BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

Anti-DARS2 Antibody Picoband®

Catalog Number: A06034-1

About DARS2

DARS2 contains conserved residues involved in ATP binding, tRNA binding, and aspartic acid recognition, as well as catalytic site motifs characteristic of amino acid tRNA synthetases. The protein encoded by this gene belongs to the class-II aminoacyl-tRNA synthetase family. It is a mitochondrial enzyme that specifically aminoacylates aspartyl-tRNA. Mutations in this gene are associated with leukoencephalopathy with brainstem and spinal cord involvement and lactate elevation (LBSL). The International Radiation Hybrid Mapping Consortium mapped the DARS2 gene to chromosome 1.

Submit a product review to Biocompare.com





Submit a review of this product to Biocompare.com to receive a $20 Amazon.com giftcard! Your reviews help your fellow scientists make the right decisions. Thank you for your contribution.

Overview

Product Name	Anti-DARS2 Antibody Picoband®
Reactive Species	Human
Description	Boster Bio Anti-DARS2 Antibody Picoband® catalog # A06034-1. Tested in ELISA, Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human. 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, IHC, 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	Q6PI48

Technical Details

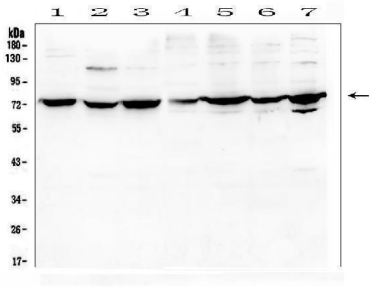
Immunogen	E.coli-derived human DARS2 recombinant protein (Position: D334-A448).
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

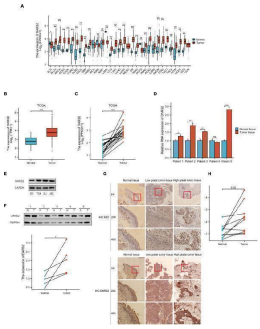
	blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P) and ICC.
Cross Reactivity	No cross-reactivity with other proteins.
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml Immunocytochemistry/Immunofluorescence, 2ug/ml Flow Cytometry (Fixed), 1-3ug/1x10^6 cells ELISA, 0.1-0.5ug/ml Note: For flow cytometry (FCM), suitable for fixed cells only. Not suitable for FACS or surface flow cytometry using live cells.

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

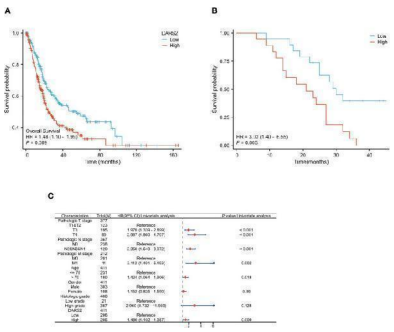
Anti-DARS2 Antibody Picoband® (A06034-1) Images



Western blot analysis of DARS2 using anti-DARS2 antibody (A06034-1). 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 A431 whole cell lysates,Lane 2: human K562 whole cell lysates,Lane 3: human A549 whole cell lysates,Lane 4: human PC-3 whole cell lysates,Lane 5: human U2OS whole cell lysates,Lane 6: human Caco-2 whole cell lysates,Lane 7: human HEK293 whole cell lysates. 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-DARS2 antigen affinity purified polyclonal antibody (Catalog # A06034-1) 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 DARS2 at approximately 74KD. The expected band size for DARS2 is at 74KD.



