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SZABO
SCANDIC

Part of Europa Biosite

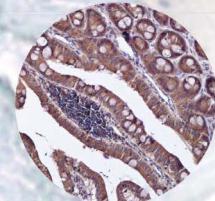
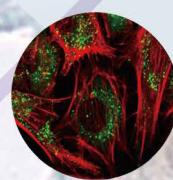
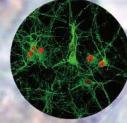
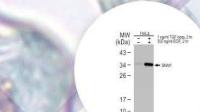


WORLD CLASS VALIDATED ANTIBODIES



Five Pillars of Ab Validation

- Knockout / Knockdown
- Comparable Antibodies
- IP/MS Analysis
- Biological and Orthogonal Characteristics
- Protein Overexpression





Five Pillars of Antibody Validation



K KO/KD Validation Knockout/Knockdown

Complete or significant reduction of signal following genome editing or RNA interference of target protein.

A Comparable Abs Comparable Antibodies

Correlation between two antibodies against the same target with different epitopes across several samples, preferentially with different expression levels of the target protein.

M IP/MS Analysis IP/MS Analysis

Mass spec analysis of target protein peptide sequences from samples immunoprecipitated by antibody from lysates.

O Orthogonal Validation Biological and Orthogonal Characteristics

Change of antibody signal in accordance with defined biological characteristics of target protein following specific sample preparation parameters, including drug treatments, hypoxia conditions, or subcellular fractionation. Also, analysis of signals from various cell lines that either do or do not express the target in the context of protein or mRNA levels.

P Protein Overexpression Protein Overexpression

To confirm the endogenous signals detected by the antibody are the target protein, transfected cells with cDNA encoding the target protein are used as a positive control and independently validated by western blot.

- **References:** *Nat Methods.* 2016 Oct;13(10):823-7.

GeneTex's Approach to Antibody Lot-to-Lot Variability



Lot-to-lot variability is a persistent quality control (QC) issue that contributes to inconsistent results in assays using antibodies. This is most pronounced when experiments require significant amounts of antibody so that multiple vials are needed, sometimes over extended periods of time. Subsequent discrepancies in the data between different trials lead to difficulties in interpretation and questionable scientific conclusions.

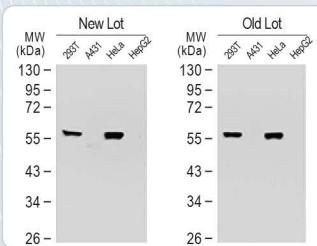


High Standard Manufacturing

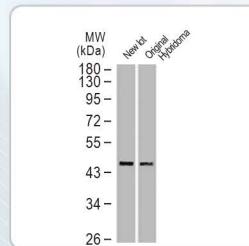
Polyclonal antibodies are commonly associated with lot variability related to distinct immune responses following different immunizations or even altered conditions during affinity purification from the same batch of serum. There are generally fewer concerns with monoclonal antibodies, though hybridoma instability is a constant threat to lot consistency.

GeneTex strives to provide highly reliable antibodies through not only our “Five-Pillar” approach, but also through stringent side-by-side testing to ensure lot-to-lot performance. This validation protocol is fully incorporated into GeneTex’s QC standards for both polyclonal and monoclonal antibody development. Please see examples below.

Polyclonal



Monoclonal



Side-by-side Testing

1. Ensure consistent MW size
2. Ensure consistent sensitivity
3. Ensure consistent specificity
4. Compare to the original hybridoma antibody prep for monoclonal antibodies

Loading Controls



MW (kDa)	Cytosol	Nucleus	Cytoskeleton	Mitochondria
>120 kDa			Vinculin (124 kDa)	
70-80 kDa				SDHA (73 kDa)
60-70 kDa		Lamin B1 (66 kDa)		
50-60 kDa			Alpha Tubulin (55 kDa)	HSP60 (60 kDa)
40-50 kDa			Beta Tubulin (50 kDa) beta Actin (42 kDa)	
30-40 kDa	GAPDH (36 kDa)	TBP/TFIID (38 kDa)		COX4 (20 kDa)
20-30 kDa		PCNA (29 kDa)	Cofilin (20 kDa)	
<20 kDa	Cyclophilin A (18 kDa)	Histone H3 (15 kDa)		Cytochrome C (12 kDa)

Western HRP Substrates



Citation Support

Product name	Trident femto Western HRP Substrate		Trident pico Western HRP Substrate		Trident plus Western HRP Substrate
Cat.No.	GTX14698		GTX17435		GTX400006
Sensitivity	femtogram(10^{-15} g)		picogram(10^{-12} g)		picogram(10^{-10} ~ 10^{-12} g)
Package	100ml	200ml	100ml	500ml	500ml

WB analysis using Trident femto Western HRP Substrate (GTX14698), Trident pico Western HRP Substrate (GTX17435) and Trident plus Western HRP Substrate (GTX400006) with various sample amounts and exposure times as indicated.

SuperSignal™ West Femto, Clarity™, and Luminata™ Forte are registered trademarks of Thermo Fisher Scientific, Bio-Rad, and EMD Millipore, respectively. The trademark holders are not affiliated with GeneTex and do not endorse

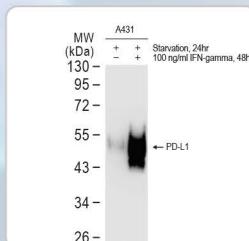
Cancer Research



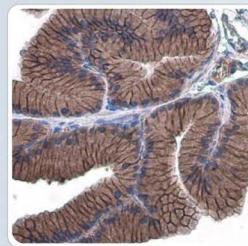
C Citation Support
A Comparable Abs

K KO/KD Validation
P Protein Overexpression

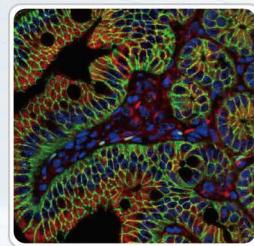
O Orthogonal Validation



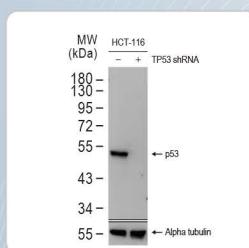
PD-L1 antibody (GTx104763)



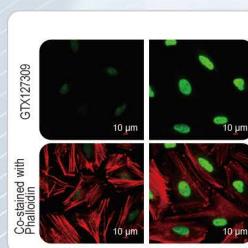
E-Cadherin antibody (GTx100443)



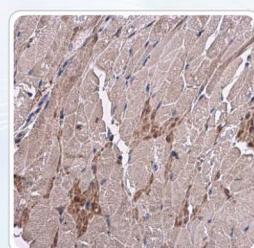
beta Catenin antibody (GTx101435)



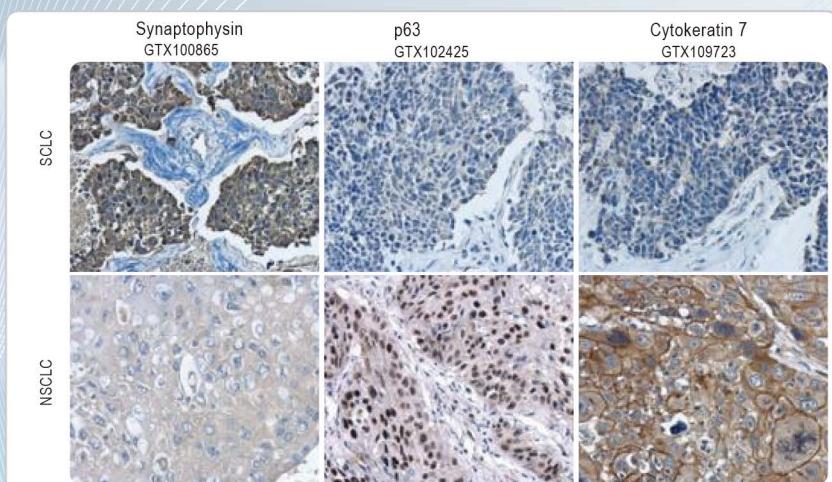
p53 antibody [DO1] (GTx70214)



