antibody and a rabbit antibody. These new additions to Biocare's PromARK™ series expand IHC detection applications to a broader range of animal tissues, resulting in increased research capability.

Cat. No.	Mouse-on-Farma HRP-Polymer: BRR 4002 G, H
Cat. No.	Mouse-on-Farma AP-Polymer: BRR 4010 G, H

Rabbit-on-Farma Polymer Detection RUO



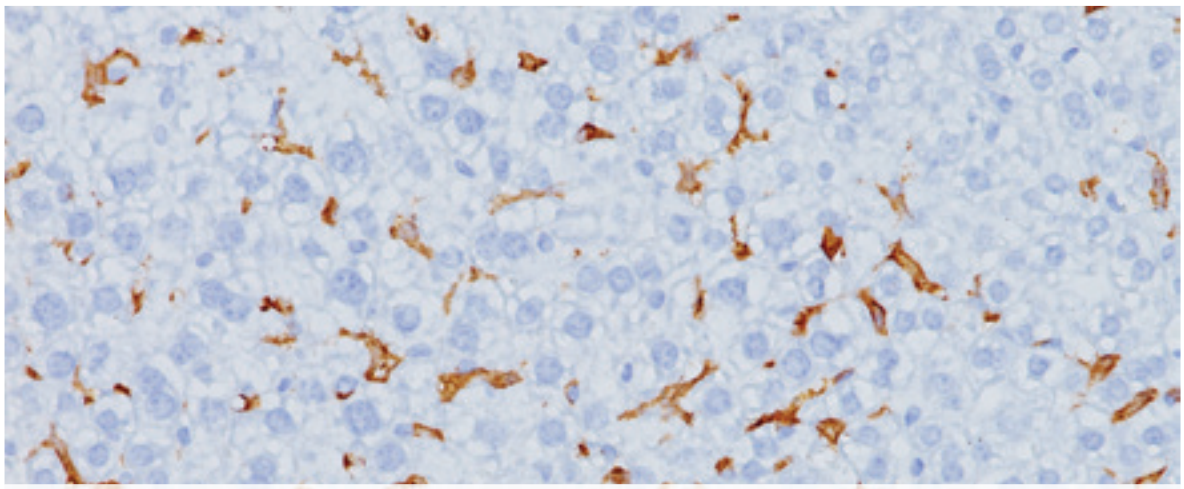
(Left) Microglia on ovine colon (macrophages); (Right) Dog brain stained with GFAP

All PromARK™ micro-polymer detection systems are designed specifically for use on animal tissues. The Rabbit-on-Farma HRP-Polymer and the Rabbit-on-Farma AP-Polymer are specially intended for detection of rabbit primary antibodies on bovine, equine, porcine and ovine tissues. The advanced one-step polymer technology virtually eliminates cross-reactivity to endogenous bovine, equine, porcine, and ovine IgGs, increases sensitivity and reduces IHC steps (no Avidin/Biotin block or Link/Probe). In most cases, tissues do not require a protein block. These polymer detections are usable with any of Biocare's retrieval solutions or enzyme digestion. The Farma polymer detections can be used with paraffin-embedded tissues and are suitable for both manual and automated systems such as the intelliPATH™.

For Multiplex IHC™ detection the Rabbit-on-Farma Polymer may be combined in equal volumes with the Mouse-on-Farma Polymer to prepare a detection solution that will simultaneously label a mouse antibody and a rabbit antibody. These new additions to Biocare's PromARK™ series expand IHC detection applications to a broader range of animal tissues, resulting in increased research capability.