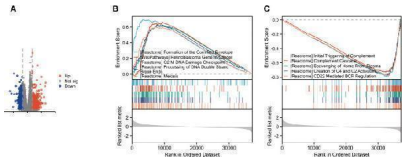
DARS2 Expression in BLCA. (A) DARS2 Pan-Cancer Analysis. (B) TCGA Analysis of DARS2 Expression in BLCA. (C) The expression of DARS2 in paired bladder cancer in TCGA. (D) qPCR analysis of DARS2 expression in 5 pairs of bladder cancer tissues. (E) Expression of DARS2 in bladder cancer cells and normal urothelial cells by western blot. (F) Western blot analysis of DARS2 expression in 5 pairs of bladder cancer tissues. (G) Immunohistochemistry of DARS2 and Ki67 in bladder cancer tissues. (H) Immunohistochemical analysis of DARS2 in 10 pairs of bladder cancer tissues. *P<0.05, **P<0.01, ***P<0.001. ns, no statistical difference.Index in PubMed under a CC BY license. PMID: 38299141



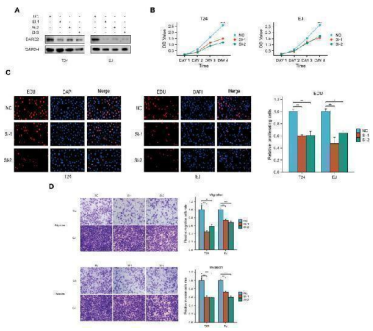
DARS2 as an Independent Prognostic Factor in BLCA. (A) Kaplan-Meier analysis of OS in the TCGA BLCA. (B) Kaplan-Meier analysis of OS in the 37 cases of BLCA immunohistochemistry. (C) DARS2 expression distribution and survival status.Index in PubMed under a CC BY license. PMID: 38299141

Identification and Enrichment Analysis of Differentially Expressed Genes. (A) Volcano plot for differentially expressed genes between high and low expression of DARS2

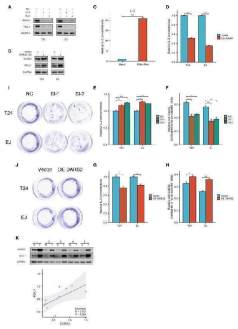
BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com



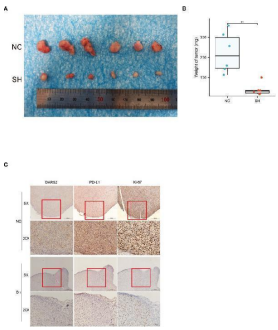
in BLCA patients. (B) GSEA revealed the top five are positively correlated. (C) GSEA revealed the top five are poorly correlated.Index in PubMed under a CC BY license. PMID: 38299141



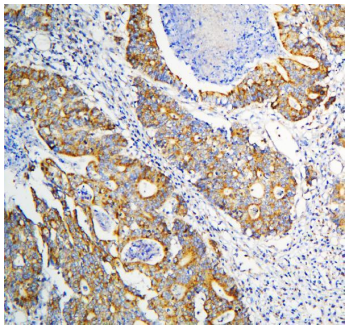
DARS2 Regulates Bladder Cancer Cell Proliferation, Migration, and Invasion. (A) DARS2 knockdown in T24 and EJ cells. (B, C) The impact of DARS2 on proliferation in T24 and EJ cells via CCK8, EDU. (D) The impact of DARS2 on migration and invasion in T24 and EJ cells. *P<0.05, **P<0.01, ***P<0.001.Index in PubMed under a CC BY license. PMID: 38299141



Bladder cancer cells and Jurkat cells co-cultured. (A, B) PD-L1 changes after interference and overexpression of DARS2. (C) Relative concentration of IL-2 in culture medium after activation of jurkat cells by PMA and PHA. (D) Relative concentration of IL-2 in the culture medium after co-culture of activated Jurkat cells and untreated bladder cancer cells. (E, G) Relative concentration of IL-2 in the co-culture system after knocking down and overexpressing DRAS2. (F, H) Viability of residual surviving tumor cells in co-culture system after knockdown and overexpression of DRAS2 (I, J) Crystal violet staining of remaining surviving tumor cells in the co-culture system after knocking down and overexpressing DRAS2. (K) Expression of DARS2 and PD-L1 in bladder cancer cells and normal urothelial cells by western blot and analysis of the correlation between shigeDARS2 and PD-L1. *P<0.05, **P<0.01, ***P<0.001.Index in PubMed under a CC BY license. PMID: 38299141



