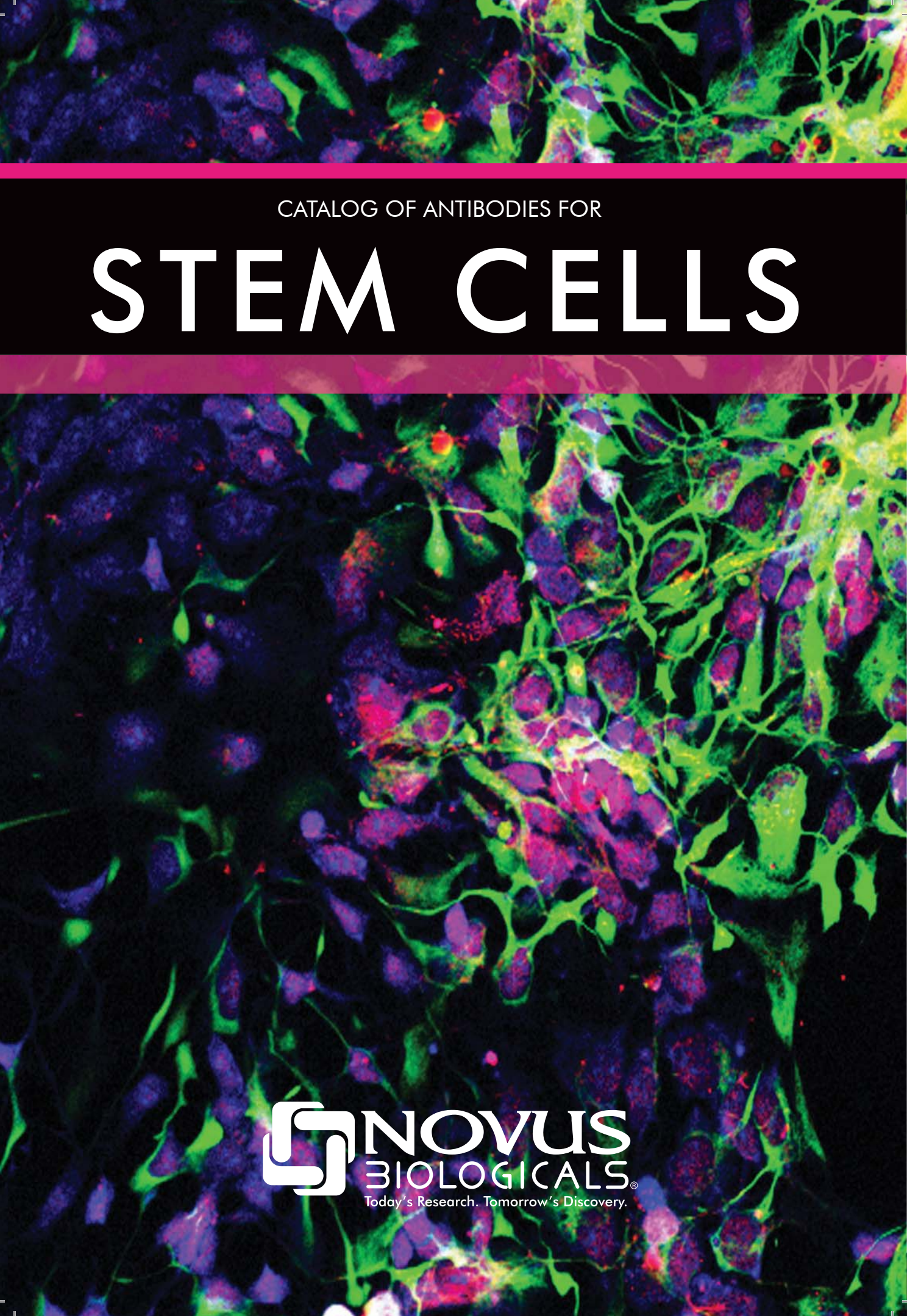


CATALOG OF ANTIBODIES FOR

STEM CELLS

NOVUS BIOLOGICALS®

Today's Research. Tomorrow's Discovery.