Cat. No.	Rabbit-on-Farma HRP-Polymer: BRR 4009 G, H
Cat. No.	Rabbit-on-Farma AP-Polymer: BRR 4011 G, H

Rat HRP-Polymer, 1-Step (Mouse adsorbed) RUO



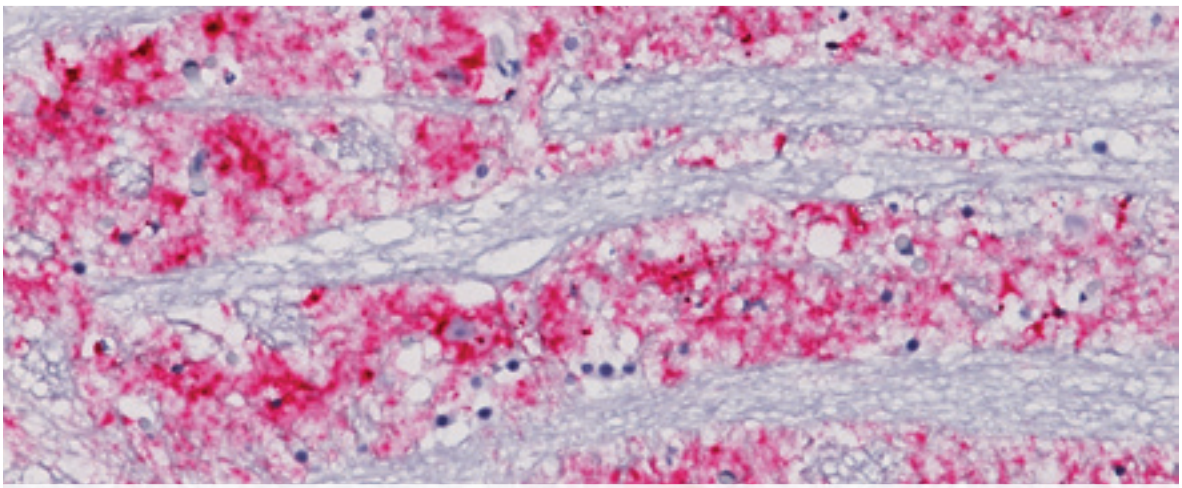
Macrophages stained with rat monoclonal F4/80 using Rat-HRP Polymer

All PromARK™ micro-polymer detection systems are designed specifically for use on animal tissues. The Rat HRP-Polymer, 1-Step is a single step detection horseradish peroxidase (HRP) polymer for IHC of rat primary antibodies on mouse tissue. It offers the convenience and sensitivity of a polymer detection system while reducing the number of required IHC steps (no Avidin/ Biotin block or Link/Probe). It is specifically formulated to improve specificity and reduce background staining on mouse tissues.

The elimination of mouse IgG can be a persistent problem in achieving optimal staining of mouse tissues. In addition to the mouse adsorbed Rat HRP-Polymer detection, Biocare offers reagents that may further reduce unwanted background staining. Adding XM Factor directly to the Rat HRP-Polymer, 1-Step may further reduce endogenous mouse IgG background staining. Rodent Block M may also be used to reduce nonspecific background staining. Rodent Decloaker, an antigen retrieval solution, is specifically formulated to reduce and/or eliminate non-specific background staining due to endogenous mouse and rat IgG.

Cat. No.	BRR 4016 G, H, L

Prion IHC Assay Kit A RUO



Prion-positive sheep brain stained with Prion IHC Assay Kit

Prions, or more specifically- plaques of the PrPres protein, are the causative agents of TSEs. The manifestation of prion infection in sheep is Scrapie. Scrapie is a fatal neurodegenerative disease that can have significant impact on the economic and physical viability of a sheep flock. In moose, elk, and deer, TSE is presented as Chronic Wasting Disease (CWD). When a TSE infection is suspected in a sick or deceased animal, prion detection by IHC is the "gold standard" method for verifying that the illness was Scrapie or CWD.

The Prion IHC Assay is part of a complete package of product offerings based on our established protocol for Scrapie and CWD detection.