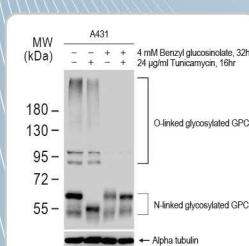
HIF1 alpha antibody (GTx127309)



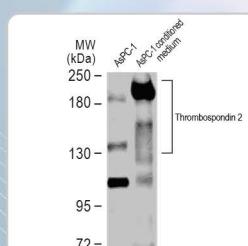
VEGF antibody (GTx102643)



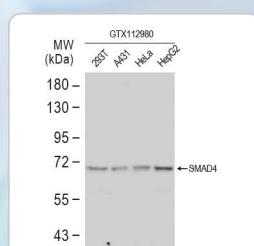
Synaptophysin antibody (GTx100865)
p63 antibody (GTx102425)
Cytokeratin 7 antibody (GTx109723)



Glycan 1 antibody [N3C3] (GTx104557)



Thrombospondin 2 antibody (GTx134554)

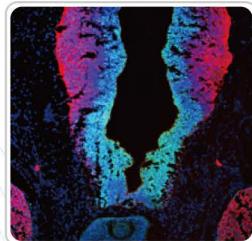


SMAD4 antibody (GTx112980)

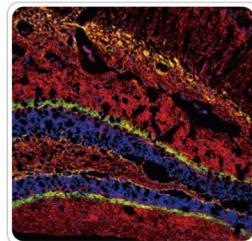
Neuroscience



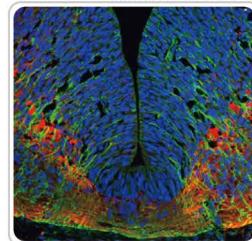
C Citation Support K KO/KD Validation A Comparable Abs
P Protein Overexpression



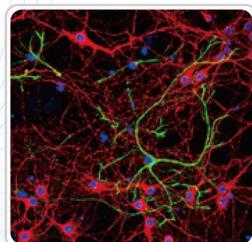
SOX2 antibody
(GTx101507) CKA



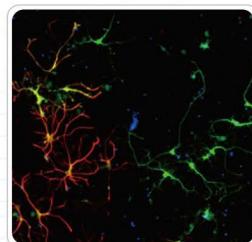
Calretinin antibody
(GTx103261) CPA



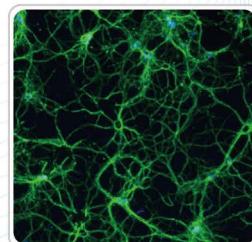
EFHD2 antibody
(GTx108080) P



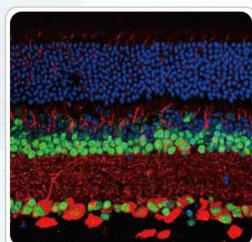
GFAP antibody
(GTx108711) CP



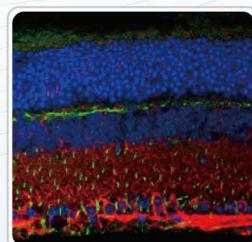
Glutamine synthetase
antibody [GT7711]
(GTx630657) KPA



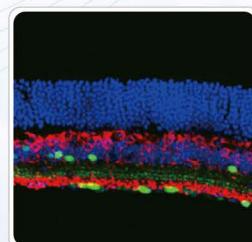
Tuj1 antibody [GT11710]
(GTx631836) CKA



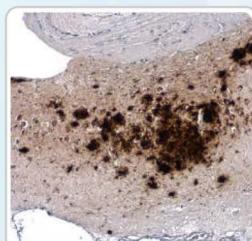
PAX6 antibody
(GTx113241) CP



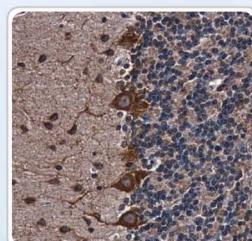
Vimentin antibody
(GTx112661) CKA



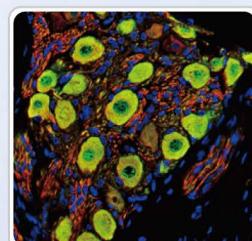
Choline Acetyltransferase
antibody [N1N3]
(GTx113164) P



beta Amyloid (1-42) antibody
Conformation Specific
(GTx134510) A



GAD67 antibody
(GTx101881) CPA



PGP9.5 antibody
(GTx109637) CKA

Cardiovascular Research

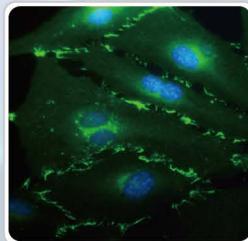


C Citation Support

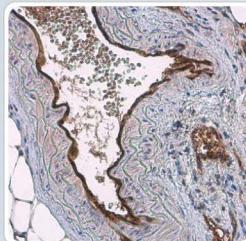
K KO/KD Validation

A Comparable Abs

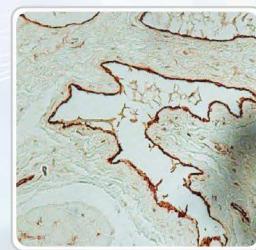
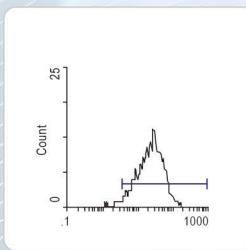
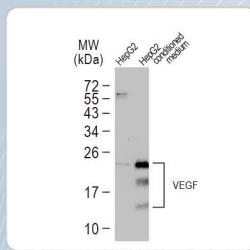
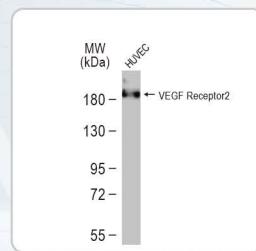
O Orthogonal Validation



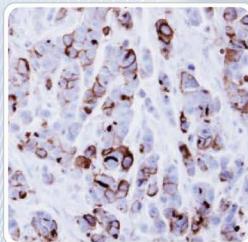
VE-Cadherin antibody
[GTX13691] (GTX633705) C



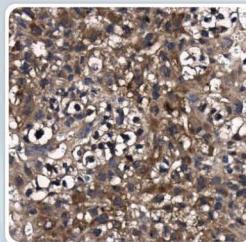
CD31 antibody
[GTX130274] C A



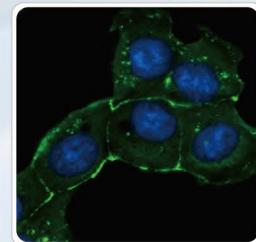
VWF antibody (GTX26994)
C



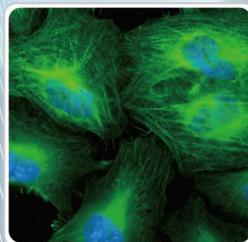
ICAM1 / CD54 antibody
[N1C2] (GTX100450) C



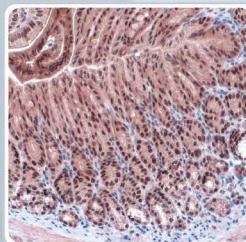
TIE2 antibody [C1C3]
[GTX107838]



