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BioSite Histo AP Polymer anti-Mouse

REF No	**KDB-30302**	**60 tests, 6 ml**
	KDB-30303	**1000 tests, 100 ml**

Instructions for use

Intended use

BioSite Histo AP Polymer anti-Mouse is designed for the qualitative detection of antigens in fixed paraffin embedded tissue sections, in frozen tissue sections, and in cytological samples. It is developed for use in combination with monoclonal primary antibodies obtained from mouse.
The reagent can be used for examining tissues fixed in different solutions, e.g. formalin (neutrally buffered), B5, Bouin, ethanol, or HOPE.
It is intended for in vitro diagnostic use.

Summary and Explanation

The purpose of the immunohistochemical staining is to make tissue and cell antigens visible. BioSite Histo AP Polymer anti-Mouse is a highly sensitive detection reagent intended for use in immunohistochemistry and immunocytochemistry. The enzyme polymer in this kit consists of several molecules of secondary antibodies covalently bound to several molecules of alkaline phosphatase (AP).
Visualisation occurs via an enzyme-substrate reaction in the presence of a colourising reagent which permits microscopical analysis.
The reagent is suitable for the detection of mono- and polyclonal primary antibodies and sera obtained from mouse. In contrast to other detection techniques, which often use the streptavidin-biotin system the BioSite Histo AP Polymer anti-Mouse avoids the problem of background staining caused by endogenous biotin in the tissue..

Principle of the method

Paraffin-embedded tissue sections are first deparaffinised and rehydrated. Background staining caused by unspecific binding of the primary antibody or the secondary antibody in the AP polymer is minimized by incubation with a protein blocking solution (“Blocking Solution”). This step can be omitted if the primary antibodies are diluted in an appropriate buffer. The next step is incubation with the specific primary antibody. After washing, the AP-polymer is applied and incubated. Any excess of unbound AP-polymer is thoroughly washed away after incubation. The addition of the chromogenic substrate starts the enzymatic reaction of the alkaline phosphatase which leads to colour precipitation where the primary antibody is bound. The colour can be observed with a light microscope. The chromogen used determines the colour. The chromogen Fast Red leads to the formation of a magenta-red product of reaction at the place of the target antigen. Other suitable chromogens are Permanent AP Red

Explanation of the symbols on the product label:

REF	Cataloge Number Bestellnummer Reference du catalogue	LOT	Batch Code Chargenbezeichnung Code du lot	Manufacturer Nordic BioSite AB Propellervägen 4A S-183 62 Täby Sweden Tel: +46 (0)8 5444 33 40 Fax: +46 (0)8 756 94 90 info@nordicbiosite.com www.nordicbiosite.com
	Use By Verwendbar bis Utiliser jusque	IVD	In Vitro Diagnostic Medical Device In vitro Diagnostikum Dispositif médical de diagnostic in vitro	
	Consult Instructions for use Gebrauchsanweisung beachten Consulter les instructions d'utilisation		Temperature Limitation Lagerungstemperatur Limites de température	

(magenta-red), New Fuchsin (magenta-red) or NBT (blue-black) with its substrate BCIP.

Reagents provided

6 ml	**KDB-30302**	(ready-to-use)
100 ml	**KDB-30303**	(ready-to-use)

Storage and handling
The solution should be stored at 2-8°C without further dilution. Please store the reagent in a dark place and do not freeze it. Under these conditions the solution is stable up to the expiry date indicated on the label. They should not be used after the expiry date. A positive and a negative control have to be carried out in parallel to the test material. If you observe unusual staining or other deviations from the expected results which could possibly be caused by the kit reagents, please contact Nordic BioSite technical support or your local distributor.

Precautions
Use by qualified personnel only.
Wear protective clothing to avoid eye, skin or mucous membrane contact with the reagent. In case of the reagent coming into contact with a sensitive area, wash the area with large amounts of water. Microbial contamination of the reagent must be avoided, since otherwise non-specific staining might appear. ProClin 950 is used for stabilization. A Material safety data sheet (MSDS) is available upon request.

Reagent preparation
Reagents should be at room temperature when used.
Deparaffinise and rehydrate paraffin-embedded tissue sections.
Pre-treatment (optional) with HIER (Heat Induced Epitope Retrieval) or enzymatic digestion.
Tissue sections have to be completely covered with the different reagents in order to avoid drying out.

Typical staining procedure

1. Blocking Solution (protein block, this step is optional)	**5 min.**
2. Washing with wash buffer	**1 x 2 min.**
3. Primary antibody (optimally diluted) or negative control reagent	**30-60 min.**
4. Washing with wash buffer	**3 x 5 min.**
5. AP-polymer anti Mouse	**30 min.**
6. Washing with wash buffer	**3 x 2 min.**
7. Fast Red, Permanent AP Red, NBT/BCIP or New Fuchsin	**5-15 min.**

(*Controlling the colour intensity via light microscope is recommended*.)