Table of Contents

Application Key

ELISA - Enzyeme-linked Immunosorbent Assay

FACS - Fluorescent Activated Cell Sorting

Func - Functional Assay

ICC - Immunocytochemistry

IF - Immunofluorescence

IHC - Immunohistochemistry

IHC-Fr - Immunohistochemistry Frozen

IHC-P - Immunohistochemistry Paraffin

IP - Immunoprecipitation

RI - Radioimmunodiffusion

WB - Western Blot

Reactivity Key

Bb - Baboon
Bv - Bovine
Ca - Canine
Ce - C. Elegans
Ch - Chicken
Eq - Equine
Fe - Feline
Gp - Guinea Pig
Ha - Hamster
Hu - Human
Ma - Mammal
Mk - Monkey
Mu - Mouse
Po - Porcine
Rb - Rabbit
Rt - Rat
Sh - Sheep
Xp - Xenopus
Ze - Zebra Fish

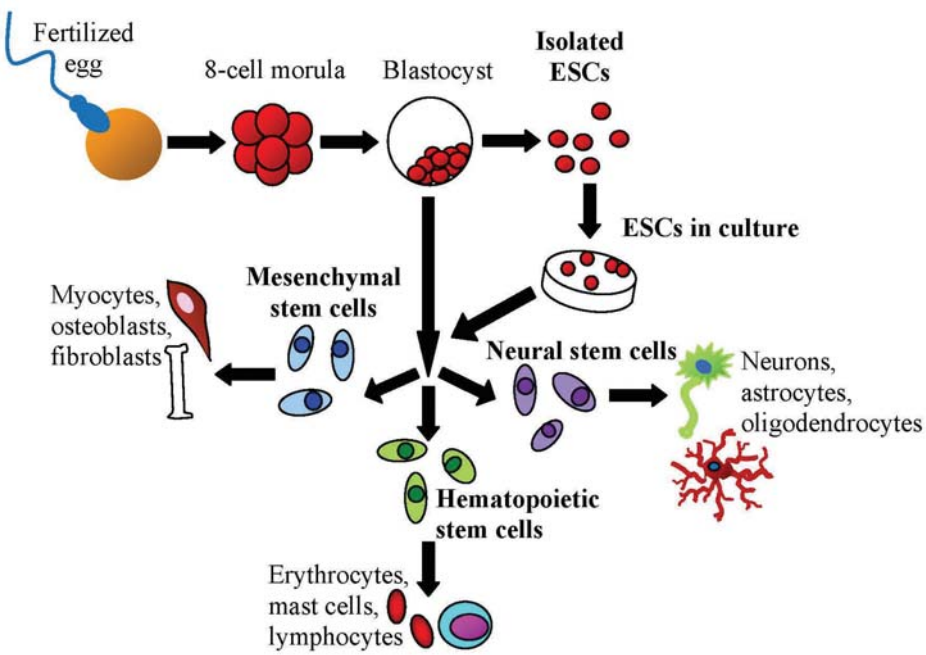
Cover Image: Motor neuron progenitors (green) derived from human embryonic stem cells. This photo was taken by Sharyn Rossi in the lab of Hans Keirstead at the University of California, Irvine.

Stem Cells

Stem cells are distinguished from other cell types by their ability to both self-renew and to differentiate into a diverse array of specialized cell types. Naturally occurring stem cells are divided into two categories: embryonic stem cells isolated from the inner cell mass of blastocysts and somatic stem cells found in adult tissues. While embryonic stem cells are able to differentiate into all cell types of the body, adult stem cells are only able to differentiate into the various cell types of the tissue from which they are derived. Stem cell populations can also be 'created' through genetic manipulation. Adult cells can be genetically reprogrammed to an embryonic stem cell-like state through the forced expression of four key genes: OCT4, SOX2, NANOG and LIN28. These reprogrammed cells are known as induced pluripotent stem cells (iPSCs). Unfortunately, the viral transfection techniques traditionally used to generate iPSCs have the potential to trigger oncogene expression, thus making them fairly risky for therapeutic treatment.

The presence of stem cells is not restricted to healthy tissue. Both tumors and hematological cancers have been shown to contain small populations of stem cells that play a critical role in the development and progression of the disease. Thus far, cancer stem cells (CSCs) have been identified in leukemia, myeloma, breast, prostate, pancreas, colon, brain and lung cancers. CSCs may be largely responsible for driving the metastatic spread of cancer. The resistance of CSCs to many conventional therapies explains why the disease is often difficult to fully eradicate.

Stem cells are widely regarded to have implications for the treatment of a wide range of human diseases. Specifically, control of stem cell differentiation would allow scientists to generate renewable pools of replacement cells and tissues that could be used to treat an array of degenerative diseases and injuries including: Alzheimer's disease, Parkinson's disease, spinal cord injury, stroke, heart disease, diabetes, and arthritis. Thus far, hematopoietic stem cells are the only type of stem cells that have been effectively used in therapy. Human stem cells could also have useful applications for drug testing; new medications could be tested on differentiated cells derived from stem cell lines.



