Estrogen Receptor (Clone: EP1) Rabbit Monoclonal Antibody

IVD CE

PRODUCT INFORMATION:		PERFORMANCE CHARACTERISTICS
REF		
PR042	6ml Ready to use	**Localization:** Nucleus
PR042	3ml Ready to use	**Retrieval Buffer:** Tris-EDTA, pH 9.0
CR042	1ml Concentrated	**Incubation:** 60 minutes
CR042	0.5ml Concentrated	**Positive control:** Normal Breast,
CR042	0.1ml Concentrated	Breast Ca.
HAR042	6ml Ready to use	
HAR042	3ml Ready to use	

INTENDED USE

For *in vitro diagnostic* use only

This antibody is intended for use in qualitatively identifying Estrogen Receptor antigen by light microscopy in formalin-fixed, paraffin-embedded (FFPE) tissue sections using immunohistochemical (IHC) detection methodology. Interpretation of any positive or negative staining must be complemented with the evaluation of proper known controls (Positive and Negative) and must be made within the context of the patient's clinical history and other diagnostic tests. A qualified and trained pathologist must perform the evaluation of the test. This antibody is intended to be used after the primary diagnosis of tumor has been made by conventional histopathology using non-immunologic histochemical stains.

SUMMARY AND EXPLANATION

Estrogen receptor alpha (ER alpha) is a ligand-activated transcription factor and member of the steroid hormone receptor family. It possesses highly conserved DNA binding and ligand binding domains for hormone binding, exerting a significant role in activating the transcription of certain genes. ER alpha binds to estrogen response elements (ERE) to regulate estrogen-responsive gene, expression. Ligand-dependent dimerization and phosphorylation In both function to regulate the transcriptional activation of ER alpha. Phosphorylation of serines 104 and 106, located in the N-terminal transcription activation function-1 domain (AF-1), regulates ER alpha activity. It is a prognostic marker for breast cancer because ER alpha is present in the mammary gland.

Estrogen Receptor Alpha is also known as ESR1, ER, ER-α, ESR, ESRA, ESTRR, Era, NR3A1 and estrogen receptor 1.

PRINCIPLE OF THE PROCEDURE

The identification of the antigen on the FFPE tissues is carried out using the above-stated antibody. The antigen and antibody complex are visualized using an enzyme-coupled (HRP/AP) secondary antibody with specific binding to the primary antibody, this complex is visualized by the enzymatic activation of the chromogen resulting in a visible reaction production of the antigenic site. Every step involves precise time and optimal temperature and the results are interpreted using a light microscope by a qualified and trained pathologist.

REAGENT PROVIDED

Concentrated format: Estrogen Receptor is affinity purified and diluted in antibody diluent with 1% bovine serum albumin (BSA) and 0.05% of sodium azide (NaN_3).

Recommended dilutions: 1:25 – 1:50

The antibody dilution and protocol may vary depending on the specimen preparation and specific application. Optimal conditions should be determined by individual laboratories.

Pre-diluted format: PathnSitu's ready-to-use antibodies are pre-tittered to optimal staining conditions. Further dilution will affect the efficacy of the antibody and may yield to sub-optimal staining.

Immunogen: A synthetic peptide corresponding to residues in human ER alpha protein.

Host, Isotype: Rabbit, IgG

STORAGE AND HANDLING

Storage Recommendations: Store at 2-8°C. When stored at the appropriate conditions, the antibody is stable until expiry. Do not use the antibody after the expiration date provided on the vial in any condition.

To ensure proper reagent delivery and stability, replace the dispenser cap after every use and immediately place the vial in an upright position in refrigerated conditions. The contents of the vial should be used within 9 months from the opening of the vial.

SPECIMEN PREPARATION

Staining Recommendations:

Routinely processed, FFPE tissues are suitable for use with this primary antibody, when using PathnSitu's Poly Excel HRP/DAB detection system. The recommended tissue fixative is 10% neutral buffered formalin. Variable results may occur as a result of prolonged fixation or special processes such as decalcification. The thickness of the sections should be 2-5µm. Slides should be stained once the sections are made as the cut sections' antigenicity may diminish over time. Staining known positive and negative controls simultaneously with unknown specimens is recommended.

PRECAUTIONS

1. This product should be used by qualified and trained professional users only
2. The product contains < 0.1% of sodium azide as a preservative and is not classified as hazardous, refer to MSDS for further details
3. As with any product derived from biological sources, proper handling procedures should be used
4. Do not use reagents after the expiration date
5. Use protective clothing and gloves, while handling reagents
6. All hazardous materials should be disposed of according to local state and federal regulations
7. Avoid contamination of reagents as it may lead to incorrect results

STAINING PROCEDURE

Antigen Retrieval Solution: Use **Tris-EDTA Buffer (Cat# PS009)** as an antigen retrieval solution.

Heat Retrieval Method: Retrieve sections under steam pressure for 20 minutes using PathnSitu's MERS (Multi Epitope Retrieval System) for optimal retrieval of the epitopes, allow solution to cool at room temperature, transfer the tissue sections/slides to the distilled water before the primary antibody application.

Primary Antibody: Cover the tissue sections with primary antibody and incubate for 60 min at room temperature when used PathnSitu's PolyExcel Detection System.

Detection System: Refer to PathnSitu's PolyExcel HRP/ DAB detection system protocol for optimal staining results.

QUALITY CONTROL

The recommended positive tissue controls for Estrogen Receptor are Normal Breast and Breast carcinoma. For Estrogen Receptor testing, low, moderate, and strong nuclear positive controls are recommended to confirm assay sensitivity and staining performance. Test results should be interpreted only when the control results meet the established acceptance criteria. Both positive and negative tissue controls must be included with each staining procedure to ensure the proper performance of the processed tissue and test reagents. The negative tissue control is particularly important for assessing and identifying any non-specific background staining. If the results are not expected in positive and negative controls the test must be considered invalid and the entire procedure must be cross-verified. The individual laboratory must establish their own quality control to validate the process and antibody when opening a vial.

