

Novocastra™ Lyophilized Mouse Monoclonal Antibody Estrogen Receptor (beta)

Product Code: NCL-ER-beta

Intended Use	FOR RESEARCH USE ONLY.
Specificity	Human estrogen receptor (beta). Epitope mapped to a 17 amino acid region specific to the wild type form of the C-terminus. This epitope is not present in ERβcx.
Clone	EMR02
Ig Class	IgG1
Antigen Used for Immunizations	Prokaryotic recombinant protein corresponding to a 130 amino acid portion of the human estrogen receptor molecule.
Hybridoma Partner	Mouse myeloma (p3-NS1-Ag4-1).
Preparation	Lyophilized tissue culture supernatant containing 15 mM sodium azide. Reconstitute with the volume of sterile distilled water indicated on the vial label.
Effective on Frozen Tissue	No
Effective on Paraffin Wax Embedded Tissue	Yes (using the high temperature antigen unmasking technique: see overleaf).
Recommendations on Use	Immunohistochemistry: Typical working dilution 1:50. High temperature antigen unmasking technique. Overnight primary antibody incubation at 4 °C. Standard ABC technique. Western Blotting: Typical working dilution 1:50–1:100 (ECL™, Amersham Pharmacia Biotech).
Positive Controls	Immunohistochemistry: Skin. Western Blotting: MCF7 cell line.
Staining Pattern	Nuclear.
Storage and Stability	Store unopened lyophilized antibody at 4 °C. Under these conditions, there is no significant loss in product performance up to the expiry date indicated on the vial label. The reconstituted antibody is stable for at least two months when stored at 4 °C. For long term storage, it is recommended that aliquots of the antibody are frozen at -20 °C (frost-free freezers are not recommended). Repeated freezing and thawing must be avoided. Prepare working dilutions on the day of use.
General Overview	Estrogen Receptor alpha (ERα) and beta (ERβ) are the translated products of separate genes located on different chromosomes. Although both isoforms share a high degree of amino acid homology, the role of the conserved domains demonstrate specific functions. The A/B region, D domain and F domains are notably distinct in sequence. ERα is the highly characterised estrogen receptor cloned originally from a human breast cancer cell line with ERβ more recently identified in rodents and now in humans. ERβ is expressed as multiple isoforms. ERβ, unlike ERα, □□ is reported to be widely expressed in normal adult tissues of ovary, fallopian tube, lung, kidney, brain, heart, prostate and testis.
General References	Rees M L, Marshall I, McIntosh G G, et al.. Hybridoma and Hybridomics. 23 (1): 11–18 (2004). Omoto Y, Kobayashi S, Inoue S, et al.. European Journal of Cancer. 38: 380–386 (2002). Scobie G A, Macpherson S, Millar M R, et al.. Steroids. 67: 985–992 (2002). Skliiris G P, Parkes A T, Limer J L, et al.. Journal of Pathology. 197: 155–162 (2002). Pavao M and Traish A M. Steroids. 66: 1–16 (2001). Chu S, Mammers P, Burger H G, et al.. The Journal of Clinical Endocrinology & Metabolism. 85 (3): 1200–1205 (2000). Fuqua S A W, Schiff R, Parra I, et al.. Cancer Research. 59: 5425–5428 (1999).



Instructions for Use

High Temperature Antigen Unmasking Technique for Immunohistochemical Demonstration on Paraffin Sections

1. Cut and mount sections on slides coated with a suitable tissue adhesive.
2. Deparaffinize sections and rehydrate to distilled water.
3. Place sections in 0.5% hydrogen peroxide/methanol for 10 minutes (or use other appropriate endogenous peroxidase blocking procedure). Wash sections in tap water.
4. Heat 1500 mL of the recommended unmasking solution (0.01 M citrate buffer, pH 6.0 (or Epitope Retrieval Solution, RE7113) unless otherwise indicated overleaf) until boiling in a stainless steel pressure cooker. Cover but do not lock lid.
5. Position slides into metal staining racks (do not place slides close together as uneven staining may occur) and lower into pressure cooker ensuring slides are completely immersed in unmasking solution. Lock lid.
6. When the pressure cooker reaches operating temperature and pressure (after about 5 minutes) start a timer for 1 minute (unless otherwise indicated on the data sheet).
7. When the timer rings, remove pressure cooker from heat source and run under cold water with lid on. DO NOT OPEN LID UNTIL THE INDICATORS SHOW THAT PRESSURE HAS BEEN RELEASED. Open lid, remove slides and place immediately into a bath of tap water.
8. Wash sections in TBS* buffer (pH 7.6) for 1 x 5 minutes.
9. Place sections in diluted normal serum (or RTU Normal Horse Serum) for 10 minutes.
10. Incubate sections with primary antibody. Use Antibody Diluent RE7133 (where available).
11. Wash in TBS buffer for 2 x 5 minutes.
12. Incubate sections in an appropriate biotinylated secondary antibody.
13. Wash in TBS buffer for 2 x 5 minutes.
14. Incubate slides in ABC reagent (or RTU streptavidin/peroxidase complex).
15. Wash in TBS buffer for 2 x 5 minutes.
16. Incubate slides in DAB or other suitable peroxidase substrate.
17. Wash thoroughly in running tap water.
18. Counterstain with hematoxylin (if required), dehydrate and mount.

Solutions

0.01 M CITRATE BUFFER (pH 6.0) or RE7113 (where available).

Add 3.84 g of citric acid (anhydrous) to 1.8 L of distilled water. Adjust to pH 6.0 using concentrated NaOH. Make up to 2 L with distilled water.

1 mM EDTA (pH 8.0) or RE7116 (where available).

Add 0.37 g of EDTA (SIGMA product code E-5134) to 1 litre of distilled water. Adjust pH to 8.0 using 1.0 M NaOH.

20 mM TRIS/ 0.65 mM EDTA/ 0.005% TWEEN (pH 9.0) or RE7119 (where available).

Dissolve 14.4 g Tris (BDH product code 271197K) and 1.44 g EDTA (SIGMA product code E-5134) to 0.55 L of distilled water. Adjust pH to 9.0 with 1 M HCl and add 0.3 mL Tween 20 (SIGMA product code P-1379). Make up to 0.6 L with distilled water. This is a 10x concentrate which should be diluted with distilled water as required (eg 150 mL diluted with 1350 mL of distilled water).

* In most applications, 10 mM phosphate, 0.15 M NaCl, pH 7.6 (PBS) can be used instead of 50 mM Tris, 0.15 M NaCl, pH 7.6 (TBS).

Safety Note

To ensure the correct and safe use of your pressure cooker, PLEASE READ MANUFACTURER'S INSTRUCTIONS.