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Pan-cadherin Polyclonal Antibody

Catalog Number 71-7100

Product data sheet

Details	
Size	100 µg
Host/Isotope	Rabbit / IgG
Class	Polyclonal
Type	Antibody
Immunogen	Synthetic peptide derived from the carboxy-terminus of the chicken N-cadherin protein.
Conjugate	Unconjugated
Form	Liquid
Concentration	0.25 mg/mL
Purification	Antigen affinity chromatography
Storage buffer	PBS, pH 7.4
Contains	0.1% sodium azide
Storage Conditions	-20°C

Species Reactivity	
Species reactivity	Dog, Chicken, Human, Mouse, Non-human primate, Rat, Xenopus
Published species	Dog, Rat, Bovine, Human, Mouse, Not Applicable

Tested Applications	Dilution *
ELISA (ELISA)	Assay-dependent
Immunohistochemistry (Paraffin) (IHC (P))	1:100
Western Blot (WB)	1-2 µg/mL
Immunocytochemistry (ICC/IF)	2-3 µg/mL

Published Applications	
Immunocytochemistry (ICC/IF)	See 2 publications below
Western Blot (WB)	See 7 publications below
Miscellaneous PubMed (Misc)	See 2 publications below
Immunohistochemistry (Paraffin) (IHC (P))	See 1 publications below
Immunohistochemistry (IHC)	See 1 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Product specific information

This peptide antibody is broadly cross-reactive with all members of the cadherin family of proteins including N-cadherin, E-cadherin, P-cadherin, and R-cadherin. The antibody also displays broad species cross-reactivity including human, bovine, mouse, rat, chicken, amphibian, as well as other species. Rabbit anti-pan-Cadherin is useful as both a ubiquitous cadherin probe as well as a marker for adherens junctions. 71-7100 was used successfully in the immunofluorescence analysis of pan cadherin in MDCK cells.

Background/Target Information

Pan Cadherin including CDH1, CDH2, CDH3, CDH4 protein belong to a family of transmembrane molecules that mediate calcium-dependent intercellular adhesion. Cadherins are involved in controlling morphogenetic movements during development and regulate cell surface adhesion through homotypic adhesion with the same cadherin species. N-cadherin's function is dependent on its association with the actin-cytoskeleton and is mediated through interactions between the C-terminal region of N-cadherin and the cytoplasmic catenin proteins. The stability of this association is regulated by phosphorylation and dephosphorylation of beta-catenin.This gene is a classical cadherin from the cadherin superfamily. The encoded protein is a calcium dependent cell-cell adhesion glycoprotein comprised of five extracellular cadherin repeats, a transmembrane region and a highly conserved cytoplasmic tail. The protein functions during gastrulation and is required for establishment of left-right asymmetry. At certain central nervous system synapses, presynaptic to postsynaptic adhesion is mediated at least in part by this gene product.

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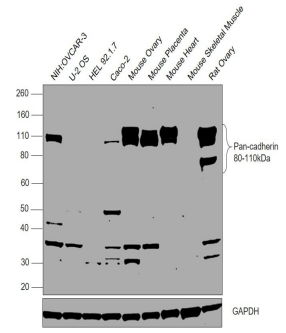
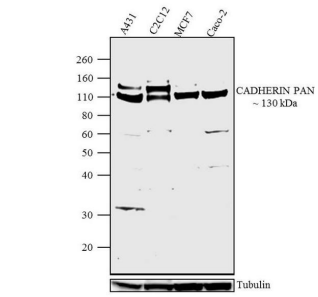
Product Images For Pan-cadherin Polyclonal Antibody



