Rat EGF Antibody

Monoclonal Mouse IgG_{2B} Clone # 420610

Catalog Number: MAB3214

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat EGF in direct ELISAs and Western blots. In Western blots, no cross-reactivity with recombinant mouse (rm) Epigen, rmEpiregulin, recombinant human (rh) HB-EGF, rhEGF, rmEGF, or rhHRG is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 420610
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant rat EGF Asn974-Arg1026 Accession # P07522
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

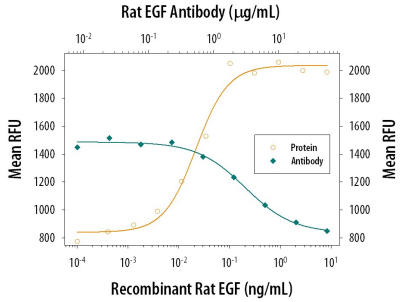
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Rat EGF (Catalog # 3214-EG)
Neutralization	Measured by its ability to neutralize EGF-induced proliferation in the Balb/3T3 mouse embryonic fibroblast cell line. The Neutralization Dose (ND_{50}) is typically 0.75-3.75 µg/mL in the presence of 75 pg/mL Recombinant Rat EGF.	

DATA

Neutralization



Cell Proliferation Induced by EGF and Neutralization by Rat EGF Antibody. Recombinant Rat EGF (Catalog # 3214-EG) stimulates proliferation in the Balb/3T3 mouse embryonic fibroblast cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Rat EGF (75 pg/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Rat EGF Monoclonal Antibody (Catalog # MAB3214). The ND_{50} is typically 0.75-3.75 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Epidermal growth factor (EGF) is the founding member of the EGF family that also includes TGF-α, amphiregulin (AR), betacellulin (BTC), epiregulin (EPR), heparin-binding EGF-like growth factor (HB-EGF), epigen, and the neuregulins (NRG)-1 through -6 (1). Members of the EGF family share a structural motif, the EGF-like domain, which is characterized by three intramolecular disulfide bonds that are formed by six similarly spaced conserved cysteine residues (2). All EGF family members are synthesized as type I transmembrane precursor proteins that may contain several EGF domains in the extracellular region. The mature proteins are released from the cell surface by regulated proteolysis (1). The 1133 amino acid (aa) rat EGF precursor contains nine EGF domains and nine LDLR class B repeats. The mature protein consists of 53 aa and is generated by proteolytic excision of the EGF domain proximal to the transmembrane region (3). Mature rat EGF shares 70% and 77% aa sequence identity with mature human and mouse EGF, respectively. EGF is present in various body fluids, including blood, milk, urine, saliva, seminal fluid, pancreatic juice, cerebrospinal fluid, and amniotic fluid (4). Four ErbB (HER) family receptor tyrosine kinases including EGFR/ErbB1, ErbB2, ErbB3 and ErbB4, mediate responses to EGF family members (5). These receptors undergo a complex pattern of ligand induced homo- or hetero-dimerization to transduce EGF family signals (6, 7). EGF binds ErbB1 and depending on the context, induces the formation of homodimers or heterodimers containing ErbB2. Dimerization results in autophosphorylation of the receptor at specific tyrosine residues to create docking sites for a variety of signaling molecules (5, 8). Biological activities ascribed to EGF include epithelial development, angiogenesis, inhibition of gastric acid secretion, fibroblast proliferation, and colony formation of epidermal cells in culture.

References:

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6. Gamett, D.C. *et al.* (1997) J. Biol. Chem. **272**:12052.
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