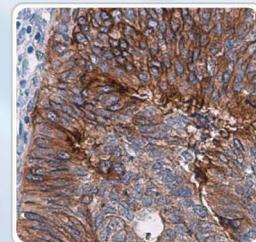
ZO-1 antibody [N1N2],
N-term (GTX108613) C K



alpha Smooth Muscle Actin
antibody [GT445]
[GTX629702] C K



GATA4 antibody
[GTX113194] C O



Coagulation factor III/Tissue
Factor antibody [N1C3]
[GTX100808] C

Cell Biology



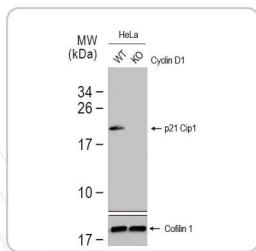
C Citation Support

K KO/KD Validation

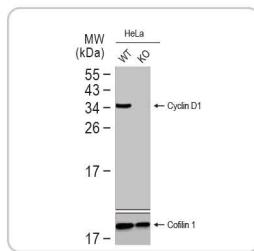
O Orthogonal Validation

M IP/MS Analysis

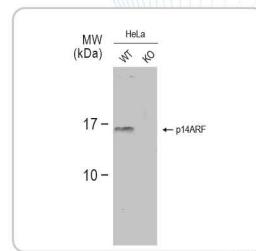
P Protein Overexpression



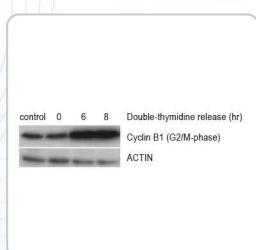
p21 Cip1 antibody [GT1032]
(GTX629543)



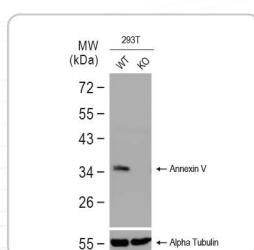
Cyclin D1 antibody
(GTX108624)



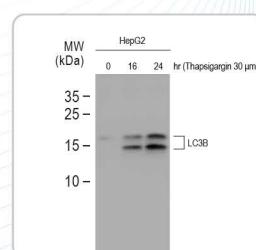
CDKN2A / p14ARF antibody
(GTX129902)



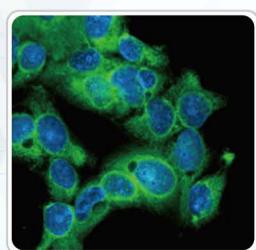
Cyclin B1 antibody
(GTX100911)



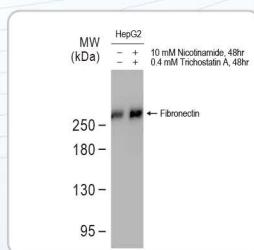
Annexin V antibody
(GTX103250)



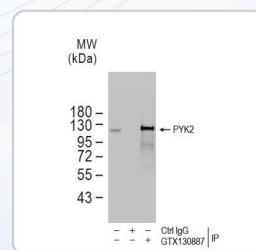
LC3B antibody
(GTX127375)



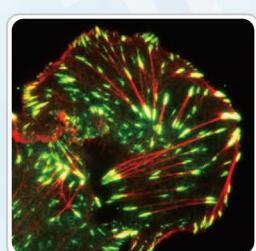
CDC2 antibody
(GTX108120)



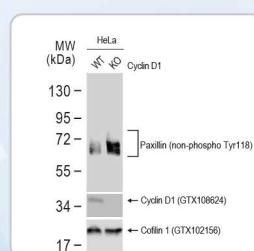
Fibronectin antibody
(GTX112794)



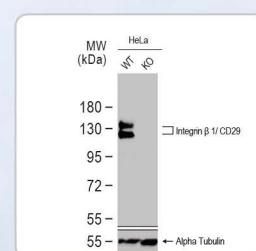
PYK2 antibody
(GTX130887)



Paxillin antibody
(GTX125891)



Paxillin (non-phospho
Tyr18) antibody [GT722]
(GTX633707)



Integrin β 1 / CD29 antibody
(GTX128839)

Metabolism



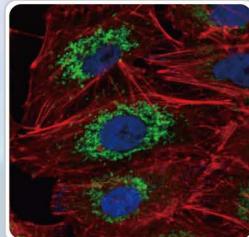
C Citation Support

K KO/KD Validation

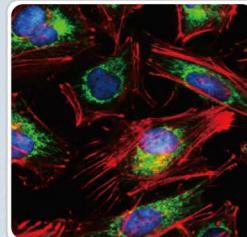
O Orthogonal Validation

A Comparable Abs

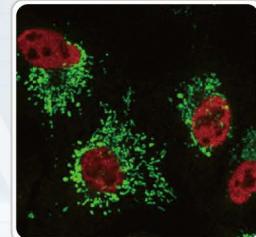
P Protein Overexpression



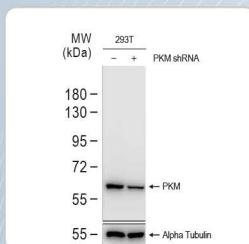
ALDH2 antibody
(GTx101429)



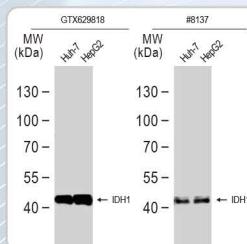
Citrate synthetase antibody
[GT1761] (GTx628143)



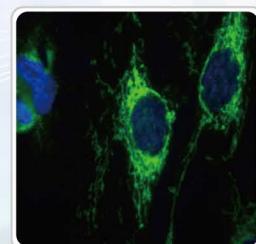
Glutaminase C antibody
(GTx131263)



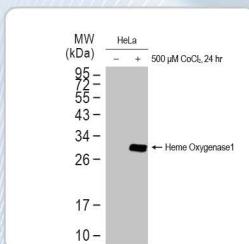
PKM antibody
(GTx107977)



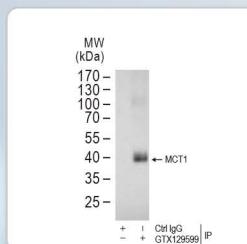
IDH1 antibody [GT1521]
(GTx629818)



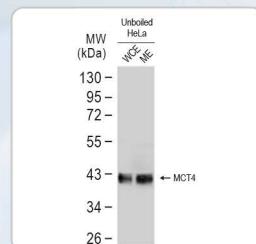
IDH2 antibody [GT673]
(GTx628487)



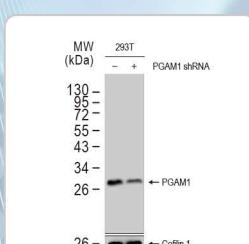
Heme Oxygenase 1 antibody
(GTx101147)



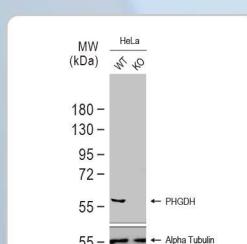
MCT1 antibody
(GTx129599)



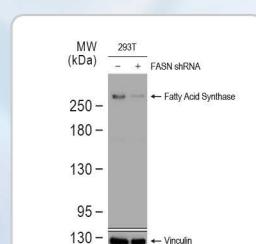
MCT4 antibody
(GTx131626)



PGAM1 antibody [GT256]
(GTx629745)



PHGDH antibody [N1N2]
N-term (GTx101948)



Fatty Acid Synthase
antibody [GT556]
(GTx629762)

Epigenetics

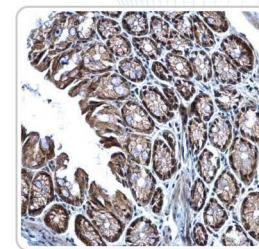
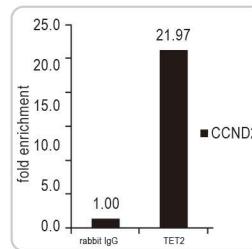
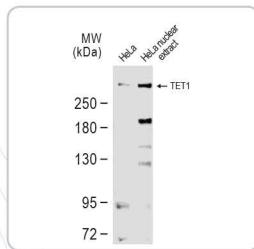