Key components of this package include:

- Decloaking Chamber™ 2002 or 2008
- Diva Decloaker
- Biocare's Prion IHC Assay (2 components: Kit A & Kit B)
- intelliPATH™ automated slide stainer

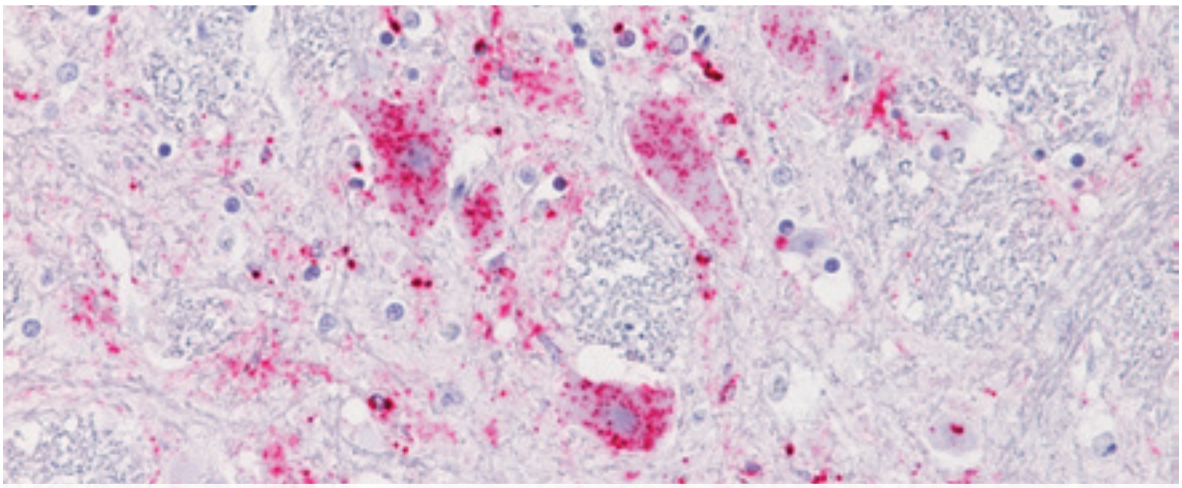
Biocare's Prion IHC Assay Kit A consists of anti-prion antibody (MAb F99), blocking reagents, alkaline phosphatase micro-polymer detection and chromogen for detection of the PrPres protein in infected tissues from sheep, mule deer, white-tailed deer, elk, or moose. This streamlined kit is configured for use on the intelliPATH™ automated slide stainer, and contains sufficient reagents for immunohistochemistry of approximately 50 slides of FFPE tissue sections.

Prion IHC Assay Kit B (IPR 5033K G80, provided separately) contains hematoxylin counterstain and bluing solution. Use Prion IHC Assay Kit A and Kit B together for Scrapie and Chronic Wasting Disease detection.

References: 1. O'Rourke, K.I., *et al.* J. Clin. Microbiol. 2000; 38(9):3254-3259. 2. Spraker, T.R., *et al.* J. Vet. Diagn. Invest. 2002; 14(1):3-7. 3. Nonno, R., *et al.* J. Clin. Microbiol. 2003; 41(9):4127-4133. 4. Valdez, R.A., *et al.* J. Vet. Diagn. Invest. 2003; 15(2):157-162.