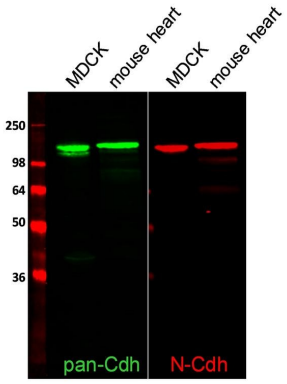
Pan-cadherin Antibody (71-7100) in WB

Western Blot was performed using Anti-Pan-cadherin Polyclonal Antibody (Product # 71-7100) and a 80-110 kDa band corresponding to Cadherin-3 was observed across all the tested cell lines and tissues, except U-2 OS, HEL 92.1.7 and Mouse Skeletal Muscle. Whole cell extracts (30 µg lysate) of NIH:OVCAR-3 (Lane 1), U-2 OS (Lane 2), HEL 92.1.7 (Lane 3), Caco-2 (Lane 4), Mouse Ovary (Lane 5), Mouse Placenta (Lane 6), Mouse Heart (Lane 7), Mouse Skeletal Muscle (Lane 8), Rat Ovary (Lane 9) were electrophoresed using NuPAGE™ 4-12% Bis-Tris Protein Gel (Product # NP0322BOX). Resolved proteins were then transferred onto a nitrocellulose membrane (Product # IB23002) by iBlot® 2 Dry Blotting System (Product # IB21001). The blot was probed with the primary antibody (1 µg /mL) and detected by chemiluminescence with Goat anti-Rabbit IgG (Heavy Chain) Superclonal™ Recombinant Secondary Antibody, HRP (Product # A27036, 1/4000) using the iBright FL 1000 (Product # A32752). Chemiluminescent detection was performed using Novex® ECL Chemiluminescent Substrate Reagent Kit (Product # WP20005).



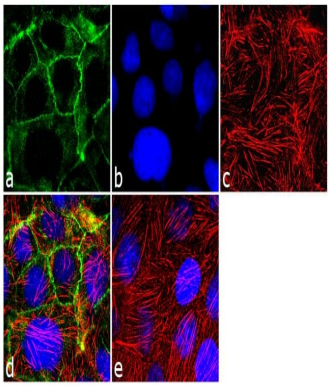
Pan-cadherin Antibody (71-7100) in WB

Western blot analysis was performed on membrane enriched extracts (30 µg lysate) of A431 (Lane 1), C2C12 (Lane 2), MCF 7 (Lane 3) and Caco2 (Lane 4). The blots were probed with Anti-CADHERIN PAN Rabbit Polyclonal Antibody (Product # 71-7100, 1-2 µg/mL) and detected by chemiluminescence using Goat anti-Rabbit IgG (H+L) Secondary Antibody, HRP conjugate (Product # G-21234, 1:5000 dilution). A ~ 130 kDa band corresponding to CADHERIN PAN was observed across cell lines tested. Known quantity of protein samples were electrophoresed using Novex® NuPAGE® 10 % Bis-Tris gel (Product # NP0302BOX), XCell SureLock™ Electrophoresis System (Product # EI0002) and Novex® Sharp Pre-Stained Protein Standard (Product # LC5800). Resolved proteins were then transferred onto a nitrocellulose membrane with Pierce™ Power Blotter System (Product # 22834). The membrane was probed with the relevant primary and secondary Antibody following blocking with 5 % skimmed milk. Chemiluminescent detection was performed using Pierce™ ECL Western Blotting Substrate (Product # 32106).



Pan-cadherin Antibody (71-7100) in WB

Western blot analysis of total Cadherin and N-Cadherin was performed by loading 2 µL SeeBlue® Plus2 Prestained Protein Ladder (Product # LC5925), 50 µg of MDCK cell lysates and 10 µg mouse heart lysate per well onto a 4-20% Tris-HCl polyacrylamide gel. Proteins were transferred to a nitrocellulose membrane and blocked with 1% BSA/TBST for at least 1 hour at room temperature. Total cadherin was detected using a rabbit antibody (Product # 71-7100) and N-Cadherin was detected using a mouse antibody (Product # 33-3900), both at a concentration of 1 µg/mL in blocking buffer overnight at 4°C on a rocking platform. The blot was then incubated with goat anti-rabbit IgG-Alexa Fluor 790 secondary antibody (Product # A11369) and goat anti-mouse IgG-Alexa Fluor 680 secondary antibody (Product # A-21058) at a dilution of 1:10,000 for at least 1 hour. Fluorescent detection was performed using the Odyssey® CLx imaging system (Li-cor Biosciences). Images generated by Joell Solan in Paul Lampe Lab at Fred Hutchinson Cancer Research Center.



