

### Anti-ErbB2 / HER2 Affibody® Molecule (HRP) ab31896

1 Image

#### Overview

<b>Product name</b>	Anti-ErbB2 / HER2 Affibody® Molecule (HRP)
<b>Conjugation</b>	HRP
<b>Conjugation notes</b>	This molecule is conjugated with maleimide activated horseradish peroxidase (HRP) at the unique C-terminal cysteine.
<b>Tested applications</b>	<b>Suitable for:</b> IHC-Fr
<b>Species reactivity</b>	<b>Reacts with:</b> Human
<b>Immunogen</b>	Recombinant full length protein corresponding to ErbB2/ HER2.
<b>General notes</b>	This product is a recombinant protein produced in E.coli.

#### **What are Affibody Molecules?**

*Affibody® affinity ligands are unique research reagents, produced using innovative protein-engineering technologies. They are small, simple proteins composed of a three-helix bundle based on the scaffold of one of the IgG-binding domains of Protein A. Protein A is a surface protein from the bacterium Staphylococcus aureus. This scaffold has excellent features as an affinity ligand and can be designed to bind with high affinity to any given target protein. The domain consists of 58 amino acids, 13 of which are randomized to generate Affibody® libraries with a large number of ligand variants. Thus, the libraries consist of a multitude of protein ligands with an identical backbone and variable surface-binding properties. In function, Affibody® Molecules mimic monoclonal antibodies. Compared to antibodies, the most striking dissimilarity of Affibody® Molecules is the small size. Affibody® Molecules have a molecular weight of 6kDa, compared to the molecular weight of antibodies, which is 150kDa. In spite of its small size, the binding site of Affibody® Molecules is similar to that of an antibody. The advantages of Affibody® Molecules over antibodies are: -their small size -the simple structure of the molecules -its robust physical properties; able to withstand a broad range of analytical conditions, including extreme pH and elevated temperature -its ability to fold correctly intracellularly -the fast and cost effective production in bacteria -the potential to couple Affibody® Molecules in multimeric constructs Affibody® Molecules have highly competitive properties for applications within affinity purification, sample preparation, protein detection and in vitro diagnostics.*

#### Properties

<b>Form</b>	Liquid
-------------	--------

<b>Storage instructions</b>	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
<b>Storage buffer</b>	pH: 7.50 Constituents: 0.41% Sodium phosphate, 50% Glycerol, 0.58% Sodium chloride
<b>Purification notes</b>	The purity of this product is >98% as determined by SDS-PAGE.
<b>Function</b>	Protein tyrosine kinase that is part of several cell surface receptor complexes, but that apparently needs a coreceptor for ligand binding. Essential component of a neuregulin-receptor complex, although neuregulins do not interact with it alone. GP30 is a potential ligand for this receptor. Regulates outgrowth and stabilization of peripheral microtubules (MTs). Upon ERBB2 activation, the MEMO1-RHOA-DIAPH1 signaling pathway elicits the phosphorylation and thus the inhibition of GSK3B at cell membrane. This prevents the phosphorylation of APC and CLASP2, allowing its association with the cell membrane. In turn, membrane-bound APC allows the localization of MACF1 to the cell membrane, which is required for microtubule capture and stabilization. In the nucleus is involved in transcriptional regulation. Associates with the 5'-TCAAATTC-3' sequence in the PTGS2/COX-2 promoter and activates its transcription. Implicated in transcriptional activation of CDKN1A; the function involves STAT3 and SRC. Involved in the transcription of rRNA genes by RNA Pol I and enhances protein synthesis and cell growth.
<b>Tissue specificity</b>	Expressed in a variety of tumor tissues including primary breast tumors and tumors from small bowel, esophagus, kidney and mouth.
<b>Involvement in disease</b>	Hereditary diffuse gastric cancer Glioma Ovarian cancer Lung cancer Gastric cancer Chromosomal aberrations involving ERBB2 may be a cause gastric cancer. Deletions within 17q12 region producing fusion transcripts with CDK12, leading to CDK12-ERBB2 fusion leading to truncated CDK12 protein not in-frame with ERBB2.
<b>Sequence similarities</b>	Belongs to the protein kinase superfamily. Tyr protein kinase family. EGF receptor subfamily. Contains 1 protein kinase domain.
<b>Post-translational modifications</b>	Autophosphorylated. Autophosphorylation occurs in trans, i.e. one subunit of the dimeric receptor phosphorylates tyrosine residues on the other subunit (Probable). Ligand-binding increases phosphorylation on tyrosine residues (PubMed:27134172). Signaling via SEMA4C promotes phosphorylation at Tyr-1248 (PubMed:17554007). Dephosphorylated by PTPN12 (PubMed:27134172).
<b>Cellular localization</b>	Cytoplasm. Nucleus and Cell membrane. Cytoplasm, perinuclear region. Nucleus. Translocation to the nucleus requires endocytosis, probably endosomal sorting and is mediated by importin beta-1/KPNB1.

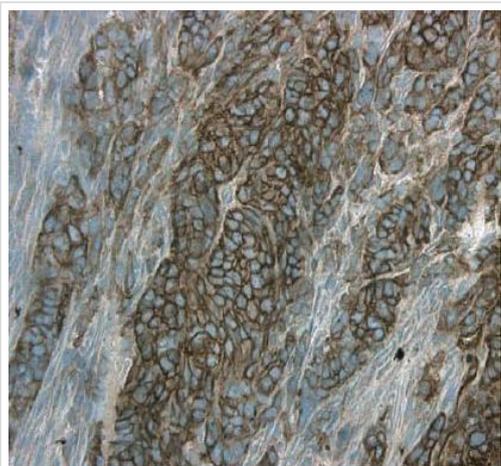
## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab31896 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-Fr		Use at an assay dependent dilution. Staining of paraffin embedded tissues is not recommended. AFFIBODY® MOLECULES ARE PROTOCOL SPECIFIC. PLEASE REFER TO THE "PROTOCOLS" SECTION.

## Images

---



Immunohistochemistry (Frozen sections) - Anti-ErbB2 / HER2 Affibody® Molecule (HRP) (ab31896)

Frozen tissue sections of a SK-OV-3 xenograft tumor was stained with HRP-conjugated Anti-ErbB2 / HER2 Affibody® molecule. Strong membrane staining was observed in tumor cells but not in mouse connective tissues.

### RESULTS

#### IMMUNOHISTOCHEMICAL STAINING OF FROZEN TISSUE SECTIONS

Xenograft tumors of the human ovarian adenocarcinoma, SK-OV-3 was soaked in formaldehyde and then snap-frozen in liquid nitrogen and used for immunohistochemical staining with the HRP-conjugated Anti- ErbB 2 Affibody® molecule. Frozen tissue sections were stained with HRP-conjugated Anti-ErbB2 / HER2 Affibody® molecule for 45 minutes at room temperature. The staining was developed with DAB substrate and the tissue sections were counter stained with Mayers Haematoxylin. The resulting microscope image shows strong brown membrane staining of tumor cells in the xenograft whereas the mouse connective tissue that surrounds and traverses the tumor remains negative.

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

### Our Abpromise to you: Quality guaranteed and expert technical support

---

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

### Terms and conditions

---

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors