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# ERBB3 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1305a

## Product Information

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| **Application** | WB, ICC, E |
| **Primary Accession** | P21860 |
| **Reactivity** | Human |
| **Host** | Mouse |
| **Clonality** | Monoclonal |
| **Clone Names** | 2F9 |
| **Isotype** | IgG1 |
| **Calculated MW** | 148098 |
| **Description** | ERBB3, v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian). It is a member of the epidermal growth factor receptor (EGFR) family of receptor tyrosine kinases. This membrane-bound protein has a neuregulin binding domain but not an active kinase domain. It therefore can bind this ligand but not convey the signal into the cell through protein phosphorylation. However, it does form heterodimers with other EGF receptor family members which do have kinase activity. Heterodimerization leads to the activation of pathways which lead to cell proliferation or differentiation. Amplification of this gene and/or overexpression of its protein have been reported in numerous cancers, including prostate, bladder, and breast tumors. Alternate transcriptional splice variants encoding different isoforms have been characterized. One isoform lacks the intermembrane region and is secreted outside the cell. This form acts to modulate the activity of the membrane-bound form. Additional splice variants have also been reported, but they have not been thoroughly characterized. |
| **Immunogen** | Purified recombinant extracellular fragment of human ERBB3 (aa22-369) fused with hIgGFc tag expressed in HEK293 cells. |
| **Formulation** | Ascitic fluid containing 0.03% sodium azide. |

## Additional Information

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| **Gene ID** | 2065 |
| **Other Names** | Receptor tyrosine-protein kinase erbB-3, 2.7.10.1, Proto-oncogene-like protein c-ErbB-3, Tyrosine kinase-type cell surface receptor HER3, ERBB3, HER3 |
| **Dilution** | WB~~1/500 - 1/2000 ICC~~N/A E~~N/A |
| **Storage** | Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | ERBB3 Antibody is for research use only and not for use in diagnostic or |

therapeutic procedures.

## Protein Information

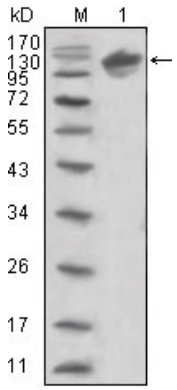
| | |
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| **Name** | ERBB3 |
| **Synonyms** | HER3 |
| **Function** | Tyrosine kinase receptor that, despite substitutions of key catalytic residues in the kinase domain, retains residual catalytic activity enabling autophosphorylation (PubMed:9148746, PubMed:20351256). Functions primarily as a heterodimer, preferentially partnering with ERBB2/HER2, which phosphorylates ERBB3 on specific tyrosine residues and provides the kinase activity required for downstream signaling (PubMed:22983903). Binds neuregulins NRG1 and NRG2 through its extracellular domain, which induces conformational change from a tethered autoinhibited state to an extended conformation competent for dimerization (PubMed:20682778). Upon heterodimerization and trans-phosphorylation, acts as the most efficient activator of the PI3K/AKT pathway within the ErbB family (PubMed:22983903). Also activates the RAS/MAPK/ERK cascade to promote cell proliferation (PubMed:22983903). Plays an essential role in cardiac development; required for normal formation of the endocardial cushion and ventricular trabeculation during embryogenesis (Potential). Critical for peripheral nervous system development, where neuregulin-1/ERBB3 signaling drives Schwann cell survival, proliferation, and differentiation, and is required for axonal myelination (By similarity). Involved in epithelial morphogenesis and mammary gland development (By similarity). Also involved in the regulation of myeloid cell differentiation (PubMed:27416908). Participates in a regulatory feedback loop whereby pathway activation induces transcriptional up-regulation of ERBB3 expression (PubMed:21368164). Participates in vesicular sorting by stabilizing the ARF6-GGA3-RABEP1 endosomal sorting complex, to promote early recycling of TFRC and ITGB1 (PubMed:41348103). May also be activated by additional ligands including CSPG5 and EGFL6; the latter triggers assembly of an ERBB2/ERBB3/ITGB3 signaling complex leading to ERK phosphorylation and cell proliferation (PubMed:15358134, PubMed:41151154). |
| **Cellular Location** | [Isoform 1]: Cell membrane; Single-pass type I membrane protein |
| **Tissue Location** | Epithelial tissues and brain. |

## References

1. Cancer Sci. 2007 Sep;98(9):1498-503. 2. Breast Cancer Res. 2008;10(1):R2.

## Images

Figure 1: Western blot analysis using ERBB3 mouse mAb against human ERBB3 (aa22-369)-hIgGFc trasfected HEK293 cell lysate (1).



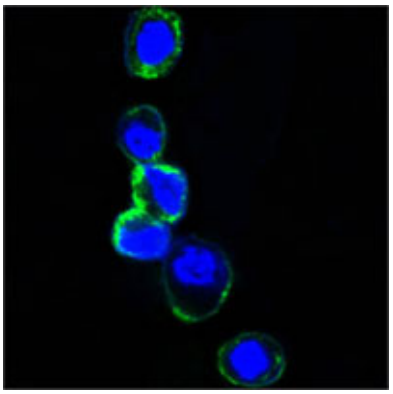



Figure 2: Confocal immunofluorescence analysis of HEK293 cells trasfected with extracellular ERBB3 (aa22-369)-hIgGFc using ERBB3 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye.

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