

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Epiregulin in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) Betacellulin, rhEGF, recombinant mouse Epiregulin, or rhHB-EGF is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 183629
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human Epiregulin Val63-Leu108 Accession # O14944
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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
Intracellular Staining by Flow Cytometry	0.25-1 µg/10 ⁶ cells	A549 human lung carcinoma cell line fixed with paraformaldehyde and permeabilized with saponin

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Epiregulin is a member of the EGF family of growth factors which includes, among others, epidermal growth factor (EGF), transforming growth factor (TGF)-alpha, amphiregulin (ARG), HB (heparin-binding)-EGF, betacellulin, and the various heregulins. All EGF family members are synthesized as transmembrane precursors and are converted to soluble forms by proteolytic cleavage. Epiregulin was originally purified from the mouse fibroblast-derived tumor cell line NIH3T3/T7 (1). The human epiregulin cDNA encodes a 169 amino acid (aa) residues transmembrane precursor with a 29 aa signal peptide, a 21 aa transmembrane domain and a 21 aa cytoplasmic domain. The putative soluble mature Epiregulin comprising the EGF-like domain (aa residues 64-104) is formed by proteolytic removal of the propeptide regions (2). There is 85% aa sequence homology between human and mouse epiregulins. Epiregulin is expressed primarily in the placenta and macrophages (3). High level expression has also been detected in various carcinomas. Epiregulin specifically binds EGFR (ErbB1) and ErbB4 but not ErbB2 and ErbB3. It activates the homodimers of both ErbB1 and ErbB4. In addition, epiregulin can also activate all possible heteromeric combinations of the four ErbB family members (4). Epiregulin stimulates the proliferation of fibroblasts, smooth muscle cells and hepatocytes. It has been shown to be an autocrine growth factor for epidermal keratinocytes as well as mesangial cells (5, 6). Epiregulin has also been shown to inhibit growth of several epithelial tumor cells. In addition, Epiregulin has been implicated in the implantation process during pregnancy (7).

References:

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4. Shelly, M. *et al.* (1998) *J. Biol. Chem.* **273**:10496.
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6. Mishre, R. *et al.* (2002) *Am. J. Physiol. Renal. Physiol.* **283**:F1151.
7. Das, S.K. *et al.* (1997) *Dev. Biol.* **190**:178.

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