Pan-cadherin Antibody (71-7100) in ICC/IF

Immunofluorescence analysis of Pan-Cadherin was performed using 90% confluent log phase Caco-2 cells. The cells were fixed with 4% paraformaldehyde for 10 minutes, permeabilized with 0.1% Triton™ X-100 for 10 minutes, and blocked with 2% BSA for 1 hour at room temperature. The cells were labeled with Cadherin pan Rabbit Polyclonal Antibody (Product # 71-7100) at 2 µg/mL in 0.1% BSA and incubated for 3 hours at room temperature and then labeled with Goat anti-Rabbit IgG (Heavy Chain) Superclonal™ Secondary Antibody, Alexa Fluor® 488 conjugate (Product # A27034) a dilution of 1:2000 for 45 minutes at room temperature (Panel a: green). Nuclei (Panel b: blue) were stained with SlowFade® Gold Antifade Mountant with DAPI (Product # S36938). F-actin (Panel c: red) was stained with Alexa Fluor® 555 Rhodamine Phalloidin (Product # R415, 1:300). Panel d represents the merged image showing cell junctional localization. Panel e shows the no primary antibody control. The images were captured at 60X magnification.

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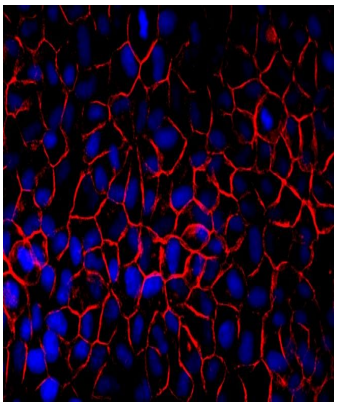
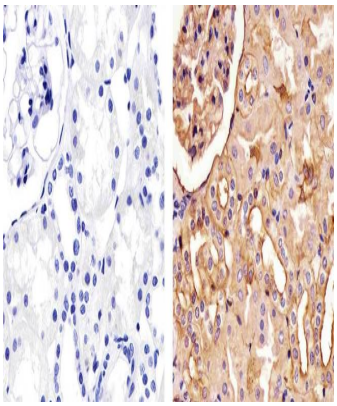


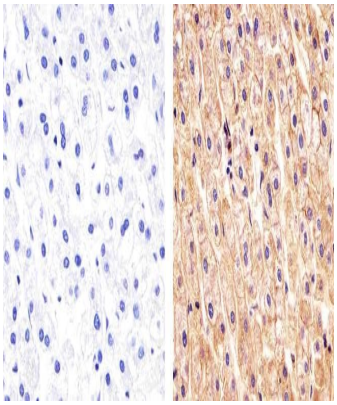
Pan-cadherin Antibody (71-7100) in ICC/IF

Immunofluorescent detection of pan cadherin in MDCK cells. Confluent monolayers were fixed in 50%methanol/50% Acetone, blocked for at least 30 minutes in 1% BSA then incubated 2 hours with a pan cadherin antibody (Product # 71-7100) at 2.5 µg/mL, washed, then incubated 1 hour with Alexa Fluor 594 conjugated Donkey anti-Rabbit secondary antibody (Product # A-21207) at 1:2000 dilution. Cells were counterstained with DAPI (blue). Coverslips were mounted with Prolong Gold Antifade reagent (Product # P36930) and imaged at 40X. Images generated by Joell Solan in Paul Lampe Lab at the Fred Hutchinson cancer Research Center.



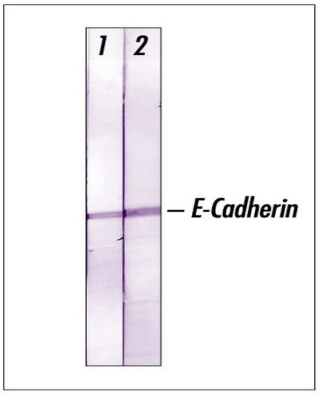
Pan-cadherin Antibody (71-7100) in IHC (P)

Immunohistochemistry analysis of Cadherin pan showing staining in the membrane and also weakly in the cytoplasm of paraffin-embedded human kidney tissue (right) compared to a negative control without primary antibody (left). To expose target proteins, antigen retrieval was performed using 10mM sodium citrate (pH 6.0), microwaved for 8-15 min. Following antigen retrieval, tissues were blocked in 3% H2O2-methanol for 15 min at room temperature, washed with ddH2O and PBS, and then probed with a Anti- Cadherin pan Polyclonal Antibody (Product # 71-7100) diluted in 3% BSA-PBS at a dilution of 1:100 overnight at 4°C in a humidified chamber. Tissues were washed extensively in PBST and detection was performed using an HRP-conjugated secondary antibody followed by colorimetric detection using a DAB kit. Tissues were counterstained with hematoxylin and dehydrated with ethanol and xylene to prep for mounting.



