Product datasheet

Anti-EGFR antibody [ICR10] ab231

Overview

Product name: Anti-EGFR antibody [ICR10]
Description: Rat monoclonal [ICR10] to EGFR
Host species: Rat
Tested applications: Suitable for: Inhibition Assay, Flow Cyt, ELISA, ICC/IF, IP, IHC-Fr, ICC
Unsuitable for: WB
Species reactivity: Reacts with: Mouse, Human
Immunogen: Extracellular domain of Human EGF-receptor from head and neck carcinoma
Epitope: ICR10 binds to epitope B, and has an affinity of 6.7x10^-9 M.
Positive control: FACS: A431 cells IHC: Breast Carcinoma tissue WB: HN5 cell lysate

Properties

Form: Liquid
Storage instructions: Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer: Preservative: 0.09% Sodium azide
Constituent: PBS
Purity: Ion Exchange Chromatography
Purification notes: Purified IgG prepared by ion exchange chromatography.
Clonality: Monoclonal
Clone number: ICR10
Myeloma: unknown
Isotype: IgG2a
Light chain type: unknown

Applications

Our Abpromise guarantee covers the use of ab231 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.
<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Inhibition Assay</td>
<td>Use at an assay dependent concentration. See ELISA Abreview.</td>
<td></td>
</tr>
<tr>
<td>Flow Cyt</td>
<td>![5 stars] 1/50 - 1/100. ab18450 - Rat monoclonal IgG2a, is suitable for use as an isotype control with this antibody.</td>
<td></td>
</tr>
<tr>
<td>ELISA</td>
<td>![4 stars]</td>
<td>Use at an assay dependent concentration.</td>
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<tr>
<td>ICC/IF</td>
<td></td>
<td>Use a concentration of 5 µg/ml.</td>
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<tr>
<td>IP</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>IHC-Fr</td>
<td>![5 stars]</td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>ICC</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
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</table>

**Application notes**

Is unsuitable for WB.

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**Function**

Receptor tyrosine kinase binding ligands of the EGF family and activating several signaling cascades to convert extracellular cues into appropriate cellular responses. Known ligands include EGF, TGFA/TGF-alpha, amphiregulin, epigen/EPGN, BTC/betacellulin, epiregulin/EREG and HBEGF/heparin-binding EGF. Ligand binding triggers receptor homo- and/or heterodimerization and autophosphorylation on key cytoplasmic residues. The phosphorylated receptor recruits adapter proteins like GRB2 which in turn activates complex downstream signaling cascades. Activates at least 4 major downstream signaling cascades including the RAS-RAF-MEK-ERK, PI3 kinase-AKT, PLCgamma-PKC and STATs modules. May also activate the NF-kappa-B signaling cascade. Also directly phosphorylates other proteins like RGS16, activating its GTPase activity and probably coupling the EGF receptor signaling to the G protein-coupled receptor signaling. Also phosphorylates MUC1 and increases its interaction with SRC and CTNNB1/beta-catenin.

Isoform 2 may act as an antagonist of EGF action.

**Target**

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**Tissue specificity**

Ubiquitously expressed. Isoform 2 is also expressed in ovarian cancers.

**Involvement in disease**

Lung cancer

Inflammatory skin and bowel disease, neonatal, 2

**Sequence similarities**

Belongs to the protein kinase superfamily. Tyr protein kinase family. EGF receptor subfamily. Contains 1 protein kinase domain.

**Post-translational modifications**

Phosphorylation at Ser-695 is partial and occurs only if Thr-693 is phosphorylated.

Phosphorylation at Thr-678 and Thr-693 by PRKD1 inhibits EGF-induced MAPK8/JNK1 activation. Dephosphorylation by PTPRJ prevents endocytosis and stabilizes the receptor at the plasma membrane. Autophosphorylation at Tyr-1197 is stimulated by methylation at Arg-1199 and enhances interaction with PTPN6. Autophosphorylation at Tyr-1092 and/or Tyr-1110 recruits STAT3. Dephosphorylated by PTPN1 and PTPN2.

Monoubiquitinated and polyubiquitinated upon EGF stimulation; which does not affect tyrosine kinase activity or signaling capacity but may play a role in lysosomal targeting. Polyubiquitin linkage is mainly through 'Lys-63', but linkage through 'Lys-48', 'Lys-11' and 'Lys-29' also occurs.
Deubiquitination by OTUD7B prevents degradation. Ubiquitinated by RNF115 and RNF126. Methylated. Methylation at Arg-1199 by PRMT5 stimulates phosphorylation at Tyr-1197.

**Cellular localization**


**Images**

ab231 staining EGFR in human tumor cell line xenograft in mouse by Immunohistochemistry (Frozen sections). Tissue was fixed in acetone. Samples incubated with ab231 at a 1/100 dilution for 1 hour at 23°C. The secondary used was an undiluted HRP conjugated goat anti-rat polyclonal.

Staining of A431 cells with ab231 visualised with F(ab')2 rabbit anti-rat FITC conjugated secondary.
Immunocytochemistry/Immunofluorescence - Anti-EGFR antibody [ICR10] (ab231)

ICC/IF image of ab231 stained human HeLa cells. The cells were methanol fixed (5 min) and incubated with the antibody (ab231, 5µg/ml) for 1h at room temperature. The secondary antibody (green) was Alexa Fluor® 488 donkey anti-rat IgG (H+L) used at a 1/1000 dilution for 1h. Image-iT™FX Signal Enhancer was used as the primary blocking agent, 5% BSA (in TBS-T) was used for all other blocking steps. DAPI was used to stain the cell nuclei (blue). Alexa Fluor® 594 WGA was used to label plasma membranes (red).

Inhibition Assay - Anti-EGFR antibody [ICR10] (ab231)

ab231 used undiluted in inhibition assay against human recombinant protein EGFR1:Fc to inhibit binding to EGF:Biotin. The primary incubated with sample for 1 hour. The antibody inhibits the binding of biotinylated EGF to coated EGFR:Fc with an IC50 ~ 5 nM.

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