

OCT4 Monoclonal Antibody (9B7)

Catalog NumberMA1-104

Product data sheet

Details		Species Reactivity	
Size	100 µg	Species reactivity	Human, Mouse
Host/Isotope	Mouse / IgG1	Published species	Human
Class	Monoclonal	Tested Applications	
Type	Antibody	Flow Cytometry (Flow)	Dilution *3-5 µg/1x10^6 cells
Clone	9B7	Western Blot (WB)	1:500-1:5,000
Immunogen	Full length human recombinant protein of human POU5F1 produced in E.coli.	Immunocytochemistry (ICC/IF)	1-2 µg/mL
		Published Applications	
		Immunocytochemistry (ICC/IF)	See 6 publications below
Conjugate	Unconjugated	Flow Cytometry (Flow)	See 3 publications below
Form	Liquid	* 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.	
Concentration	1 mg/mL		
Purification	Protein A		
Storage buffer	PBS with 1mg/mL BSA, 30% glycerol		
Contains	0.05% sodium azide		
Storage Conditions	-20°C		

Product specific information

MA1-104 detects Oct4/Pou5F1 in Human embryonic carcinomic samples, but not in adult samples (e.g. HeLa cells). This antibody did not show reactivity in a mouse embryonic cell line (i.e. F9 embryonic carcinoma cells). MA1-104 has been successfully used in FACS, IF, and WB. By Western blot, this antibody detects a band at 40 kDa in human NCCIT and NTERA-2 embryonal carcinoma cells, but not in negative control cells.

Background/Target Information

POU5F1, also commonly known as Oct-4, is a maternally expressed octamer-binding protein that was the first transcription factor described for the early stages of development. The role of POU5F1 in embryonic development suggested that it might be useful in the creation of stem cells that might be useful in cell replacement therapies in the treatment of several degenerative diseases. Artificial stem cells, termed induced pluripotent stem (iPS) cells, can be created by expressing POU5F1 and the transcription factors Sox2, Klf4 and Lin28 along with c-Myc in mouse fibroblasts. More recently, experiments have demonstrated that iPS cells could be generated using expression plasmids expressing POU5F1, Sox2, Klf4 and c-Myc, eliminating the need for virus introduction, thereby addressing a safety concern for potential use of iPS cells in regenerative medicine.

For Research Use Only. Not for use in diagnostic procedures. Not for resale without express authorization.

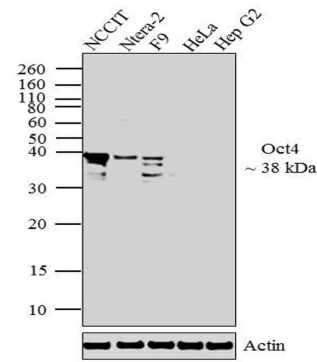
For Research Use Only. Not for use in diagnostic procedures. Not for resale without express authorization.

Products are warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Production documentation, specifications and/or accompanying package inserts ("Documentation"). No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the Buyer. Any model or sample furnished to Buyer is merely illustrative of the general type and quality of goods and does not represent that any Product will conform to such model or sample.

NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE GRANTED INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT. BUYER'S EXCLUSIVE REMEDY FOR NON-CONFORMING PRODUCTS DURING THE WARRANTY PERIOD IS LIMITED TO REPAIR, REPLACEMENT OF OR REFUND FOR THE NON-CONFORMING PRODUCT(S) AT SELLER'S SOLE OPTION. THERE IS NO OBLIGATION TO REPAIR, REPLACE OR REFUND FOR PRODUCTS AS THE RESULT OF (i) ACCIDENT, DISASTER OR EVENT OF FORCE MAJEURE, (ii) MISUSE, FAULT OR NEGLIGENCE OF OR BY BUYER, (iii) USE OF THE PRODUCTS IN A MANNER FOR WHICH THEY WERE NOT DESIGNED, OR (iv) IMPROPER STORAGE AND HANDLING OF THE PRODUCTS. Unless otherwise expressly stated on the Product or in the documentation accompanying the Product, the Product is intended for research only and is not to be used for any other purpose, including without limitation, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses, or any type of consumption by or application to human or animals.