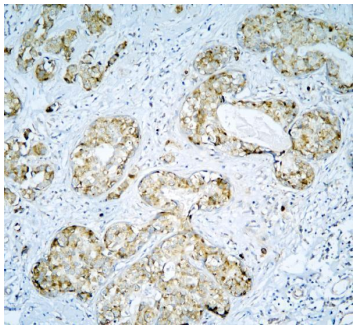
(A, B) subcutaneous tumor formation in nude mice. (C) Immunohistochemical staining of DARS2, PD-L1 and Ki67 in subcutaneous tumor samples from nude mice. *P<0.05, **P<0.01, ***P<0.001.Index in PubMed under a CC BY license. PMID: 38299141



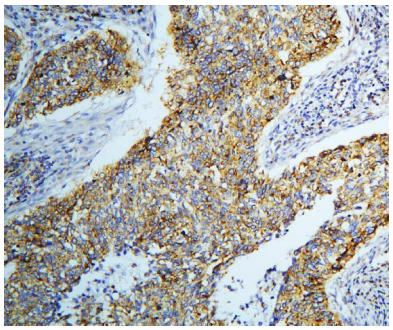
IHC analysis of DARS2 using anti-DARS2 antibody (A06034-1).DARS2 was detected in paraffin-embedded section of human intestinal cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-DARS2 Antibody (A06034-1) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

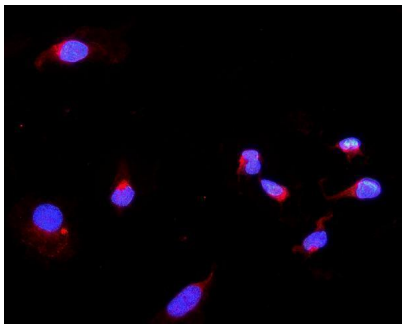
minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.



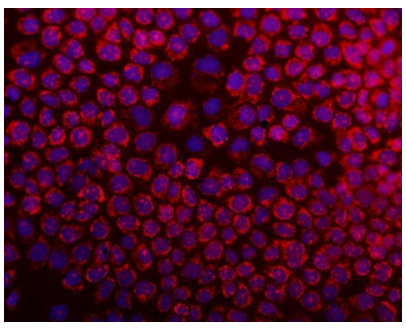
IHC analysis of DARS2 using anti-DARS2 antibody (A06034-1).DARS2 was detected in paraffin-embedded section of human mammary cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-DARS2 Antibody (A06034-1) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.



IHC analysis of DARS2 using anti-DARS2 antibody (A06034-1). DARS2 was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-DARS2 Antibody (A06034-1) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.

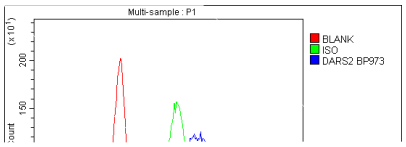


IF analysis of DARS2 using anti-DARS2 antibody (A06034-1). DARS2 was detected in immunocytochemical section of U20S cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 2ug/mL rabbit anti-DARS2 Antibody (A06034-1) overnight at 4°C. DyLight®550 Conjugated Goat Anti-Rabbit IgG (BA1135) 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.



IF analysis of DARS2 using anti-DARS2 antibody (A06034-1). DARS2 was detected in immunocytochemical section of A431 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 2ug/mL rabbit anti-DARS2 Antibody (A06034-1) overnight at 4°C. Cy3 Conjugated Goat Anti-Rabbit IgG (BA1032) 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.

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com



Flow Cytometry analysis of K562 cells using anti-DARS2 antibody (A06034-1).Overlay histogram showing K562 cells stained with A06034-1 (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-DARS2 Antibody (A06034-1,1ug/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.

Anti-DARS2 Antibody

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