Cat. No.	IPR 5030K G15

Prion IHC Assay Kit B RUO



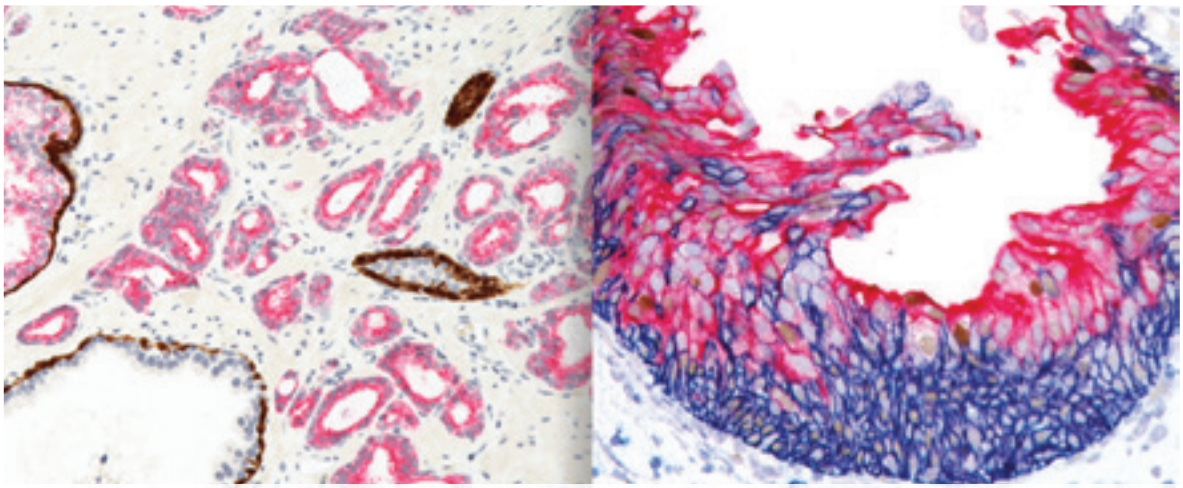
Prion-positive cow brain stained with Prion IHC Assay Kit

Prion IHC Assay Kit B (IPR 5033K G80) contains hematoxylin counterstain and bluing solution formulated for use with Prion IHC Assay Kit A (IPR 5030K G15). The kit is also configured for use on the intelliPATH Automated Slide Stainer. The kit contains reagent quantities sufficient for immunohistochemistry of approximately 250 slides of formalin-fixed paraffin-embedded tissue sections. Use Prion IHC Assay Kit A and Kit B together for Scrapie and Chronic Wasting Disease detection.

References: 1. O'Rourke, K.I., *et al.* J. Clin. Microbiol. 2000; 38(9):3254-3259. 2. Spraker, T.R., *et al.* J. Vet. Diagn. Invest. 2002; 14(1):3-7. 3. Nonno, R., *et al.* J. Clin. Microbiol. 2003; 41(9):4127-4133. 4. Valdez, R.A., *et al.* J. Vet. Diagn. Invest. 2003; 15(2):157-162.

Cat. No.	IPR 5033K G80

intelliPATH™ Multiplex Secondary Reagent 2 IVD

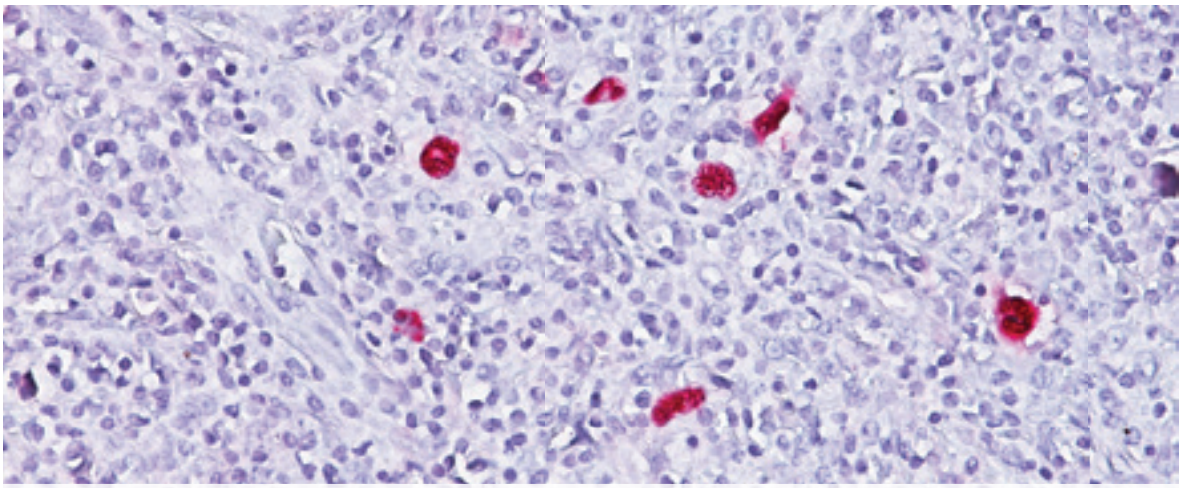


(Right) Prostate cancer stained with CK5/14 (DAB), p63 (DAB), P504S (FR); (Left) Reactive atypia meets CIS in bladder: CD44 (blue), p53 (DAB) & CK20 (FR)