Pan-cadherin Antibody (71-7100) in IHC (P)

Immunohistochemistry analysis of Cadherin pan showing staining in the membrane and also weakly in the cytoplasm of paraffin-embedded human liver tissue (right) compared to a negative control without primary antibody (left). To expose target proteins, antigen retrieval was performed using 10mM sodium citrate (pH 6.0), microwaved for 8-15 min. Following antigen retrieval, tissues were blocked in 3% H2O2-methanol for 15 min at room temperature, washed with ddH2O and PBS, and then probed with a Anti- Cadherin pan Polyclonal Antibody (Product # 71-7100) diluted in 3% BSA-PBS at a dilution of 1:100 overnight at 4°C in a humidified chamber. Tissues were washed extensively in PBST and detection was performed using an HRP-conjugated secondary antibody followed by colorimetric detection using a DAB kit. Tissues were counterstained with hematoxylin and dehydrated with ethanol and xylene to prep for mounting.



Pan-cadherin Antibody (71-7100) in WB

Recognition of E-Cadherin in A431 cells by using Rabbit pan-Cadherin.

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PubMed References For Pan-cadherin Polyclonal Antibody

2 Immunocytochemistry References

Species / Dilution	Summary
Human / Not Cited Mouse / Not Cited	Cancer research (2004; 64: 8994) **"Conditional ROCK activation in vivo induces tumor cell dissemination and angiogenesis."** Author(s):Croft DR,Sahai E,Mavria G,Li S,Tsai J,Lee WM,Marshall CJ,Olson MF PubMed Article URL:http://dx.doi.org/10.1158/0008-5472.CAN-04-2052
Human / Not Cited	71-7100 was used in Immunocytochemistry-immunoflourescence to demonstrate strongly the ability of DNA-peptide based scaffolds as potential materials to develop nerve tissue conduits for neural tissue engineering applications in the future. Nanoscale (2022; 14: 8611) **"Peptide functionalized DNA hydrogel enhances neuroblastoma cell growth and differentiation."** Author(s):Hivare P,Gangrade A,Swarup G,Bhavsar K,Singh A,Gupta R,Thareja P,Gupta S,Bhatia D PubMed Article URL:http://dx.doi.org/10.1039/d1nr07187d

7 Western Blot References

Species / Dilution	Summary
Human / Not Cited	71-7100 was used in Western Blotting to demonstrates an important role and the mechanism of RARRES1 in podocyte injury in glomerular disease. The Journal of clinical investigation (2020; 130: 5523) **"Soluble RARRES1 induces podocyte apoptosis to promote glomerular disease progression."** Author(s):Chen A,Feng Y,Lai H,Ju W,Li Z,Li Y,Wang A,Hong Q,Zhong F,Wei C,Fu J,Guan T,Liu B,Kretzler M,Lee K,He JC PubMed Article URL:http://dx.doi.org/10.1172/JCI140155
Human / 1:1000	71-7100 was used in Western Blotting to conclude that the CACNA1C clinical variant mimics the increased activity associated with the upregulation of CaV1.2 by Ca2+-CaM, thus maintaining a majority of channels in a constitutively active mode that could ultimately promote ventricular arrhythmias. The Journal of biological chemistry (2022; 298:) **"A CACNA1C variant associated with cardiac arrhythmias provides mechanistic insights in the calmodulation of L-type Ca²⁺ channels."** Author(s):Zhao J,Segura E,Marsolais M,Parent L PubMed Article URL:http://dx.doi.org/10.1016/j.jbc.2022.102632
Human / Not Cited	Molecular biology of the cell (2004; 15: 4310) **"Myofibroblast development is characterized by specific cell-cell adherens junctions."** Author(s):Hinz B,Pittet P,Smith-Clerc J,Chaponnier C,Meister JJ PubMed Article URL:http://dx.doi.org/10.1091/mbc.e04-05-0386
Mouse / 1:200	71-7100 was used in Western Blotting to describe a new and reproducible 3-D cell culture method for studying cardiac cell lineage differentiation in vitro. Methods and protocols (2022; 5:) **"Application of Three-Dimensional Culture Method in the Cardiac Conduction System Research."** Author(s):Mishra A,Pasumarthi KBS PubMed Article URL:http://dx.doi.org/10.3390/mps5030050
Mouse / 1:10000	71-7100 was used in Western Blotting to show the value of lipidomics to unveil unexpected mechanisms underlying lipid dyshomeostasis ensuing from mitochondrial dysfunction, implying peroxisomes and liver which likely contribute to the pathophysiology of Leigh syndrome French-Canadian variant. JCI insight (2019; 4:) **"Lipidomics unveils lipid dyshomeostasis and low circulating plasmalogens as biomarkers in a monogenic mitochondrial disorder."** Author(s):Ruiz M,Cuillerier A,Daneault C,Deschênes S,Frayne IR,Bouchard B,Forest A,Legault JT,Vaz FM,Rioux JD,Burelle Y,Des Rosiers C PubMed Article URL:http://dx.doi.org/10.1172/jci.insight.123231
Dog / Not Cited	71-7100 was used in Western Blotting to provide evidence for the distinct roles of Map and EspF in tight junction disruption through non-synergistic functions. Scientific reports (2018; 8:) **"Enteropathogenic E. coli effectors EspF and Map independently disrupt tight junctions through distinct mechanisms involving transcriptional and post-transcriptional regulation."** Author(s):Singh AP,Sharma S,Pagarware K,Siraji RA,Ansari I,Mandal A,Walling P,Aijaz S PubMed Article URL:http://dx.doi.org/10.1038/s41598-018-22017-1