C Citation Support

K KO/KD Validation

O Orthogonal Validation

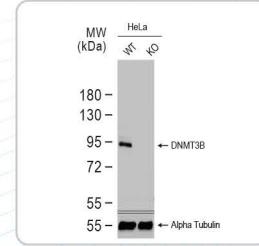
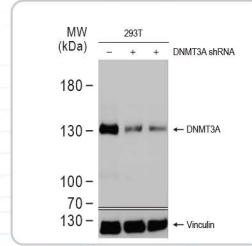
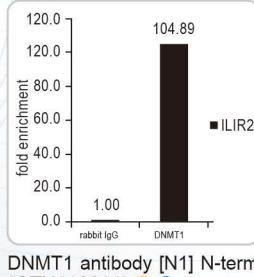
P Protein Overexpression



DNMT1 antibody [N1] N-term (GTx116011)

DNMT3A antibody (GTx129125)

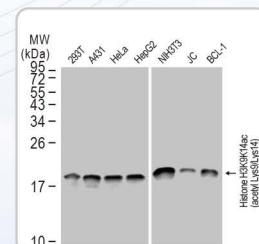
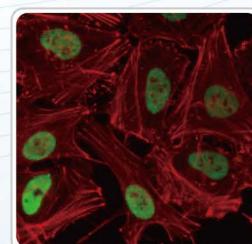
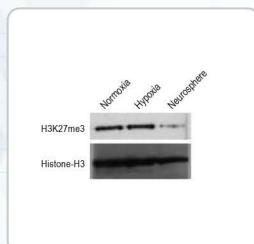
DNMT3B antibody (GTx129127)



Histone H3K27me3 antibody (GTx121184)

Histone H3K9ac antibody (GTx630554)

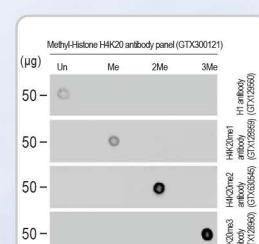
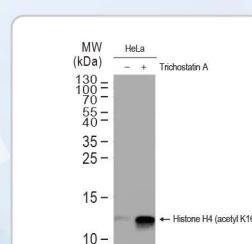
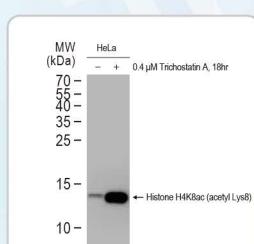
Histone H3K9K14ac antibody (GTx122648)



Histone H4K8ac antibody (GTx633420)

Histone H4K16ac antibody (GTx632067)

Histone H4K20me2 antibody [GT1851] (GTx630545)



Cell Markers



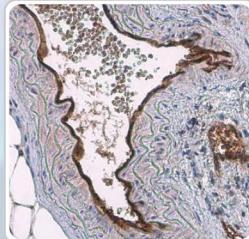
C Citation Support

K KO/KD Validation

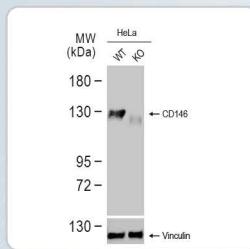
O Orthogonal Validation

A Comparable Abs

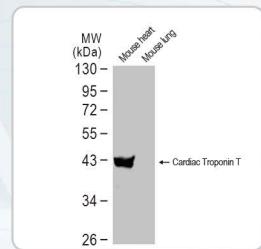
P Protein Overexpression



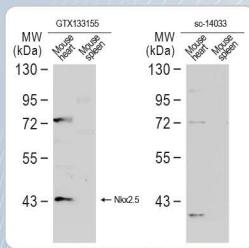
CD31 antibody (GTx130274)



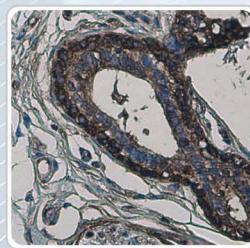
CD146 antibody [C1C3] (GTx108777)



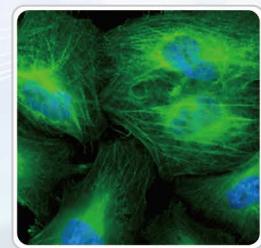
Cardiac Troponin T antibody (GTx134489)



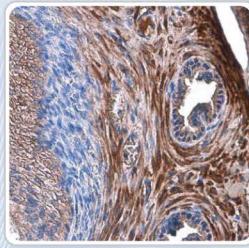
Nkx2.5 antibody (GTx133155)



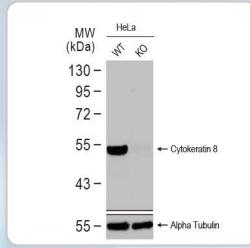
MYH9 antibody [GT566] (GTx633960)



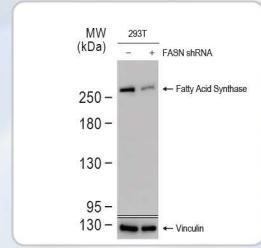
alpha Smooth Muscle Actin antibody [GT445] (GTx629702)



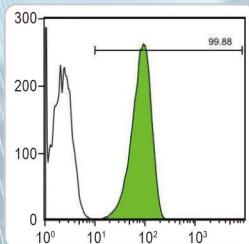
Transgelin antibody [GT4511] (GTx629078)



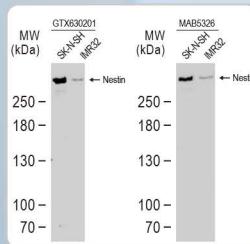
Cytokeratin 8 antibody [N1C1] (GTx112975)



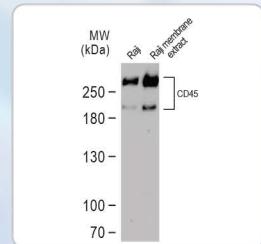
Fatty Acid Synthase antibody [N1], N-term (GTx109833)



Oct4 antibody [GT486] (GTx627419)



Nestin antibody [GT623] (GTx630201)



CD45 antibody [GT0014] (GTx628507)

Signaling Pathway



Citation Support

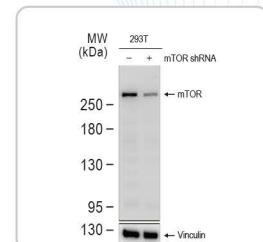
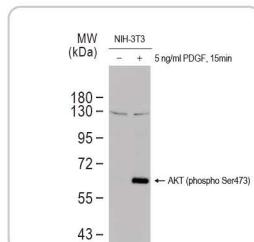
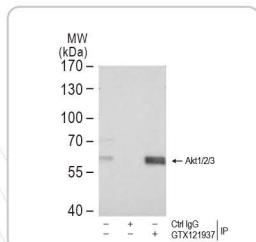
KO/KD Validation

Orthogonal Validation

Comparable Abs

Protein Overexpression

IP/MS Analysis



PARP antibody [N2C1] Internal (GTX112864)

Raptor antibody (GTX132989)

YAP1 antibody (GTX129151)

CBP antibody [C3], C-term (GTX101249)

ASCL1 antibody (GTX129189)

XIAP antibody [N1C1] (GTX113130)

p53 (pSer15) antibody (GTX132995)

4E-BP1 antibody [N1C3] (GTX109162)

14-3-3 antibody (GTX133736)