8. Stopping the reaction with distilled H2O when the desired colour intensity is attained
9. Counterstaining and blueing
10. Mounting: aqueous with Fast Red, permanent with Permanent AP Red, NBT/BCIP or New Fuchsin

Quality control
We recommend carrying out a positive and a negative control with every staining run. The positive control permits the validation of appropriate processing of the sample. If the negative control has a positive result, this points to unspecific staining. Please refer to the instructions of the detection system for guidance on general quality control procedures.

Expected results
During the reaction of the substrate with alkaline phosphatase in the presence of a chromogen, a coloured precipitate is formed at the location of the bound primary antibody. This reaction only takes place if the target antigen is existent in the tissue. The chromogen used determines the colour of the precipitate. The analysis is carried out using a light microscope.

Expected results
During the reaction of the substrate with horse radish peroxidase in the presence of a chromogen, a colored precipitate is formed at the location of the bound primary antibody. This reaction only takes place if the target antigen is existent in the tissue. The chromogen used determines the color of the precipitate. The analysis is carried out using a light microscope.

Limitations of the procedure
Immunohistochemistry is a complex method in which histological as well as immunological detection methods are combined. Tissue processing and handling prior to immunostaining, for example variations in fixation and embedding or the inherent nature of the tissue can cause inconsistent results (Nadji and Morales, 1983).
Endogenous peroxidase or pseudoperoxidase activity may cause non-specific staining. The enzyme activity is blocked by incubation with hydrogen peroxide solution.
Tissues containing Hepatitis B Surface Antigen (HBsAg) may give false positive results with HRP (horse radish peroxidase) detection systems (Omata *et al*, 1980).
Inadequate counterstaining and mounting can influence the interpretation of the results. The color intensity of the reaction product can decrease with time, especially when exposed to light.
Biosite Histo guarantees that the product will meet all requirements described from its shipping date until its expiry date, as long as the product is correctly stored and utilized. No additional guarantees can be given. Under no circumstances shall BiositeHisto be liable for any damages arising out of the use of the reagent provided.

Troubleshooting

If you observe unusual staining or other deviations from the expected results which could possibly be caused by the reagents, please read these instructions carefully, contact Nordic BioSite technical support or your local distributor.

No staining on an actually positive control slide:

1. Reagents were not used in the proper order.
2. Chromogenic substrate solution was too old.
3. Bleaching because chromogen and mounting medium are incompatible.
4. The antigen/epitope in the tissue was insufficiently accessible to the primary antibody. Try a pre-treatment such as heat pre-treatment or enzyme digestion. If you used a pre-treatment it should be extended.
5. Primary antibody not from rabbit, but from a different species.
6. The antigen/epitope was not stable in the fixation and/or pre-treatment procedure used. Try another fixation or pre-treatment.

Weak staining:

1. Inadequate fixation or overfixation.
2. Incomplete de-paraffinization.
3. The antigen/epitope in the tissue was insufficiently accessible to the primary antibody. If you used heat pre-treatment or enzyme digestion it should be extended.
4. Excessive incubation with Blocking Solution or insufficient washing after this step.
5. Too much wash buffer remains on the slides after washing, diluting the reagents applied in the next step.
6. Incubation times were too short or primary antibody concentration too low.
7. Chromogenic substrate solution was too old.

Non-specific background staining or overstraining:

1. Incomplete de-paraffinization.
2. Excessive tissue adhesive on slides.
3. Insufficient washing especially after the incubation with the enzyme polymer or the chromogenic substrate solution. These washings are critical.
4. Tissue was allowed to (partially) dry out with reagents on.
5. Unspecific binding of the primary antibody. Please use a Blocking Solution or dilute the primary antibody in appropriate diluents.
6. Incubation time of the primary antibody was too long or primary antibody concentration too high.
7. Incubation time of the chromogenic substrate solution was too long or reaction temperature too high (e.g. if temperature in the laboratory is high).
8. The substrate is metabolized by endogenous horse radish peroxidase in the tissue. Maybe the hydrogen peroxide solution used for blocking was inactivated.

Performance characteristics
BiositeHisto has conducted studies to evaluate the performance of the kit reagents. The product has been found to be suitable for the intended use.

Bibliography
Nadji M and Morales AR. Ann N.Y. Acad Sci 420:134-9, 1983
Omata M et al. Am J Clin Pathol 73(5): 626-32, 1980