The intelliPATH™ Multiplex Secondary Reagent 2 is specifically designed for use on the intelliPATH™ automated slide stainer, in conjunction with a cocktail consisting of a mouse monoclonal antibody and a rabbit polyclonal/monoclonal antibody. The innovative goat anti-mouse HRP (Horseradish Peroxidase) and goat anti-rabbit AP (Alkaline Phosphatase) polymer technologies provides a significant increase in staining sensitivity when compared to conventional HRP- or AP-conjugated secondary antibodies. This superior detection system simplifies workflow and reduces turnaround time. The intelliPATH™ Multiplex Secondary Reagent 2 is optimized for use with intelliPATH™ multiplex antibodies.

Cat. No.	IPSC 5004 G20, G80

RISH™ AP Detection Kit IVD



RISH Epstein-Barr Encoded RNA (EBER) Probe staining Hodgkin's Lymphoma

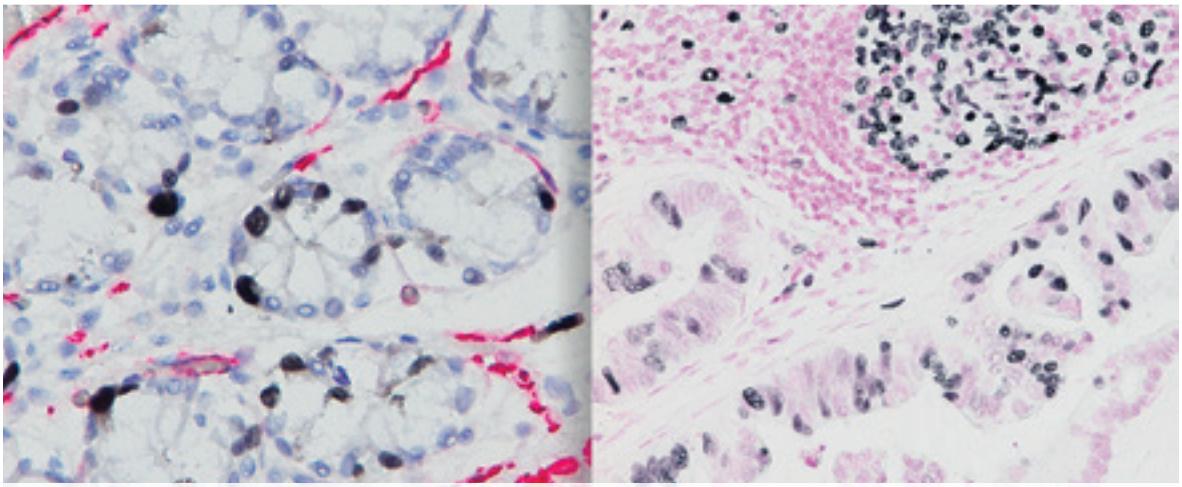
The RISH™ AP Detection Kit is specifically designed for rapid visualization of *in situ* hybridization (ISH) staining. This kit is optimized to react with Biocare's RISH™ probes and other digoxigenin (DIG) labeled probes that react with mRNA targets in formalin-fixed paraffin-embedded (FFPE) tissues. This two-step micro-polymer detection system is designed to produce highly accurate and specific results. The vivid red chromogenic signal is easily visualized under a brightfield microscope. Clear ISH results, with virtually no background, are achieved in about 2.5 hours.

- Rapid: Results in 2.5 hours
- Accurate: High specificity and reactivity with RISH™ or other DIG-labeled probes
- Archivable: Vivid red chromogenic signal is stable for extended storage

References: 1. Beck RC, *et al.* Diagn Mol Pathol. 2003; 12(1):14-20. 2. Shibata Y, *et al.* Histochem Cell Biol. 2000; 113(3):153-9. 3. Iwasaki Y, *et al.* Histochem Cell Biol. 1998; 109(4):339-47.