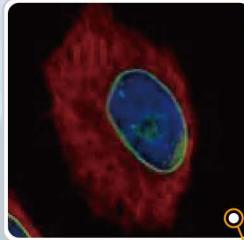
Organelle Markers



C Citation Support

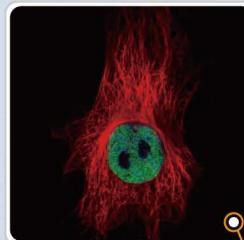
K KO/KD Validation

Nuclear Envelope



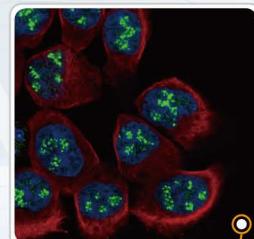
Lamin A/C antibody
(GTX101127) C K

Nucleus



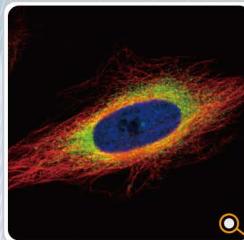
HDAC2 antibody
(GTX109642) C K

Nucleolus



PAF49 antibody
(GTX102175)

Endoplasmic Reticulum

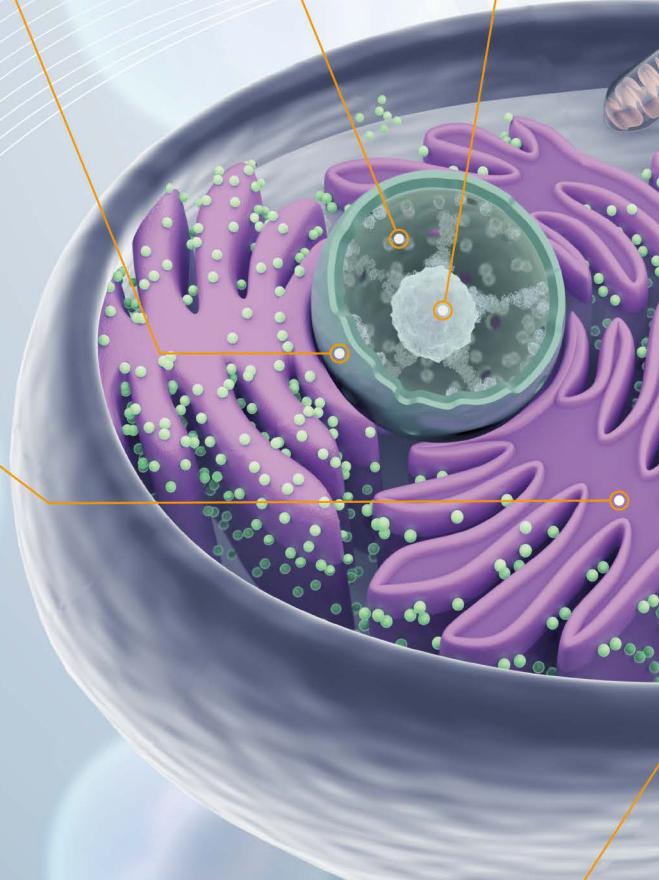


GRP94 antibody (GTX103232) C K

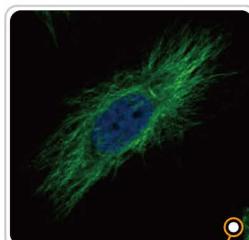
Actin



beta Actin antibody
(GTX100315) C



Microtubules



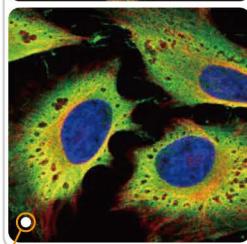
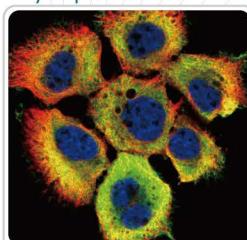
alpha Tubulin antibody
(GTx102078)

Endosome



EEA1 antibody [C3], C-term
(GTx109638)

Cytoplasm



HSP70 1A antibody
(GTx111088)
GAPDH antibody
(GTx100118)

Golgi Apparatus



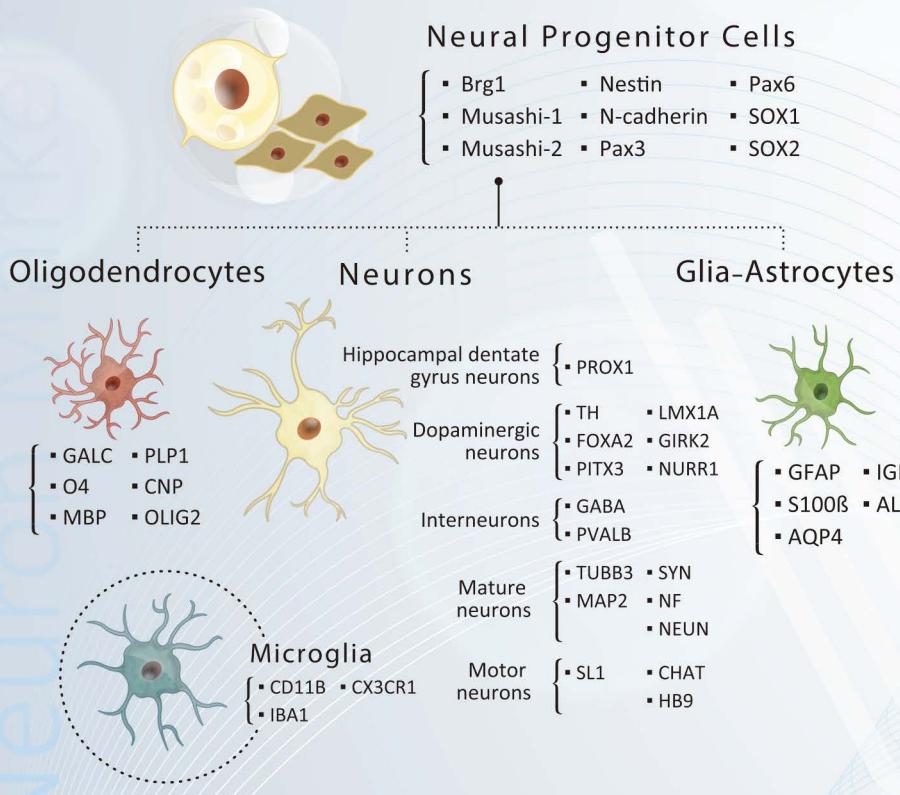
GOLGA5 antibody [N2C2],
Internal (GTx104255)

Mitochondria

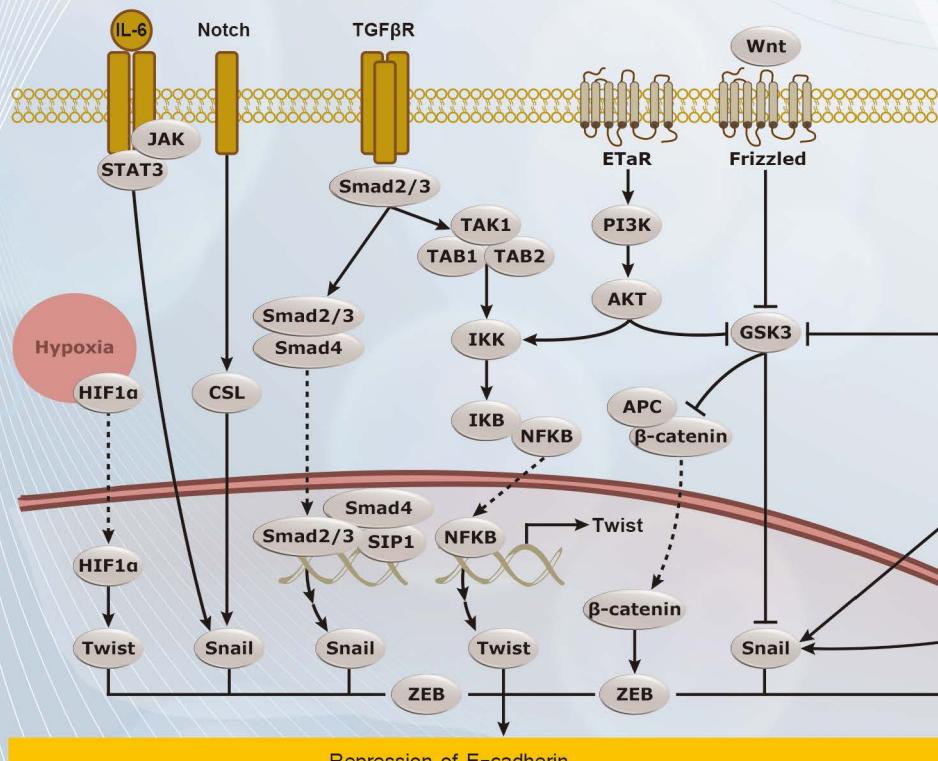


COX4 antibody (GTx101499)

