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antibody and ELISA experts

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Anti-Eph receptor A2/EPHA2 Antibody Picoband®

Catalog Number: A00578

About EPHA2

EPHA2 (ephrin type-A receptor 2) also known as ECK, is a protein that in humans is encoded by the EPHA2 gene. This gene belongs to the ephrin receptor subfamily of the protein-tyrosine kinase family. Receptors in the EPH subfamily typically have a single kinase domain and an extracellular region containing a Cys-rich domain and 2 fibronectin type III repeats. By somatic cell hybrid analysis and fluorescence in situ hybridization, the EPHA2 gene is mapped to chromosome 1p36.1. EPHA2 was readily detectable in human lens fiber cells using immunoblot and immunohistochemistry. EGFR and EPHA2 mediated HCV entry by regulating CD81 -claudin-1 (CLDN1) coreceptor associations and viral glycoprotein-dependent membrane fusion.

Overview

Product Name	Anti-Eph receptor A2/EPHA2 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-Eph receptor A2/EPHA2 Antibody Picoband® catalog # A00578. Tested in ELISA, Flow Cytometry, IF, ICC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	ELISA, Flow Cytometry, IF, ICC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P29317

Technical Details

Immunogen	E. coli-derived human Eph receptor A2 recombinant protein (Position: M851-N970).
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti- Rabbit IgG Super Vision Assay Kit (SV0002-1) for ICC.
Cross Reactivity	No cross-reactivity with other proteins.
Isotype	Rabbit IgG
Form	Lyophilized

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Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml Immunocytochemistry/Immunofluorescence, 5ug/ml Flow Cytometry (Fixed), 1-3ug/1x10^6 cells ELISA, 0.1-0.5ug/ml

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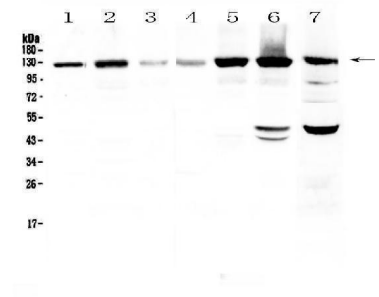
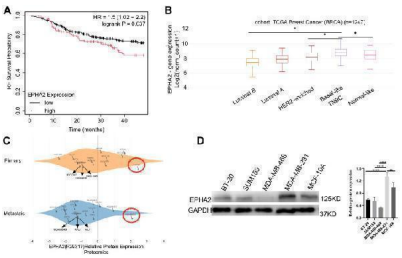
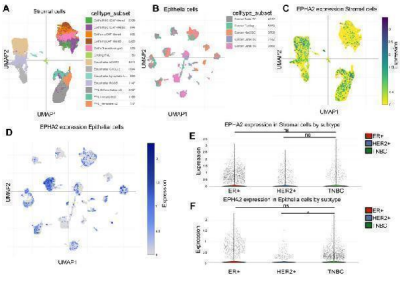
Anti-Eph receptor A2/EPHA2 Antibody Picoband® (A00578) Images



Western blot analysis of Eph receptor A2 using anti-Eph receptor A2 antibody (A00578). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions. Lane 1: human Hela cell lysate,Lane 2: human U-87MG cell lysate,Lane 3: human SHG-44 cell lysate,Lane 4: human COLO-320 cell lysate,Lane 5: human SK-OV-3 cell lysate,Lane 6: human A549 cell lysate,Lane 7: mouse HEPA1-6 cell lysate. After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Eph receptor A2 antigen affinity purified polyclonal antibody (Catalog # A00578) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for Eph receptor A2 at approximately 125KD. The expected band size for Eph receptor A2 is at 108KD.



Analysis of EPHA2 expression (A) High EPHA2 were associated with shorter relapse-free survival (RFS) in TNBC (Logrank p = 0.037) as demonstrated by Kaplan-Meier analysis. (B) According to the results of UCSC Xena in different BRCA subtypes, the expression level of EPHA2 was higher in TNBC than that in Luminal A (p = 0.034), Luminal B (p = 0.019) and normal-like (p = 0.031) (Mann–Whitney test). (C) Relative protein expression of EPHA2 in different BRCA cell lines derived from metastatic tumors and primary tumors using DepMap portal. (D) The confirmation of relative protein expression of EPHA2 in different BRCA cell lines using western blot. *p < 0.05, **p < 0.01, ****p < 0.0001.Index in PubMed under a CC BY license. PMID: 40919148



Spatial distribution of cell types expressing EPHA2. (A) UMAP plots of stromal cells. (B) UMAP plots of epithelial cells. (C) EPHA2 expression distribution in stromal cells by subtype and celltype_subset. (D) EPHA2 expression distribution in epithelial cells by celltype_subset and subtype. (E) EPHA2 expression in different stromal cells. (F) EPHA2 expression in different epithelial cells. All these were analyzed using Single Cell Portal ( ). * p < 0.05, ns indicates no significant difference (Mann–Whitney test).Index in PubMed under a CC BY license. PMID: 40919148

EPHA2 knockdown affected MDA-MB-231 proliferation and invasion. (A) The verification of the knockdown efficiency of