Cat. No.	RIO213 KG

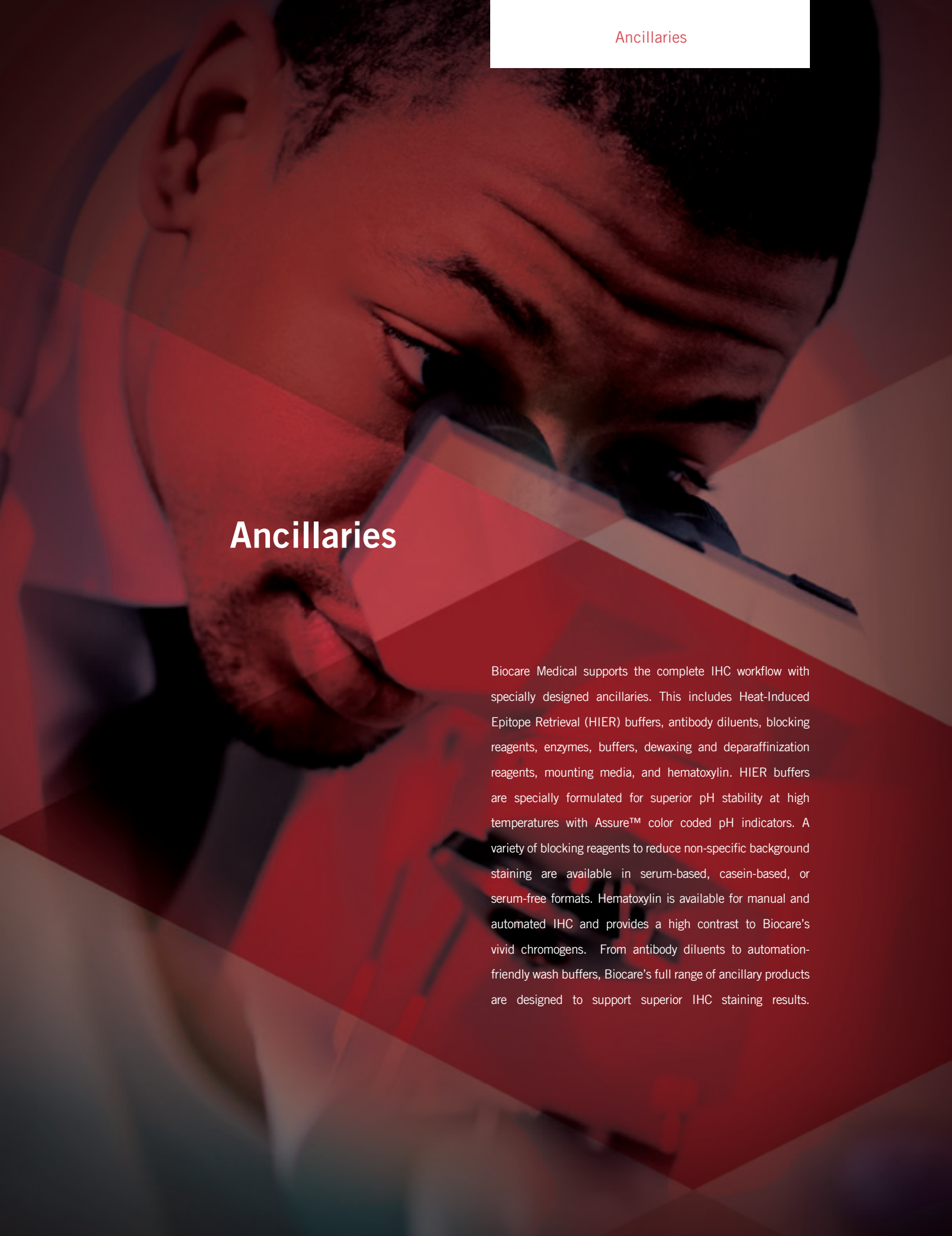
Deep Space Black™ Chromogen Kit IVD



(Left) Normal colon crypts stained with Ki-67; (Right) Colon cancer stained with Ki-67 and counterstained with Feulgen