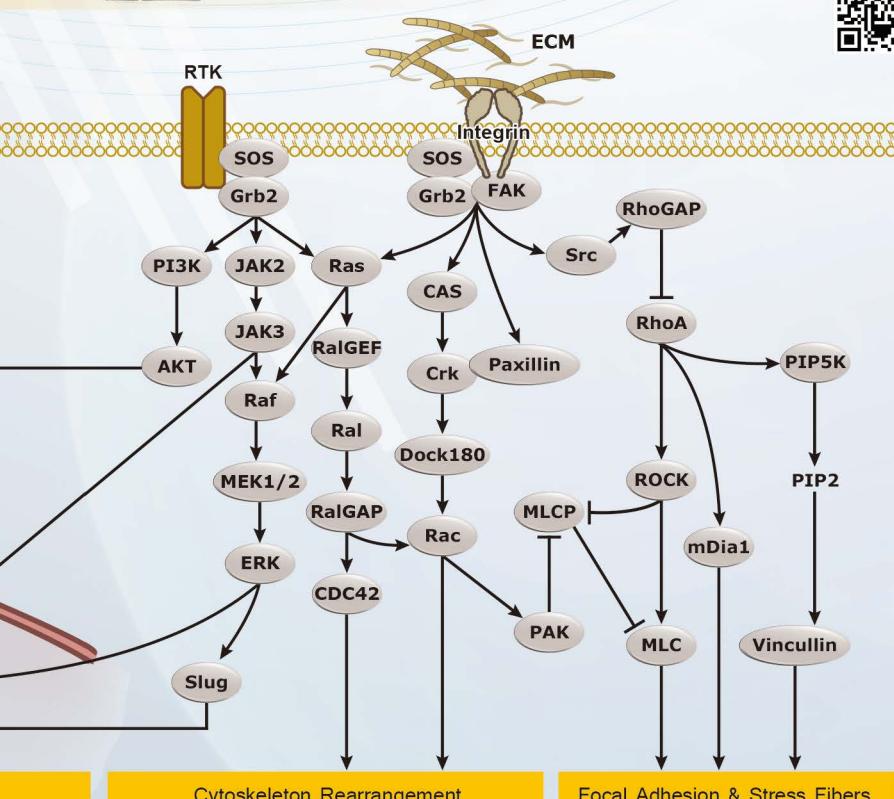
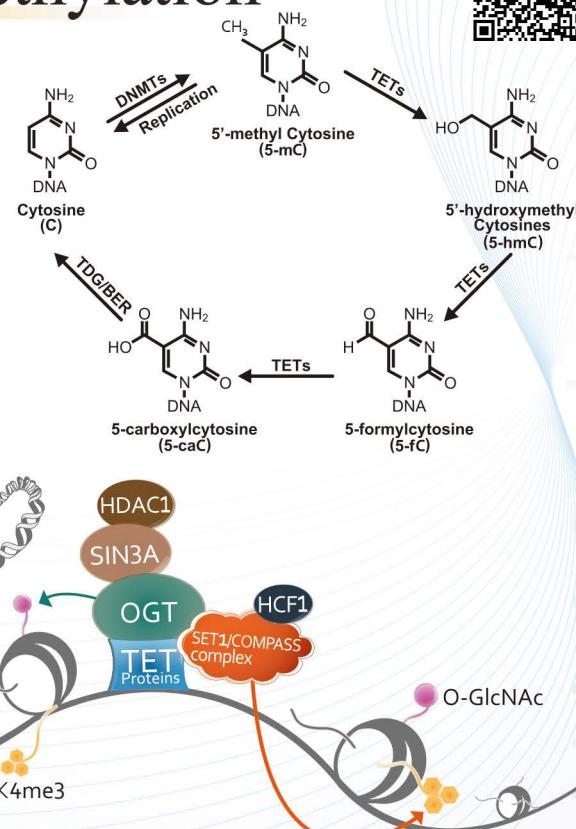
CNS Cell Markers



Epithelial-Mesenchymal Transition



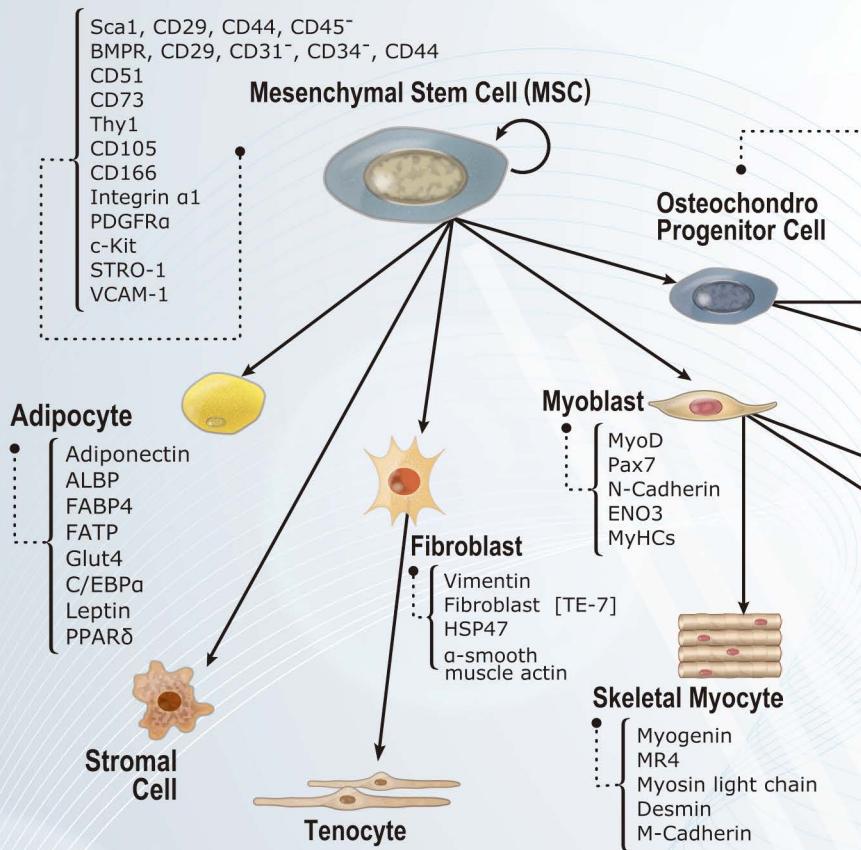
DNA Methylation



Cytoskeleton Rearrangement

Focal Adhesion & Stress Fibers

Stem Cell Research



Histone Modifications

M Methylation
Methyltransferases
Demethylases

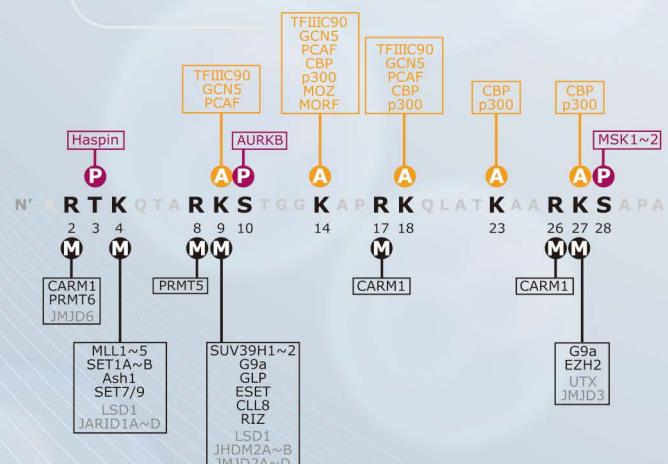
A Acetylation
Histone
Acetyltransferases