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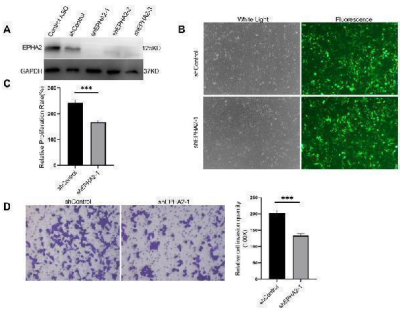
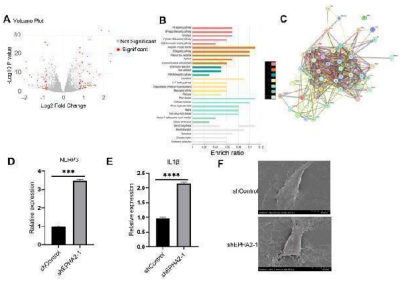
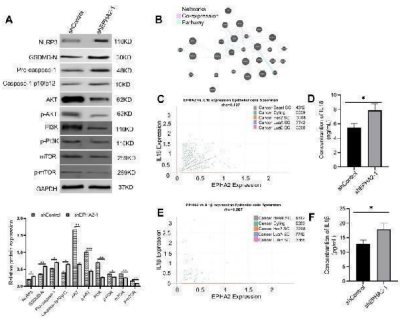


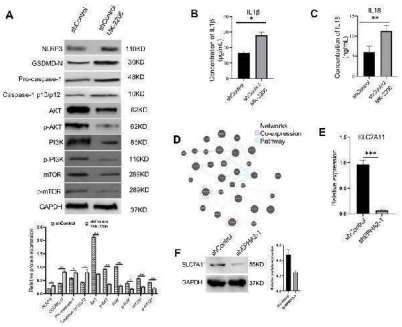
three EPHA2 shRNAs. (B) The transduction efficiency of EPHA2 shRNA was confirmed using Fluorescence microscopy. (C) Relative proliferation of MDA-MB-231 cells was decreased in EPHA2 shRNA group, compared to the control shRNA group (p = 0.0007, t -test). (D) Knockdown of EPHA2 inhibited invasion of MDA-MB-231 as assessed by crystal violet staining (p = 0.0003, t -test). Bars represent the mean ± SD. ***p < 0.001.Index in PubMed under a CC BY license. PMID: 40919148



EPHA2 knockdown induced MDA-MB-231 pyroptosis. (A) Volcano plot demonstrating an overview of the differential expression of all genes. (B) Enrichment ratio and enriched function of these DEGs was analyzed using KOBAS online server. C1-C5 represent different clusters. (C) STRING protein-protein interaction network. Proteins are represented as nodes while interactions appear as edges. Relative NLRP3 expression (D) and IL1beta expression (E) in EPHA2 shRNA groups were all lower than in control shRNA groups (p = 0.0006 and p = 0.0001, respectively, t -test). (F) The electron microscopy images of control shRNA and EPHA2 shRNA, red arrows indicating the apoptotic bodies for pyroptotic morphology. Bars represent the mean ± SD.Index in PubMed under a CC BY license. PMID: 40919148



EPHA2 knockdown induced pyroptosis pathway activation and inhibits PI3K/AKT/mTOR signal pathway activation. (A) Western blot analysis of NLRP3, GSDMD, caspase-1, AKT, p-AKT, PI3K, p-PI3K, mTOR and p-mTOR expression. * p



AKT inhibition induced MDA-MB-231 pyroptosis and decrease SLC7A11 expression. (A) Western blot analysis of NLRP3, GSDMD, caspase-1, AKT, p-AKT, PI3K, p-PI3K, mTOR and p-mTOR expression in MDA-MB-231 cells treated with AKT inhibitor or control buffer. * p

Flow Cytometry analysis of A549 cells using anti-Eph receptor A2 antibody (A00578). Overlay histogram showing A549 cells stained with A00578 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-Eph receptor A2 Antibody (A00578,1ug/1x106 cells) for 30 min at 20°C.

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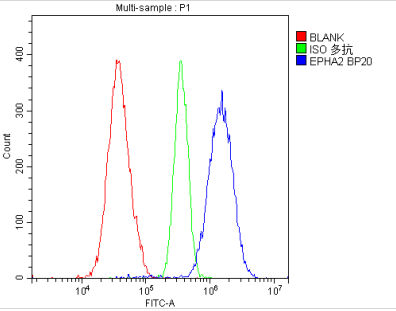
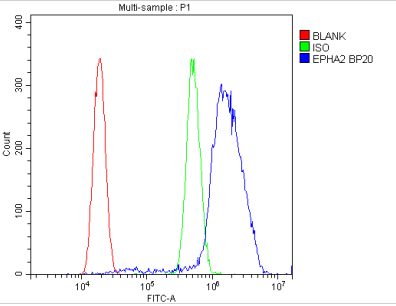
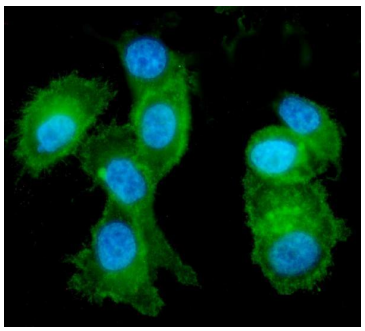


DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10ug/1x106 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1ug/1x106) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Flow Cytometry analysis of U20S cells using anti-Eph receptor A2 antibody (A00578). Overlay histogram showing U20S cells stained with A00578 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-Eph receptor A2 Antibody (A00578,1ug/1x106 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10ug/1x106 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1ug/1x106) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



IF analysis of Eph receptor A2 using anti-Eph receptor A2 antibody (A00578). Eph receptor A2 was detected in immunocytochemical section of PC-3 cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5ug/mL rabbit anti-Eph receptor A2 Antibody (A00578) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

Anti-Eph receptor A2/EPHA2 Antibody

For Research Use Only. Not for use in diagnostic procedures.