Deep Space Black™ is a novel permanent chromogen that produces a dark grey to black stain in the presence of horseradish peroxidase (HRP). The kit consists of liquid Deep Spack Black chromogen and buffer that is stable for 8 hours at room temperature once mixed. Deep Space Black is clearly distinguishable from Warp Red™, DAB, Vina Green™, and Ferangi Blue™ on a single slide, enabling high flexibility for Multiplex IHC™ applications. Developed for both manual and automated platforms, Deep Space Black is suitable for both immunohistochemistry (IHC) and *in situ* hybridization (ISH) applications.

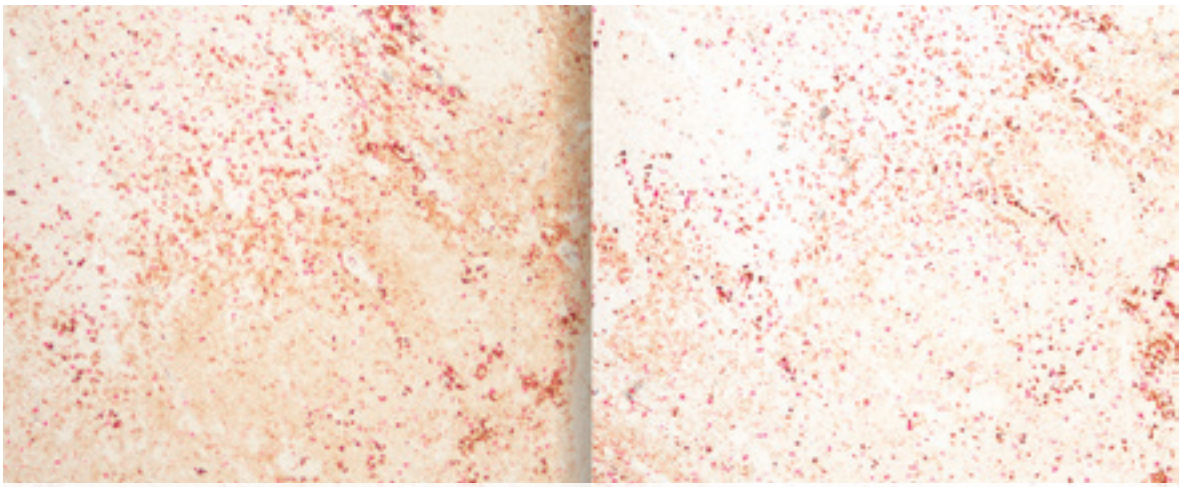
Cat. No.	BRI 4015 H, L



Ancillaries

Biocare Medical supports the complete IHC workflow with specially designed ancillaries. This includes Heat-Induced Epitope Retrieval (HIER) buffers, antibody diluents, blocking reagents, enzymes, buffers, dewaxing and deparaffinization reagents, mounting media, and hematoxylin. HIER buffers are specially formulated for superior pH stability at high temperatures with Assure™ color coded pH indicators. A variety of blocking reagents to reduce non-specific background staining are available in serum-based, casein-based, or serum-free formats. Hematoxylin is available for manual and automated IHC and provides a high contrast to Biocare's vivid chromogens. From antibody diluents to automation-friendly wash buffers, Biocare's full range of ancillary products are designed to support superior IHC staining results.

intelliPATH™ Background Punisher IVD



Tonsil stained with Kappa (DAB) and Lambda (FR) using intelliPATH Background Punisher (R) and without intelliPATH Background Punisher (L)

Biocare's intelliPATH™ Background Punisher is a universal blocking reagent used to reduce nonspecific background staining. Background Punisher utilizes casein, which has been shown to be a superior blocking reagent compared to serum proteins. It is specifically designed and optimized for use on the intelliPATH™ automated slide stainer. The intelliPATH™ Background Punisher is formulated for superior pH stability, while being sodium azide and thimerosal free.