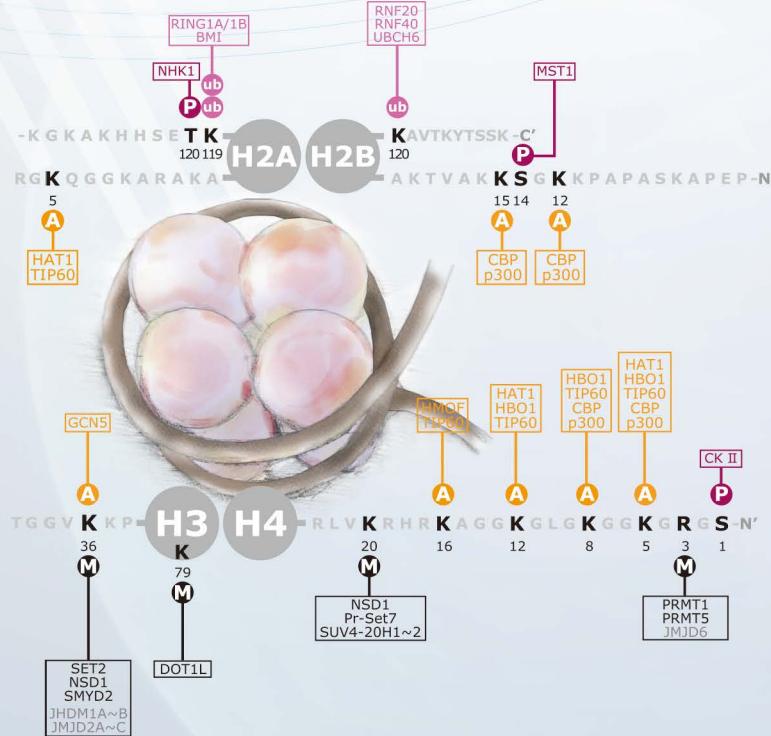
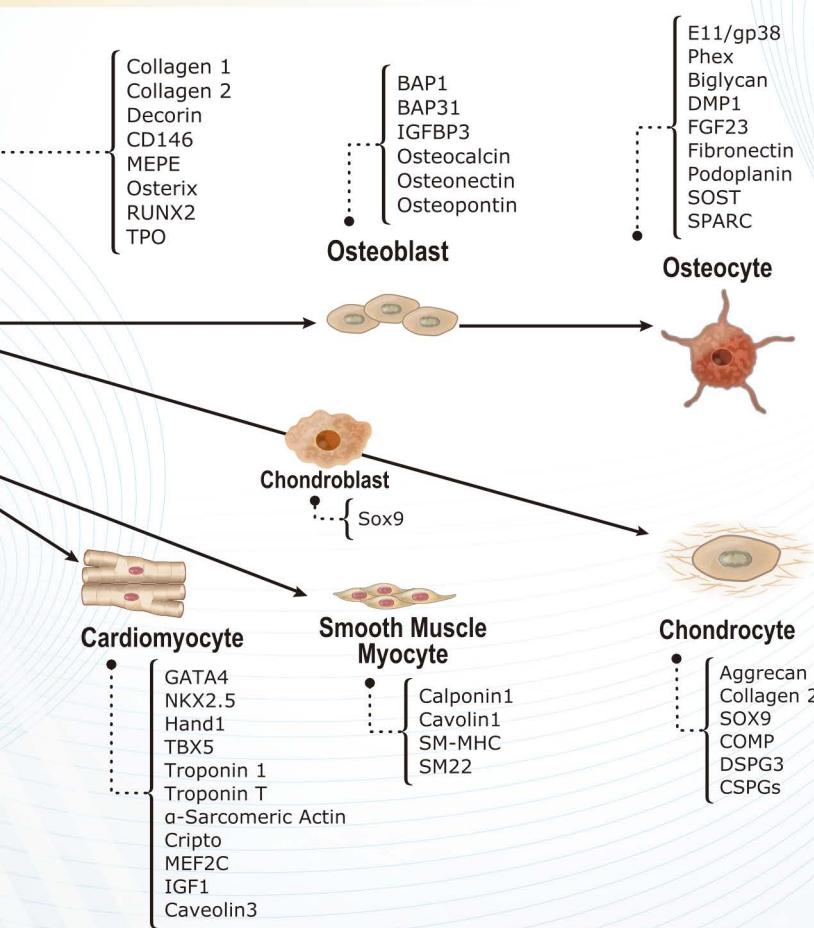
P Phosphorylation
Kinases

ub Ubiquitination
Ubiquitin Ligases

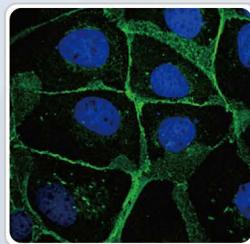
N' N terminus

C' C terminus

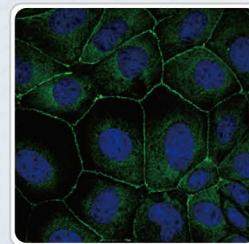




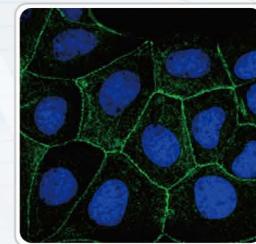
VetSignalTM Antibodies for Veterinary Research



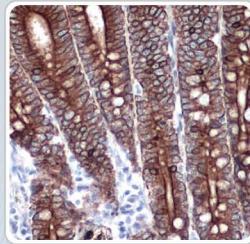
beta Catenin antibody -
VetSignalTM (GTX34941)



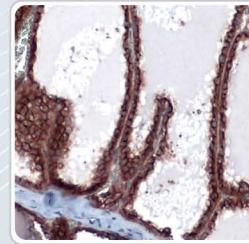
ZO-1 antibody - VetSignalTM
(GTX135089)



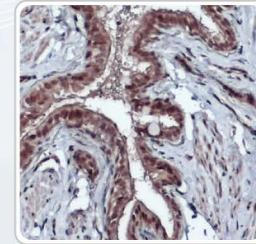
Home Integrin beta 1 / CD29
antibody - VetSignalTM
(GTX135099)