New Product Line

Novus is proud to offer the world's first biorisk-free growth factors and cytokines specifically designed to advance the fields of stem cell research, regenerative medicine, cancer research, immunology and hematology. Unlike other commercially available growth factors and cytokines, NovActive™ proteins are produced in eukaryotic barley grain, making them culture-ready and as close to naturally produced proteins as possible.

Features of Biorisk-Free Products:

- Serum-free
- Endotoxin-free
- Antibiotic-free
- Low in proteolytic activity
- No human or animal infectious agents

The Eukaryotic Host Advantage:

- Native protein folding
- Eukaryotic post-translational modifications
- Cell culture readiness
- Low cost – NovActive™ proteins are available at a fraction of the cost of comparable proteins now on the market

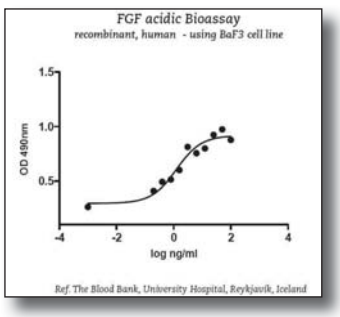


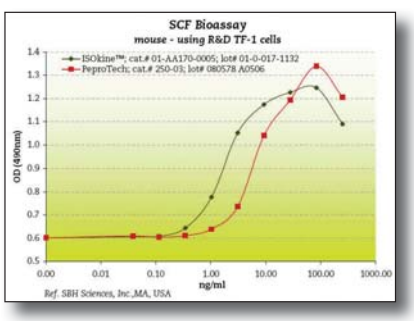


NovActive™ proteins are currently being tested in over 50 research laboratories. Join the revolution and realize the eukaryotic host advantage!

bFGF, recombinant, human
Catalog Number: NBC1-21335

Fibroblast growth factor basic (bFGF) is a heparin binding growth factor expressed in a wide array of tissues including brain, kidney, bone, adrenal gland and liver. bFGF maintains ESCs in the undifferentiated state in culture and promotes cellular proliferation and differentiation *in vivo*.



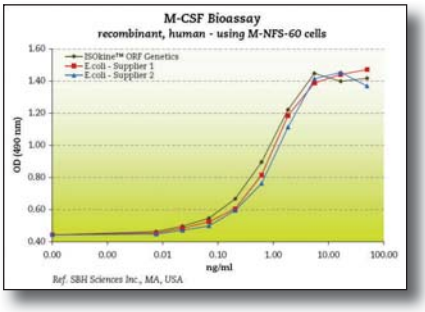


SCF, recombinant, mouse
Catalog Number: NBC1-21354

Stem cell factor (SCF) is a hematopoietic growth factor that stimulates the proliferation of bone marrow stem cells. SCF induces the proliferation of mast cells and primitive lymphoid and myeloid hematopoietic bone marrow progenitor cells. Mouse SCF is active on both human and murine cells.

M-CSF, recombinant, human
Catalog Number: NBC1-21352

Macrophage colony stimulating factor (M-CSF) is a hematopoietic growth factor produced by monocytes, granulocytes, endothelial cells, fibroblasts, and activated B- and T-cells. M-CSF regulates the proliferation and differentiation of hematopoietic stem cells into macrophages.



Also available: EGF, FGF-1, FGF-2, Flt3-ligand, G-CSF, IFN-alpha-2a, IFN-gamma, IGF-1, IL-1a/2/3/4/5/6/7/8/16/22, KGF, LIF, Neuregulin 1, SF20, TNF-alpha, TNF-beta, VEGF-121/165

Embryonic Stem Cells

Human embryonic stem cells (hESCs) are derived from the inner cell mass (ICM) of blastocyst-stage embryos about 4-5 days post-fertilization. Cells of the ICM are pluripotent – they are able to differentiate into derivatives of any of the three embryonic germ layers: ectoderm, mesoderm and endoderm. Manipulation of the culture medium and genetic modification can be used to control differentiation of ESCs, and to generate cell populations of specific lineages. Such directed differentiation can be used to produce cell populations that may prove useful for treating an array of diseases including Parkinson's disease, diabetes, and traumatic spinal cord injuries.