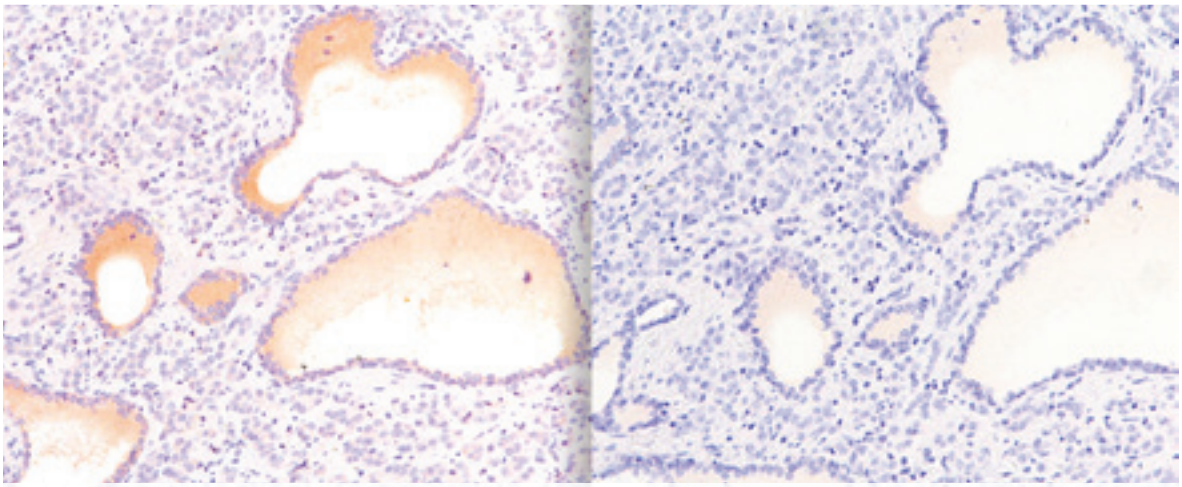
Cat. No.	IP 974 G20

intelliPATH™ Hematoxylin IVD

Biocare's intelliPATH™ Hematoxylin is intended for use in the histologic demonstration of nuclear staining. It provides beautiful sky-blue nuclei, stains and delivers high contrast staining for DAB, AEC, Bajoran Purple, Vulcan Fast Red, Warp Red™ and Deep Space Black™ procedures. The intelliPATH™ Hematoxylin is water-based and is specially formulated for counterstaining on Biocare's intelliPATH™ automated slide stainer.

Cat. No.	IPCS 5006 G20, L

V-Blocker IVD VP Echelon™ Series*



(Left) Prostate cancer negative control with no V-Blocker; (Right) Prostate cancer negative control with V-Blocker

V-Blocker is a universal blocking reagent used for reducing nonspecific background staining often observed with immunohistochemistry on BenchMark® automated staining systems. This formulation has been proven to be the most effective blocking reagent for automated IHC systems. It can be used in the conventional manner by applying before the primary antibody; however, using V-Blocker after the primary antibody and before detection has shown to be much more effective, especially when using Multiplex IHC™ applications. V-Blocker is specifically formulated for superior pH stability and is sodium azide and thimerosal free.

Biocare's VP Echelon™ Series products have been developed for use with Ventana® Medical Systems BenchMark® XT staining systems in combination with Ventana® Detection Kits and Ventana® Prep Kit Dispensers.

Cat. No.	BRI 4001 G

*VP Echelon Series products are developed solely by Biocare Medical LLC and do not imply approval or endorsement of Biocare's products by Ventana Medical Systems, Inc. Biocare and Ventana are not affiliated, associated or related in any way. Ventana®, BenchMark®, iVIEW™ and ultraView™ are trademarks of Ventana Medical Systems, Inc.

BIOCARE MEDICAL
800.799.9499
4040 Pike Lane
Concord CA 94520

www.biocare.net