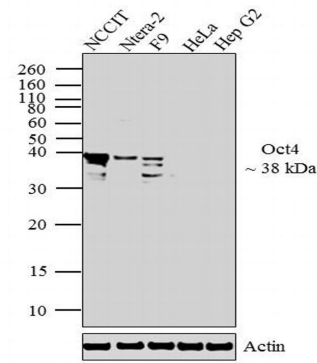
OCT4 Antibody (MA1-104)

Antibody specificity was demonstrated by detection of differential basal expression of the target across cell models owing to their inherent genetic constitution. Expression of Oct4 was observed specifically in embryonic carcinoma cell lines such as NCCIT, NTERA2 and F9 using Oct4 Mouse Monoclonal Antibody (Product # MA1-104) in western blot. {RE}



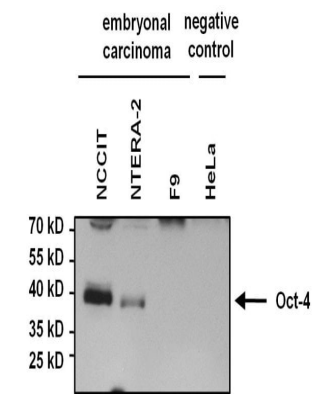
OCT4 Antibody (MA1-104) in WB

Western blot analysis was performed on whole cell extracts (30 µg lysate) of NCCIT (Lane1), Ntera-2 (Lane2), F9 (Lane 3), HeLa (Lane 4) and Hep G2 (lane 5). The blots were probed with Anti-Oct-4 Mouse Monoclonal Antibody (Product # MA1-104, 1:500-1:2000 µg/mL) and detected by chemiluminescence using Goat anti-Mouse IgG (H+L) Secondary Antibody, HRP conjugate (Product # 62-6520, 1:4000 dilution). A 38 kDa corresponding to Oct-4 was observed across cell lines tested, except in HeLa and Hep G2. Known quantity of protein samples were electrophoresed using Novex® NuPAGE® 12 % Bis-Tris gel (Product # NP0342BOX), 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 iBlot® 2 Dry Blotting System (Product # IB21001). The membrane was probed with the relevant primary and secondary Antibody using iBind™ Flex Western Starter Kit (Product # SLF2000S). Chemiluminescent detection was performed using Pierce™ ECL Western Blotting Substrate (Product # 32106).



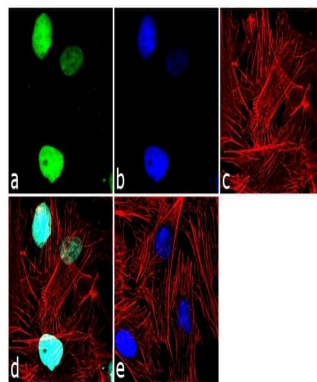
OCT4 Antibody (MA1-104) in WB

Western blot analysis of Oct4 was performed by loading 75 µg of the indicated whole cell lysates and 5 µL of the Lane Marker Reducing Sample Buffer (Product # 39000) per well onto a 4-20% Tris-HCl polyacrylamide gel. Proteins were transferred to a PVDF membrane and blocked with 5% BSA/TBST (Product # 37525) for at least 1 hour. The membrane was probed with an Oct4 monoclonal antibody (Product # MA1-104) at a dilution of 1:1000 overnight at 4° C on a rocking platform, washed in TBS-0.1%Tween 20, and probed with a goat anti-mouse IgG-HRP secondary antibody (Product # 32430) at a dilution of 1:20,000 for at least 1 hour. Chemiluminescent detection was performed using SuperSignal West Dura (Product # 34075). \*\*Note: the antibody is detecting Oct4 in the human embryonal carcinoma cells, but not in negative control HeLa cells. Unknown bands at 80 kDa were also observed with this antibody.