Stem Cell Lines

NEW

DGCR8 Knockout Mouse Embryonic Stem Cells NBA1-19349

Together with Drosha, DGCR8 is part of a microprocessing complex that cleaves long primary miRNAs into short hairpins that are exported from the nucleus and into the cytoplasm for further processing by Dicer. Unlike Drosha and Dicer, DGCR8 appears to interact exclusively with miRNAs. Research indicates that DGCR8 knockout ESCs express ESC-specific antigens, display slower cell-population doubling times, and accumulate in the G1 stage of the cell cycle. These observations indicate both that DGCR8 is required for the biogenesis of miRNA and that miRNAs are required for the self-renewal of ESCs.

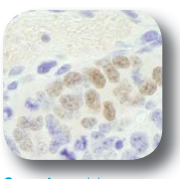
Stem Cell Markers

Nanog*

Nanog is a divergent homeodomain-bearing transcription factor expressed specifically in early embryos and pluripotent stem cells. Together with OCT4 and SOX2, expression of Nanog is a critical component of the signaling pathway maintaining the pluripotency of ESCs. In the mouse, absence of Nanog causes ESCs to differentiate into extraembryonic endodermal structures.

Catalog #	Product	Host	Type	Application	Species
NB100-587	Nanog	Rabbit	Polyclonal	IP, WB	Mu
NB100-588	Nanog	Rabbit	Polyclonal	IP, WB	Mu
NB100-58842	Nanog	Rabbit	Polyclonal	IHC	Mu
NB110-40414	Nanog	Rabbit	Polyclonal	WB	Hu
NB100-93546	Nanog	Rabbit	Polyclonal	WB	Hu
NB110-40660	Nanog	Goat	Polyclonal	ELISA, IF, WB	Ca, Hu, Mu, Rt
NB100-59737	Nanog	Goat	Polyclonal	ELISA, WB	Hu
NBP1-04320	Nanog (5A10)	Mouse	Monoclonal	ELISA, WB	Hu
NB100-78529	Nanog	Rabbit	Polyclonal	WB	Hu, Mu
NB100-56450	Nanog	Rabbit	Polyclonal	WB	Hu, Mu, Mk, Gt
H00079923-M04	Nanog (3A12)	Mouse	Monoclonal	ELISA	Hu
H00079923-M08	Nanog (1A2)	Mouse	Monoclonal	ELISA, WB	Hu
H00079923-M09	Nanog (1F8)	Mouse	Monoclonal	ELISA, WB	Hu
H00079923-M01	Nanog (2C11)	Mouse	Monoclonal	ELISA, WB	Hu
H00079923-M02	Nanog (2E11)	Mouse	Monoclonal	ELISA, WB	Hu
NB100-74466	Nanog	Rabbit	Polyclonal	WB	Hu
NB100-74467	Nanog	Rabbit	Polyclonal	WB	Hu

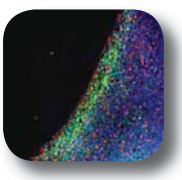
Nanog Antibody
NB100-58842



Immuno-histochemical analysis of mouse teratoma using NB100-58842.

Species: Mu
Applications: IHC

Nanog Antibody
NB110-40660



Immuno-fluorescent staining of human keratinocyte stem cells using NB110-40660.

Species: Ca, Hu, Mu, Rt
Applications: ELISA, IF, WB

Lin28 Antibody
H00079727-B01

Western Blot analysis of LIN28 transfected lysate (lane 1) and non-transfected lysates (lane 2) using H00079727-B01.

Species: Hu
Applications: ELISA, WB

Lin28*

Other Research Area: Cancer Stem Cells

Lin28 is a heterochronic protein involved in the timing of developmental events. Lin28 is expressed in undifferented ESCs and has been used to enhance the efficiency of formation of induced pluripotent cells from human fibroblasts. Lin28 has also been shown to regulate let-7, a group of tumor-suppressing miRNAs.

OCT4*

Aliases: OCT3, POU5F1

The homeodomain transcription factor OCT4 is expressed in ESCs and germ cells and is strongly implicated in the maintenance of ESC pluripotency. In mouse embryos, the absence of OCT4 results in a failure to form the ICM and, therefore, a complete loss of pluripotent cells. The protein has also been implicated in tumorigenesis of adult germ cells.