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Human / Not Cited	Molecular biology of the cell (2004; 15: 5064) **"Differential regulation of the TRAIL death receptors DR4 and DR5 by the signal recognition particle."** Author(s):Ren YG,Wagner KW,Knee DA,Aza-Blanc P,Nasoff M,Deveraux QL PubMed Article URL:http://dx.doi.org/10.1091/mbc.e04-03-0184

2 Miscellaneous PubMed References

Species / Dilution	Summary
Dog / Not Cited	71-7100 was used in immunocytochemistry and western blot to study the differentiation and transformation of canine kidney MDCK cells cultured in either a 2D or 3D environment
	Laboratory investigation; a journal of technical methods and pathology (2010; 90: 915) **"Different responses in transformation of MDCK cells in 2D and 3D culture by v-Src as revealed by microarray techniques, RT-PCR and functional assays."** Author(s):Töyli M,Rosberg-Kulha L,Capra J,Vuoristo J,Eskelinen S PubMed Article URL:http://dx.doi.org/10.1038/labinvest.2010.63
Rat / Not Cited	71-7100 was used in immunohistochemistry - frozen section to assess the use of connexin-43 monoclonal antibodies
	Bulletin of experimental biology and medicine (2009; 148: 725) **"Immunofluorescent analysis of connexin-43 using monoclonal antibodies to its extracellular domain."** Author(s):Baklaushev VP,Gurina OI,Yusubalieva GM,Grinenko NF,Cytrin EB,Victorov IV,Chekhonin VP PubMed Article URL:http://dx.doi.org/10.1007/s10517-010-0802-x

1 Immunohistochemistry (Paraffin) References

Species / Dilution	Summary
Not Applicable / 1:1000	71-7100 was used in immunohistochemistry - paraffin section and western blot to demonstrate that p27 is expressed in proliferating cells
	BMC clinical pathology (2005; 5:) **"p27Kip1 is expressed in proliferating cells in its form phosphorylated on threonine 187."** Author(s):Troncone G,Martinez JC,Iaccarino A,Zeppa P,Caleo A,Russo M,Migliaccio I,Motti ML,Califano D,Palmieri EA,Palombini L PubMed Article URL:http://dx.doi.org/10.1186/1472-6890-5-3

1 Immunohistochemistry References

Species / Dilution	Summary
Human / 1:400	Oncogene (2004; 23: 1766) **"ESX induces transformation and functional epithelial to mesenchymal transition in MCF-12A mammary epithelial cells."** Author(s):Schedin PJ,Eckel-Mahan KL,McDaniel SM,Prescott JD,Brodsky KS,Tentler JJ,Gutierrez-Hartmann A PubMed Article URL:http://dx.doi.org/10.1038/sj.onc.1207391

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