OCT4 Antibody (MA1-104) in ICC/IF

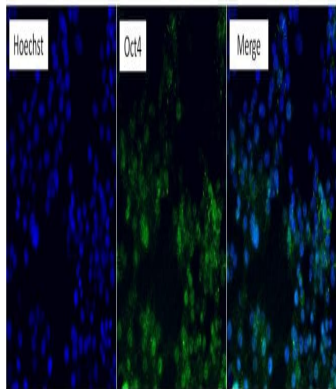
Immunofluorescence analysis of Oct4/Pou5F1 was done on 70% confluent log phase NTREA-2 cells. The cells were fixed with 4% paraformaldehyde for 10 minutes, permeabilized with 0.1% Triton™ X-100 for 10 minutes, and blocked with 1% BSA for 1 hour at room temperature. The cells were labeled with Oct4/Pou5F1 (9B7) Mouse Monoclonal Antibody (Product # MA1-104) at 2 µg/mL in 0.1% BSA and incubated for 3 hours at room temperature and then labeled with Goat anti-Mouse IgG (H+L) Superclonal™ Secondary Antibody, Alexa Fluor® 488 conjugate (Product # A28175) at 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 is a merged image showing nuclear localization. Panel e is a no primary antibody control. The images were captured at 60X magnification.



For Research Use Only. Not for use in diagnostic procedures. Not for resale without express authorization.

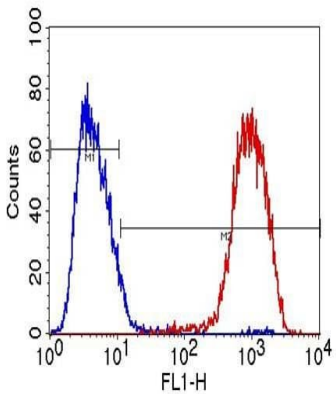
Products are warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Production documentation, specifications and/or accompanying package inserts ("Documentation"). No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the Buyer. Any model or sample furnished to Buyer is merely illustrative of the general type and quality of goods and does not represent that any Product will conform to such model or sample.

NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE GRANTED INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT. BUYER'S EXCLUSIVE REMEDY FOR NON-CONFORMING PRODUCTS DURING THE WARRANTY PERIOD IS LIMITED TO REPAIR, REPLACEMENT OF OR REFUND FOR THE NON-CONFORMING PRODUCT(S) AT SELLER'S SOLE OPTION. THERE IS NO OBLIGATION TO REPAIR, REPLACE OR REFUND FOR PRODUCTS AS THE RESULT OF (i) ACCIDENT, DISASTER OR EVENT OF FORCE MAJEURE, (ii) MISUSE, FAULT OR NEGLIGENCE OF OR BY BUYER, (iii) USE OF THE PRODUCTS IN A MANNER FOR WHICH THEY WERE NOT DESIGNED, OR (iv) IMPROPER STORAGE AND HANDLING OF THE PRODUCTS. Unless otherwise expressly stated on the Product or in the documentation accompanying the Product, the Product is intended for research only and is not to be used for any other purpose, including without limitation, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses, or any type of consumption by or application to human or animals.



### OCT4 Antibody (MA1-104) in ICC/IF

Immunofluorescent analysis of Oct4 (green) in retinoic acid-treated NCCIT cells. Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 0.3% BSA/TBST (Product # 37525) for 15 minutes at room temperature. Cells were probed with an Oct4 monoclonal antibody (Product # MA1-104) at a dilution of 1:100 for at least 1 hour at room temperature, washed with PBS, and incubated with DyLight 488 goat anti-mouse IgG secondary antibody (Product # 35502) at a dilution of 1:400 for 30 minutes at room temperature. Nuclei (blue) were stained with Hoechst 33342 dye (Product # 62249). Images were taken on a Thermo Scientific ArrayScan at 20X magnification. \*\*Note: the absence of Oct4 staining in a subset of the NCCIT cells suggests differentiation. In addition to the nuclear staining of Oct4, the antibody also shows some cytoplasmic staining.