Catalog#	Product	Host	Type	Application	Species
NB100-2379	OCT4	Rabbit	Polyclonal	WB	Bv, Hu, Mu, Po, Mk
NB110-85544	OCT4	Rabbit	Polyclonal	ELISA, IF, IP, WB	Bv, Ca, Hu, Mu, Po, Mk, Eq
NB100-93553	OCT4	Rabbit	Polyclonal	WB	Hu, Mu, Rt
NB100-41088	OCT4	Goat	Polyclonal	ELISA, WB	Hu
NB110-90606	OCT4 (NRG1.1)	Mouse	Monoclonal	IHC, IHC-P	Hu
NB110-90614	OCT4 (NRG1.1)	Mouse	Monoclonal	IHC, IHC-P	Hu
NB100-78528	OCT4	Rabbit	Polyclonal	IF	Hu
NBP1-02731	OCT4	Rabbit	Polyclonal	ELISA, WB, IHC-P	Hu
NBP1-02871	OCT4	Rabbit	Polyclonal	WB, IHC-P	Hu
H00005460-M05	OCT4 (1B11)	Mouse	Monoclonal	ELISA, WB	Hu
H00005460-M01	OCT4 (1D2)	Mouse	Monoclonal	ELISA, WB	Hu
H00005460-M04	OCT4 (3A10)	Mouse	Monoclonal	ELISA, WB	Hu
H00005460-M02	OCT4 (4F8)	Mouse	Monoclonal	ELISA, WB	Hu

OCT4 Antibody NB100-2379

Species: Hu, Mu, Bv, Po, Mk
Applications: WB

Western blot analysis of mouse brain lysate using NB100-2379.

OCT4 Antibody NBP1-02871

Species: Hu
Applications: WB, IHC-P

Immuno-histochemical analysis of human prostate using NBP1-02871.

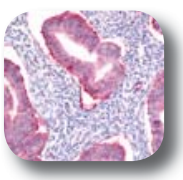
SOX2*

Alias: SRY box 2

Genes of the SOX (SRY-box containing) family encode a group of transcription factors defined by the conserved high motility group DNA-binding domain. SOX proteins bend DNA upon binding, which unzips the double helix and facilitates interaction with other transcription factors. The expression of SOX proteins is implicated in the regulation of embryonic development and cell fate determination.

Catalog#	Product	Host	Type	Application	Species
NB110-37235	SOX2	Rabbit	Polyclonal	IHC, IF, WB, ICC, IHC-P	Hu, Mu, Sh, Ch
NB110-37235SS	SOX2	Rabbit	Polyclonal	IHC, IF, WB, ICC, IHC-P	Hu, Mu, Sh, Ch
NB110-37235B	SOX2, Biotin	Rabbit	Polyclonal	IHC, WB, IHC-P	Hu, Mu, Sh, Ch
NB110-37235H	SOX2, HRP	Rabbit	Polyclonal	IHC, WB, IHC-P	Hu, Mu, Sh, Ch
NB100-93280	SOX2	Rabbit	Polyclonal	IP, WB	Hu
NB100-93281	SOX2	Rabbit	Polyclonal	IP, WB	Hu
NB100-93282	SOX2	Rabbit	Polyclonal	IP, WB	Hu
NB110-79875	SOX2	Rabbit	Polyclonal	WB	Hu, Mu, Rt
NB100-78512	SOX2	Rabbit	Polyclonal	IF, WB	Hu
NB100-78513	SOX2	Rabbit	Polyclonal	IF, WB	Hu
NB100-78514	SOX2	Rabbit	Polyclonal	IF, WB	Hu
NB100-78515	SOX2	Rabbit	Polyclonal	IF, WB	Hu

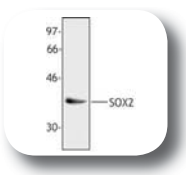
SOX2 Antibody NB110-37235



Species: Hu, Mu, Sh, Ch
Applications: IHC, IF, WB, ICC, IHC-P

Immuno-histochemical analysis of uterus, endometrial glands using NB110-7235.

SOX2 Antibody NB100-78514



Species: Hu
Applications: IF, WB

Western blot analysis of NTERA-2 whole cell extract using NB100-78514.

* Nanog, Lin28, OCT4 and SOX2 are the four factors needed to reprogram somatic cells into iPSCs.

WANT YOUR ANTIBODY PRODUCED FOR FREE?

Visit our website, www.novusbio.com, and fill out the Antibody Grant Form for a chance to receive 2 mgs of FREE antibody!