INTERPRETATION OF RESULTS

Estrogen Receptor stains the Nucleus. A qualified experienced/trained pathologist must interpret the results in the patient's sample along with the positive and negative controls.

ANALYTIC PERFORMANCE CHARACTERISTICS

1. Heat the paraffin-embedded tissue slides for a suitable duration at an appropriate temperature to promote tissue adhesion.

Note: Use positively charged coated slides (Cat no.: PS-011-72) for better adherence.

2. Deparaffinize the slides using xylene (preferably 3 changes with 5min each) to clear the paraffin wax present on and around the tissue.
3. Rehydrate the slides in graded alcohols (100%, 70%, and 50%) for 3 min each and in distilled water (preferably 2 changes with 2 min each) respectively.

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4. Immerse the slides in 1X retrieval buffer (preferable Cat No.: PS009) and subject them to Heat-induced epitope retrieval by using a multi-epitope retrieval system (MERS-i) to unmask the epitopes.
5. Proceed further by using Poly Excel DAB Detection system (preferably Cat no: PEH002 or OSH001) kit components like Poly Excel Peroxidase Block to inactivate or block the non-specific binding firstly.
6. Apply the primary antibody specific to the target antigen. Incubate slides with the primary antibody for a suitable duration at an appropriate temperature as mentioned in the datasheet.
7. Rinse the slides to remove unbound primary antibody using wash buffer (preferably Cat no: PS006)
8. Apply the secondary antibody (preferably Poly Excel Poly HRP- Anti-Mouse/Anti-Rabbit Cat no: PEH002 or OSH001) conjugated to an enzyme that recognizes the primary antibody. Incubate slides with the secondary antibody for a suitable duration at an appropriate temperature.
9. Rinse the slides to remove unbound secondary antibodies using wash buffer (Preferably Immunowash buffer Cat no: PS006)
10. Apply a substrate, PolyExcel Stunn DAB Chromogen for enzyme-conjugated secondary antibody for a suitable duration.
11. Counter-stain the tissue section to visualize the expression in specific structures or cell types.
12. Dehydrate slides through graded alcohols (70%,90%, 100%,100%), clear the slides in Xylene (preferably 3 changes with 2min each) and mount the slides with an appropriate mounting medium.
13. Visualize the stained slides under the microscope.

The antibody consistently exhibited specific and sensitive staining across various positive and negative tissue controls, including Breast Carcinoma, Endometrial stromal sarcoma and brain tissue samples with nuclear staining This specificity and sensitivity were validated through inter-run, intra-run, and lot-based studies. The stability of the antibody which was determined using real-time or accelerated methods extends until the expiration date indicated on the product labels.

TROUBLESHOOTING

1. Follow the antibody-specific protocol recommendations according to the datasheet provided
2. Tissue staining is dependent on the handling and processing of the tissue prior to staining. Improper fixation, tissue processing, antibody freezing and thawing, washing, drying, heating, sectioning or contamination with other tissues or fluids may produce artifacts, antibody trapping or inaccurate results
3. Do not allow the section to dry out during the entire IHC process
4. Excessive or incomplete counterstaining may compromise the interpretation of the results
5. If unusual results occur, contact PathnSitu's Technical Support at +91-40-2701 5544 or E-mail:techsupport@pathnsitu.com

LIMITATIONS AND WARRANTY

1. Authorized and skilled/trained personnel only may use the product.
2. The clinical interpretation of any test results should be evaluated within the context of the patient's medical history and other diagnostic test results.
3. A qualified trained pathologist must perform the evaluation of the test results.
4. Use appropriate volume/concentration to cover entire tissue sections and optimum conditions to avoid false positive and negative results.
5. Use appropriate/recommended buffer/instruments/all consumables with appropriate incubation timings to obtain optimal results.
6. Always recommend using known positive and negative controls to evaluate the test result.
7. Unexpected reactions may occur in untested tissues due to tissue component variability.
8. False positive results can arise from no stringent washing practices and other contributing factors.
9. In instances where localization differs from the specifications outlined in the datasheet, clinical coordination or prompt technical support is advised.
10. Maintain recommended storage conditions.
11. Do not use reagents that appear cloudy, discolored, or show signs of contamination. Discard if any component shows deterioration.
12. Refer entire data sheet to know any further limitations about the product.
13. No warranties whether expressed or implied, extend beyond the description.
14. This product is intended for single-use application only. Once applied to the tissue section, it shouldn't be recovered or reused. Reuse may compromise the integrity, specificity, and reliability of immunohistochemical staining.
15. PathnSitu is not liable for property damage, personal injury, time or effort or economic loss caused by this product.

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BIBLIOGRAPHY

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3. Hammond MEH, Hayes DF, Dowsett M, Allred C, Hagerty KL, Badve S, etal. American Society of Clinical Oncology/College of American Pathologists Guideline Recommendations for Immunohistochemical Testing of Estrogen and Progesterone Receptors in Breast Cancer. Arch Pathol Lab Med2010; 134:907–22.

ER, EP1 antibody has been created by Epitomics Inc., using Epitomics' proprietary rabbit monoclonal antibody technology covered under Patent No.'s 5,675,063 and 7,402,409.

EXPLANATION OF SYMBOLS

LOT **Lot number / Batch number**	**Expiry**
IVD ***In vitro* diagnostic use**	**Storage limitation**
Date of manufacture	REF **Catalogue number**
Manufacturer address	CE **CE marking**

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