### OCT4 Antibody (MA1-104) in Flow

Flow cytometry analysis of Oct4 (red histogram) on human NCCIT cells. Cells were harvested, fixed with 4% formaldehyde, washed with PBS, and incubated with an Oct4 monoclonal antibody (Product # MA1-104) at a 1:100 dilution or PBS alone (blue histogram) for 1 hour on ice. For flow analysis, a 30-minute incubation with DyLight 488 goat anti-mouse IgG secondary antibody (Product # 35502) was performed and 10,000 cells were acquired for each sample.

For Research Use Only. Not for use in diagnostic procedures. Not for resale without express authorization.

Products are warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Production documentation, specifications and/or accompanying package inserts ("Documentation"). No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the Buyer. Any model or sample furnished to Buyer is merely illustrative of the general type and quality of goods and does not represent that any Product will conform to such model or sample.

NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE GRANTED INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT. BUYER'S EXCLUSIVE REMEDY FOR NON-CONFORMING PRODUCTS DURING THE WARRANTY PERIOD IS LIMITED TO REPAIR, REPLACEMENT OF OR REFUND FOR THE NON-CONFORMING PRODUCT(S) AT SELLER'S SOLE OPTION. THERE IS NO OBLIGATION TO REPAIR, REPLACE OR REFUND FOR PRODUCTS AS THE RESULT OF (i) ACCIDENT, DISASTER OR EVENT OF FORCE MAJEURE, (ii) MISUSE, FAULT OR NEGLIGENCE OF OR BY BUYER, (iii) USE OF THE PRODUCTS IN A MANNER FOR WHICH THEY WERE NOT DESIGNED, OR (iv) IMPROPER STORAGE AND HANDLING OF THE PRODUCTS. Unless otherwise expressly stated on the Product or in the documentation accompanying the Product, the Product is intended for research only and is not to be used for any other purpose, including without limitation, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses, or any type of consumption by or application to human or animals.

PubMed References For OCT4 Monoclonal Antibody (9B7)