Grant Award Date: One Award selected on the 15th of every month. Awardees will receive a 0.2 mg test sample of affinity purified rabbit sera. (Typical antibody production takes 4-5 months). If the product works and you supply the necessary documentation, you will receive **2 mgs** of affinity purified antibody in exchange for product feedback. Novus reserves the right to sell the antibody produced by the grant. Submit by the end of the month to be selected in the following month's drawing by fax (below) or email (collaborations@novusbio.com).

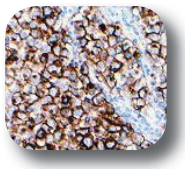
Alkaline Phosphatase

Aliases: ALP, PLAP

At high pH, alkaline phosphatase, a hydrolase enzyme, is responsible for the dephosphorylation of an array of molecules – DNA, RNA, and proteins. Most mammals have four different alkaline phosphatase isozymes: placental, placental-like, intestinal and non-tissue specific. In primates, all pluripotent cells, including ESCs, embryonic germ cells, and embryonal carcinoma cells, express alkaline phosphatase.

Catalog#	Product	Host	Type	Application	Species
NB600-588	Alkaline Phosphatase	Rabbit	Polyclonal	ELISA, WB	Hu
NB100-80825	Alkaline Phosphatase	Rabbit	Polyclonal	IHC	Hu
H00000251-A01	Alkaline Phosphatase	Mouse	Polyclonal	ELISA, WB	Hu
NB100-62327	Alkaline Phosphatase	Sheep	Polyclonal	ELISA	Hu
NB100-65765	Alkaline Phosphatase	Rabbit	Polyclonal	IHC-P, IHC-Fr	Hu
NB120-354	Alkaline Phosphatase	Rabbit	Polyclonal	ELISA, IF, IP, WB	Ba
NB120-7328	Alkaline Phosphatase	Goat	Polyclonal	ELISA, IP, WB	Bv
NB120-7319	Alkaline Phosphatase, HRP	Rabbit	Polyclonal	ELISA, IF, IP, WB	Ba
NB120-7329	Alkaline Phosphatase, HRP	Goat	Polyclonal	ELISA, IHC, IF, WB	Bv
NB120-7331	Alkaline Phosphatase, HRP	Sheep	Polyclonal	ELISA, IHC, IF, WB	Bv
NB120-7324	Alkaline Phosphatase, HRP	Rabbit	Polyclonal	ELISA, IHC, IF, WB	Hu
NB120-7323	Alkaline Phosphatase, Biotin	Rabbit	Polyclonal	ELISA, IHC, IF, WB	Hu
NB120-7325	Alkaline Phosphatase	Rabbit	Polyclonal	ELISA, IP	Bv
NB120-7326	Alkaline Phosphatase, Biotin	Rabbit	Polyclonal	ELISA, IHC, WB	Bv
NB120-7327	Alkaline Phosphatase, HRP	Rabbit	Polyclonal	ELISA, IHC, WB	Bv
NB120-19875	Alkaline Phophatase (SPM372)	Mouse	Monoclonal	ELISA	Hu
NB120-16695	Alkaline Phosphatase (SP15)	Rabbit	Monoclonal	IHC, WB, IHC-P, IHC-Fr	Hu, Mu, Rt
NB500-532	Alkaline Phosphatase (H7E8)	Mouse	Monoclonal	ELISA, IHC, WB	Hu
NB110-3638	Alkaline Phosphatase (8B6)	Mouse	Monoclonal	ELISA, IHC, IF, IHC-P, IHC-Fr, RI	Hu
NB100-2637	Alkaline Phosphatase (AP1B9)	Mouse	Monoclonal	IHC	Bv
NB100-2790	Alkaline Phosphatase (HD 3F6)	Mouse	Monoclonal	ELISA, IHC, IHC-Fr, RIA	Hu
NB100-62324	Alkaline Phosphatase (BGN/03/66KF42)	Mouse	Monoclonal	ELISA	Hu
NB100-62325	Alkaline Phosphatase (BGN/03/66KF44)	Mouse	Monoclonal	ELISA	Hu
NB100-62326	Alkaline Phosphatase (V17.3)	Mouse	Monoclonal	ELISA	Bv
NB100-66384	Alkaline Phosphatase (BGN/03/661)	Mouse	Monoclonal	ELISA, WB	Hu
NB600-540	Alkaline Phosphatase (TRA-2-49)	Mouse	Monoclonal	FACS, IP	Hu, Po, Rb, Fe

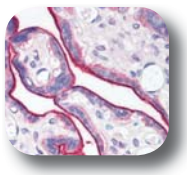
Alkaline Phosphatase Antibody
NB110-57422



Immuno-histochemical analysis of human seminoma using NB110-57422.

