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Product Information

Anti-c-erbB-4 antibody, Mouse monoclonal
clone HER4-36, purified from hybridoma cell culture

Catalog Number **E5900**

Product Description

Monoclonal Anti-c-erbB-4 (HER-4) (mouse IgG1 isotype) is derived from the HER4-36 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a BALB/c mouse immunized with a purified extracellular domain of human erbB-4 from transfected cells.[1] The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Catalog Number ISO2).

Monoclonal Anti-c-erbB-4 (HER-4) specifically reacts with human c-erbB-4 protein.[1] The antibody may be used for immunoprecipitation.[1] It has also been used in studies on receptor turnover,[1] phosphorylation,[1] ligand binding,[1] and induction of differentiation of cultured breast cancer cells.[1]

Protooncogenes, encoding growth factor receptors, constitute several distinct families with close overall structural homology. The highest degree of homology is observed in their catalytic domains, essential for the intrinsic tyrosine kinase activity of these proteins.[2] These receptors have a common overall structure consisting of an extracellular domain, a transmembrane region, and a cytoplasmic sequence. The extracellular component has two domains that appear to be responsible for ligand binding, and two cysteine-rich domains that are probably necessary for structural integrity. The cytoplasmic component has a juxta-membrane region, a tyrosine kinase domain, and a carboxy-terminal region containing the mapped sites of autophosphorylation-induced by the binding of specific ligands.

The ErbB/HER family of transmembrane receptor tyrosine kinases includes four members that bind more than two dozen ligands sharing an epidermal growth factor (EGF)-like motif. This family plays a pivotal role in cell lineage determination in a variety of tissues including mesenchyme-epithelial inductive processes, and in the interactions between neurons and muscle, and glia and Schwann cells. Certain ligands and receptors of the family contribute to a relatively virulent phenotype of some human tumors; most notable are carcinomas of secretory epithelia.

This large variety of biological signals is generated through a combinatorial network of signal transduction in which different ErbB ligands are apparently capable of stabilizing discrete homo- and heterodimeric ErbB receptor complexes, each coupled to a specific set of cytoplasmic signaling proteins. Because each receptor is unique in terms of catalytic activity, cellular routing, and transmodulation, the resulting network allows not only an enormous potential for signal diversification but also fine tuning and stringent control of cellular functions.[3]

The human ErbB-4 oncogene (also known as HER4) is a 180–185 kDa receptor that binds to a family of isoforms, collectively known as neuregulins (also called Neu differentiation factors (NDF), heregulins, glial growth factors, and acetylcholine receptor inducing activity).[4,5] ErbB-4 also binds to related group of molecules, termed NRG2 (which also binds to erbB-3), and NRG3 (which binds exclusively to erbB-4). Two other ligands, betacellulin and the heparin-binding EGF-like growth factor, bind to both erbB-1 and erbB-4.[5] ErbB-4 forms heterodimers with erbB-2, resulting in the modulation of its ligand affinitiy.[6]

A monoclonal antibody reacting specifically with erbB-4 is a useful tool for the study of the roles of erbB-4 in the cellular and molecular mechanisms underlying tumor growth and for studying its interaction with other erbB family members.

Reagent

Monoclonal Anti-c-erbB-4 (HER-4) is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~2 mg/ml

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability
For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile
By immunoprecipitation 4–8 μg of the antibody will precipitate erb-4 from 200 μg of a RIPA lysate of cultured CB4 cells (CHO cell transfected with erb-4).

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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