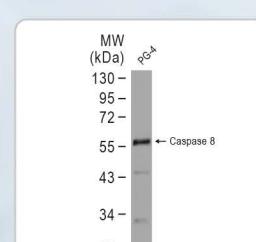
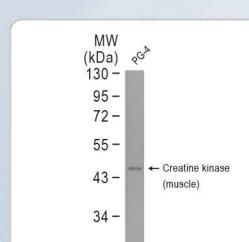
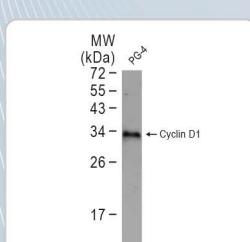
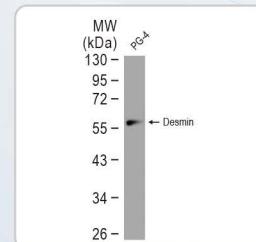
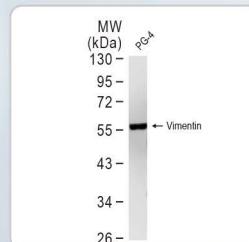
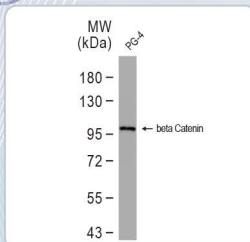
Cytokeratin 18 antibody -
VetSignalTM (GTX134973)



Cytokeratin 19 antibody -
VetSignalTM (GTX134976)



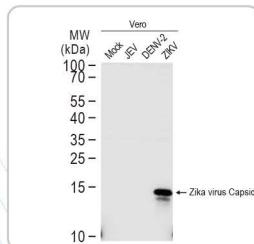
Bmi1 antibody - VetSignalTM
(GTX134944)



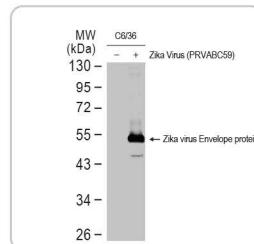
Infectious Diseases



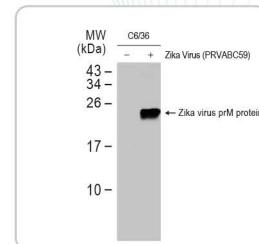
C Citation Support



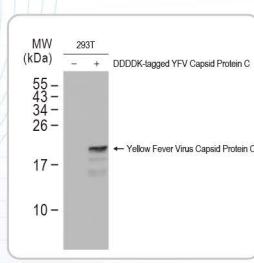
Zika virus Capsid protein antibody (GTx133317) **C**



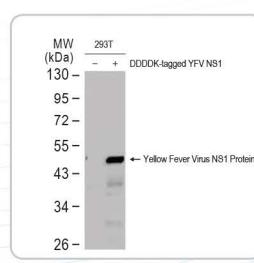
Zika virus Envelope protein antibody (GTx133314) **C**



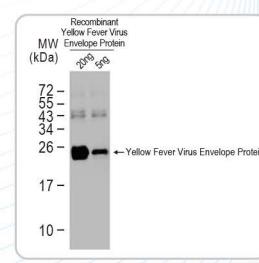
Zika virus prM protein antibody (GTx133305) **C**



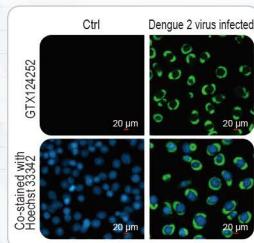
Yellow Fever Virus Capsid Protein C antibody (GTx134022)



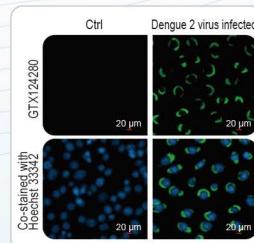
Yellow Fever Virus NS1 Protein antibody (GTx134025)



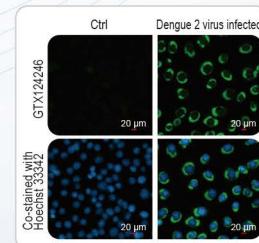
Yellow Fever Virus Envelope Protein antibody (GTx134024)



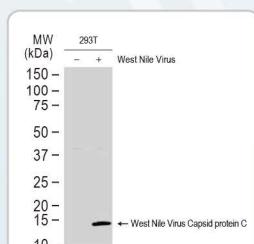
Dengue virus NS3 protein antibody (GTx124252)



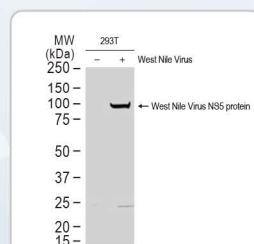
Dengue virus NS1 protein antibody (GTx124280) **C**



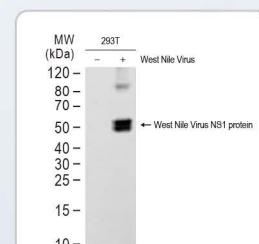
Dengue virus NS2B protein antibody (GTx124246) **C**



West Nile virus Capsid protein C antibody (GTx131947)



West Nile virus NS5 protein antibody (GTx131961)



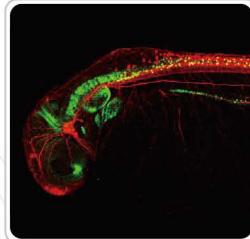
West Nile virus NS1 protein antibody (GTx132053)

Zebrafish



C Citation Support

O Orthogonal Validation



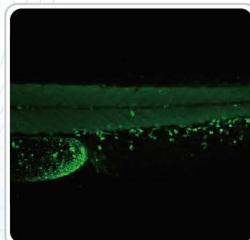
Pax2a antibody
(GTx128127) C



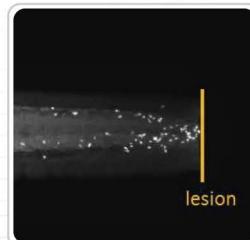
HuC/D antibody
(GTx128365) C



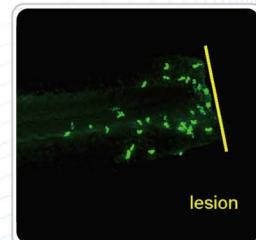
Gfap antibody
(GTx128741) C



Lcp1 antibody
(GTx124420) C



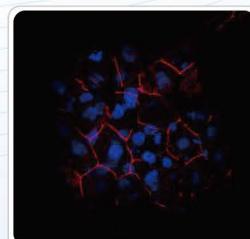
Mpx antibody
(GTx128379) C



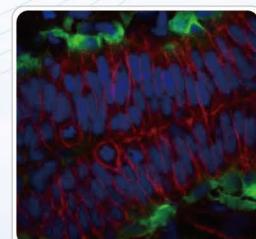
Lyz antibody (GTx132379)



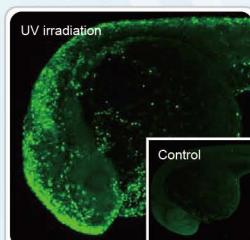
Sox2 antibody
(GTx124477) C



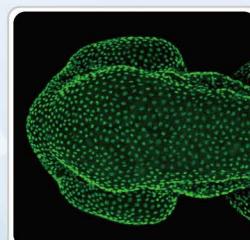
Cdh1 antibody
(GTx125890) C



Cdh2 antibody
(GTx125885) C



UV irradiation
Histone H2A.XS139ph
(pSer139) antibody
(GTx127342) C O



Tp63 antibody
(GTx124660) C



PcnA antibody
(GTx124496) C

About GeneTex

Established in 1997 by a group of renowned scientists, GeneTex's corporate mission remains clear:

" We strive to serve and accelerate life science research by creating essential biomedical reagents where quality can be found in every vial."

Our commitment, to provide our customers with dependable reagents and to drive life science research, reflects the philosophy and approach we employ when we manufacture our products. Through extensive study, development, and stringent testing, we have produced and validated a comprehensive collection of antibodies and research tools that researchers use every day to expand the limits of biomedical knowledge.

Our technical support team and sales channel are more than happy to help you with all aspects of issues regarding our products and service. Support in multiple languages is accessible through our worldwide distributor network. Feel free to contact us if you have any questions!

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