Species: Hu
Applications: IHC

Alkaline Phosphatase Antibody
NB100-80825



Immuno-histochemical analysis of placenta using NB100-80825.

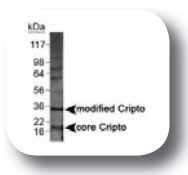
Species: Hu
Applications: IHC

Alkaline Phosphatase Antibody
NB600-588

Western blot analysis of human intestine cellular extracts using NB600-588.

Species: Hu
Applications: ELISA, WB

Cripto Antibody
NB100-1598



Western blot analysis of MDA-MB21 lysate using NB100-1598.

Species: Hu
Applications: WB

Cripto

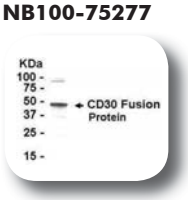
Aliases: CRGF, TDGF1/2

Cripto is a receptor of the TGF-beta signaling pathway. It is involved in the differentiation of cardiomyocytes and acts as a negative regulator of neurogenesis. Cripto is highly expressed in ESCs. In adults, Cripto is reactivated in a variety of epithelial cancers.

CD30

CD30 is a type I transmembrane glycoprotein of the tumor necrosis factor receptor superfamily. Ligand binding to the CD30 receptor mediates pleiotropic effects including cell proliferation, activation, differentiation, and apoptotic cell death. CD30, which serves as a marker of undifferentiated ESCs, was originally identified on Hodgkin's and Reed-Sternberg cells.

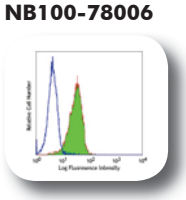
CD30 Antibody
NB100-75277



Western blot analysis of E. coli-derived fusion protein as test antigen using NB100-75277.

Species: Hu
Applications: WB

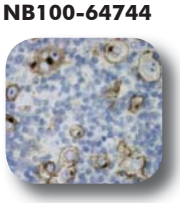
CD30 (MEM-268) Antibody
NB100-78006



Flow cytometric analysis of human T lymphoma cell line Hut-78 stained using NB100-78006.

Species: Hu
Applications: FACS

CD30 (CON6D/B5) Antibody
NB100-64744



Immuno-histochemical analysis of Human Hodgkin's lymphoma using NB100-64744.

Species: Hu
Applications: FACS, ELISA, IHC-P, IHC-Fr

FOXD3

Aliases: Genesis, AIS1, HFH2

Other Research Area: Neural Stem Cells

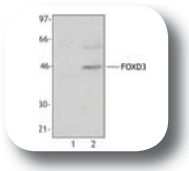
Forkhead box D3 (FOXD3) belongs to the forkhead family of transcription factors and is critical to maintaining the pluripotency of ESCs. Following gastrulation, FOXD3 is down-regulated everywhere but the neural crest cells. Defects in the growth factors that induce FOXD3 expression (including FGF8 and SNAIL) may cause premature cell differentiation and migration-associated birth defects.

FOXD3 Antibody
NB100-92410

Species: Hu, Mu
Applications: ELISA, IHC, WB

Western blot analysis of HUVEC cell extracts using NB100-92410.

FOXD3 Antibody
NB100-78525



Species: Hu
Applications: IF, WB

Western blot analysis of HeLa whole cell extract (lane 1) and NTERA-2 cells (lane 2) using NB100-78582.

GDF3 Antibody
NBP1-02494

Immuno-histochemical analysis of human testis using NBP1-02494.

Species: Hu
Applications: ELISA, IHC-P

GDF3

Alias: Vgr2

Other Research Area: Signaling pathways

GDF3 is a member of the bone morphogenetic protein (BMP) family and the TGF-beta superfamily. Members of this protein family act as regulators of cell growth and differentiation in both embryonic and adult tissues.

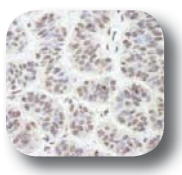
GNL3

Alias: Nucleostemin

Other Research Area: Neural Stem Cells

GNL3 is a protein found in the nucleoli of ESCs, adult CNS stem cells, primitive cells in the bone marrow and cancer cells. It has a putative role in controlling cell-cycle progression in stem cells and cancer cells.

GNL3 Antibody
NB100-2896



Species: Hu, Mu
Applications: IHC

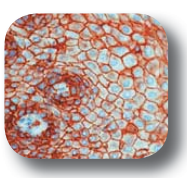
Immuno-histochemical analysis of human skin basal cell carcinoma using NB100-2896.