6 Immunocytochemistry References

Species / Dilution	Summary
Human / 1:100	<p>MA1-104 was used in Immunocytochemistry to establish two iPSC lines from a patient harbouring a rare homozygous splice site variant in GLP1R for use as a model to study the molecular pathology of GLP1R dysfunction.</p> <p>Stem cell research ( 2020; 50: ) <b>"Generation of iPSC lines (KAUSTi011-A, KAUSTi011-B) from a Saudi patient with epileptic encephalopathy carrying homozygous mutation in the GLP1R gene."</b> Author(s):Alowaysi M,Astro V,Fiacco E,Alzahrani F,Alkuraya FS,Adamo A PubMed Article URL:<a href="http://dx.doi.org/10.1016/j.scr.2020.102148">http://dx.doi.org/10.1016/j.scr.2020.102148</a></p>
Human / 1:50	<p>MA1-104 was used in Flow Cytometry to describe the derivation of multiple 47-XXY iPSC lines from three unrelated KS patients to study the impact of supernumerary X chromosome during early development.</p> <p>Stem cell research ( 2020; 49: ) <b>"Establishment of an iPSC cohort from three unrelated 47-XXY Klinefelter Syndrome patients (KAUSTi007-A, KAUSTi007-B, KAUSTi009-A, KAUSTi009-B, KAUSTi010-A, KAUSTi010-B)."</b> Author(s):Alowaysi M,Fiacco E,Astro V,Adamo A PubMed Article URL:<a href="http://dx.doi.org/10.1016/j.scr.2020.102042">http://dx.doi.org/10.1016/j.scr.2020.102042</a></p>
Human / 1:100	<p>MA1-104 was used in Immunocytochemistry to derived iPSC lines from a high-grade 49-XXXXY Klinefelter Syndrome and two healthy donors' fibroblasts.</p> <p>Stem cell research ( 2020; 49: ) <b>"Establishment of iPSC lines from a high-grade Klinefelter Syndrome patient (49-XXXXY) and two genetically matched healthy relatives (KAUSTi003-A, KAUSTi004-A, KAUSTi004-B, KAUSTi005-A, KAUSTi005-B, KAUSTi005-C)."</b> Author(s):Alowaysi M,Fiacco E,Astro V,Adamo A PubMed Article URL:<a href="http://dx.doi.org/10.1016/j.scr.2020.102008">http://dx.doi.org/10.1016/j.scr.2020.102008</a></p>
Human / 1:100	<p>MA1-104 was used in Immunocytochemistry to generate two iPSC lines 48-XXXXY and 49-XXXXY from a non-mosaic 49-XXXXY KS patient carrying a balanced translocation t(4,11) (q35,q23).</p> <p>Stem cell research ( 2020; 49: ) <b>"Generation of two iPSC lines (KAUSTi001-A, KAUSTi002-A) from a rare high-grade Klinefelter Syndrome patient (49-XXXXY) carrying a balanced translocation t(4,11) (q35,q23)."</b> Author(s):Alowaysi M,Fiacco E,Astro V,Adamo A PubMed Article URL:<a href="http://dx.doi.org/10.1016/j.scr.2020.102098">http://dx.doi.org/10.1016/j.scr.2020.102098</a></p>
Human / 1:500	<p>MA1-104 was used in Immunocytochemistry-immunoflourescence to show that all tested coatings were highly comparable to the animal-derived Matrigel for both hiPSC maintenance and differentiation into renal podocyte-like cells.</p> <p>ALTEX ( 2023; 40: 141) <b>"Comparison of human recombinant protein coatings and fibroblast-ECM to Matrigel for induced pluripotent stem cell culture and renal podocyte differentiation."</b> Author(s):Murphy C,Naderlinger E,Mater A,Kluin RJC,Wilmes A PubMed Article URL:<a href="http://dx.doi.org/10.14573/altex.2112204">http://dx.doi.org/10.14573/altex.2112204</a></p>
Human / Not Cited	<p>MA1-104 was used in Immunocytochemistry to show efficient generation of iPSCs from the elderly may provide a source of cells for the regeneration of tissues and organs with autologous cells as well as cellular models for the study of aging, longevity and age-related diseases.</p> <p>PloS one ( 2020; 14: ) <b>"Applying hydrodynamic pressure to efficiently generate induced pluripotent stem cells via reprogramming of centenarian skin fibroblasts."</b> Author(s):Vosough M,Ravaioli F,Zabulica M,Capri M,Garagnani P,Franceschi C,Piccand J,Kraus MR,Kannisto K, Gramignoli R,Strom SC PubMed Article URL:<a href="http://dx.doi.org/10.1371/journal.pone.0215490">http://dx.doi.org/10.1371/journal.pone.0215490</a></p>

3 Flow Cytometry References

Species / Dilution	Summary
Human / 1:50	<p>MA1-104 was used in Flow Cytometry to describe the derivation of multiple 47-XXY iPSC lines from three unrelated KS patients to study the impact of supernumerary X chromosome during early development.</p> <p>Stem cell research ( 2020; 49: ) <b>"Establishment of an iPSC cohort from three unrelated 47-XXY Klinefelter Syndrome patients (KAUSTi007-A, KAUSTi007-B, KAUSTi009-A, KAUSTi009-B, KAUSTi010-A, KAUSTi010-B)."</b> Author(s):Alowaysi M,Fiacco E,Astro V,Adamo A PubMed Article URL:<a href="http://dx.doi.org/10.1016/j.scr.2020.102042">http://dx.doi.org/10.1016/j.scr.2020.102042</a></p>

For Research Use Only. Not for use in diagnostic procedures. Not for resale without express authorization.

Products are warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Production documentation, specifications and/or accompanying package inserts ("Documentation"). No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the Buyer. Any model or sample furnished to Buyer is merely illustrative of the general type and quality of goods and does not represent that any Product will conform to such model or sample.

NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE GRANTED INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT. BUYER'S EXCLUSIVE REMEDY FOR NON-CONFORMING PRODUCTS DURING THE WARRANTY PERIOD IS LIMITED TO REPAIR, REPLACEMENT OF OR REFUND FOR THE NON-CONFORMING PRODUCT(S) AT SELLER'S SOLE OPTION. THERE IS NO OBLIGATION TO REPAIR, REPLACE OR REFUND FOR PRODUCTS AS THE RESULT OF (i) ACCIDENT, DISASTER OR EVENT OF FORCE MAJEURE, (ii) MISUSE, FAULT OR NEGLIGENCE OF OR BY BUYER, (iii) USE OF THE PRODUCTS IN A MANNER FOR WHICH THEY WERE NOT DESIGNED, OR (iv) IMPROPER STORAGE AND HANDLING OF THE PRODUCTS. Unless otherwise expressly stated on the Product or in the documentation accompanying the Product, the Product is intended for research only and is not to be used for any other purpose, including without limitation, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses, or any type of consumption by or application to human or animals.

	MA1-104 was used in Flow cytometry/Cell sorting to show that using naturally isogenic iPSCs from mosaic Klinefelter Syndrome patients to compare disease and healthy cells carrying a virtually identical genomic background.
Human / 1:200	<p>Stem cell research ( 2020; 49: )</p> <p><b>"Derivation of two naturally isogenic iPSC lines (KAUSTi006-A and KAUSTi006-B) from a mosaic Klinefelter Syndrome patient (47-XXY/46-XY)."</b></p> <p>Author(s):Fiacco E,Alowaysi M,Astro V,Adamo A</p> <p>PubMed Article URL:<a href="http://dx.doi.org/10.1016/j.scr.2020.102049">http://dx.doi.org/10.1016/j.scr.2020.102049</a></p>
Human / Not Cited	<p>MA1-104 was used in Flow cytometry/Cell sorting to prove the existence of a divergent scaffolding role of KDM1A splice variants, independent of their enzymatic activity, during hESC differentiation into cardiac cells.</p> <p>iScience ( 2022; 25: )</p> <p><b>"Fine-tuned KDM1A alternative splicing regulates human cardiomyogenesis through an enzymatic-independent mechanism."</b></p> <p>Author(s):Astro V,Ramirez-Calderon G,Pennucci R,Caroli J,Saera-Vila A,Cardona-Londoño K,Forastieri C,Fiacco E,Maksoud F,Alowaysi M,Sogne E,Falqui A,González F,Montserrat N,Battaglioli E,Mattevi A,Adamo A</p> <p>PubMed Article URL:<a href="http://dx.doi.org/10.1016/j.isci.2022.104665">http://dx.doi.org/10.1016/j.isci.2022.104665</a></p>

For Research Use Only. Not for use in diagnostic procedures. Not for resale without express authorization.

Products are warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Production documentation, specifications and/or accompanying package inserts ("Documentation"). No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the Buyer. Any model or sample furnished to Buyer is merely illustrative of the general type and quality of goods and does not represent that any Product will conform to such model or sample.

NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE GRANTED INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT. BUYER'S EXCLUSIVE REMEDY FOR NON-CONFORMING PRODUCTS DURING THE WARRANTY PERIOD IS LIMITED TO REPAIR, REPLACEMENT OF OR REFUND FOR THE NON-CONFORMING PRODUCT(S) AT SELLER'S SOLE OPTION. THERE IS NO OBLIGATION TO REPAIR, REPLACE OR REFUND FOR PRODUCTS AS THE RESULT OF (i) ACCIDENT, DISASTER OR EVENT OF FORCE MAJEURE, (ii) MISUSE, FAULT OR NEGLIGENCE OF OR BY BUYER, (iii) USE OF THE PRODUCTS IN A MANNER FOR WHICH THEY WERE NOT DESIGNED, OR (iv) IMPROPER STORAGE AND HANDLING OF THE PRODUCTS. Unless otherwise expressly stated on the Product or in the documentation accompanying the Product, the Product is intended for research only and is not to be used for any other purpose, including without limitation, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses, or any type of consumption by or application to human or animals.