CD9

Alias: MIC3

The CD9 antigen is a membrane-associated glycoprotein expressed in a wide array of cells including developing B lymphocytes, platelets, monocytes and neural cells of the peripheral nervous system. CD9 also serves as a marker of undifferentiated ESC populations. Expression of CD9 in undifferentiated ESCs is mediated by the LIF/STAT3 pathway.

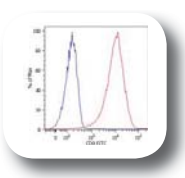
CD9 (72F6) Antibody
NB110-41534



Immuno-histochemical analysis of human tonsil using NB110-41534.

Species: Hu
Applications: IHC, IHC-P, IHC-Fr

CD9 (MEM-61) Antibody
NB500-327



Flow cytometric analysis of NALM-6 human pre-B cell leukemia cell line using NB500-327.

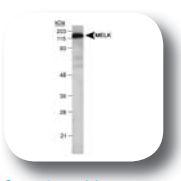
Species: Hu
Applications: FACS, IP, WB

CD9 Antibody
NBP1-00748

Western blot analysis of rat heart using NBP1-00748.

Species: Hu, Mu, Rt
Applications: ELISA, IHC, WB

MELK Antibody
NB100-782



Western blot analysis of Jurkat lysate using NB100-782.

Species: Hu
Applications: ELISA, WB

MELK

Alias: Protein Kinase PK38

Other Research Areas: Neural Stem Cells, Cancer Stem Cells

Maternal embryonic leucine zipper kinase (MELK) is implicated in stem cell renewal, cell cycle progression and pre-mRNA splicing. MELK expression has been identified in multipotent neural progenitor cells. It may play a role in embryonic and postnatal forebrain development.

Telomerase Reverse Transcriptase

Alias: TERT

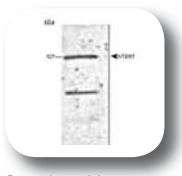
Telomerase reverse transcriptase (hTERT in humans) is a catalytic subunit of the enzyme telomerase, a ribonucleoprotein polymerase that maintains telomere ends. Telomerase expression plays a role in preserving stem cell immortality; the lack of telomerase in postnatal somatic cells is largely responsible for aging and cell senescence. It has been suggested that, to some extent, cancer cells attain their virtual immortality by inappropriately expressing telomerase in somatic cells.

hTERT Antibody
NB100-317

Immuno-histochemical analysis of normal pancreas using NB100-317.

Species: Hu
Applications: FACS, IHC, IF, WB, IHC-P

hTERT Antibody
NB100-297

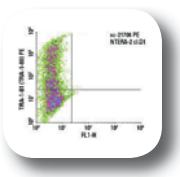


Western Blot analysis of MJ90 whole cell lysate using NB100-297.

Species: Hu
Applications: IF, WB

hTERT Antibody
SuperNovus Pack
NB100-913
Includes:
NB100-317 and NB100-297

TRA-1-81 Antibody
NB100-1833



Flow cytometric analysis of NTERA-2 cl.D1cells stained using NB100-1833.

Species: Hu
Applications: FACS, IHC, IF, IP, WB

TRA-1-60 and TRA-1-81

Both the TRA-1-60 and TRA-1-81 antibodies interact with antigens associated with a pericellular matrix proteoglycan. TRA-1-60 binds a neuraminidase resistant epitope, while TRA-1-81 binds an unknown epitope of the same molecule. The TRA-1-60 and TRA-1-81 antigens are expressed on the surface of human embryonic germ cells and human ESCs.

Neural Rosette Cells

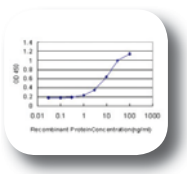
Neural rosette cells (R-NSCs) represent a distinct stem cell state in the progression of ESCs toward differentiated neural fates. While NSCs often have limited differentiation potential with respect to neurons, R-NSCs are capable of responding to patterning cues that direct differentiation toward the entire array of region-specific neuronal fates. R-NSCs can be derived from human or mouse ESCs or from cells of the neural plate. While rosette cells share many molecular markers with ESCs and NSCs, there are some markers that are unique to the R-NSC state. As wide growth potential often accompanies broad differentiation potential, it remains unclear whether R-NSCs will provide viable candidates for transplantation therapies.

ZBTB16

Alias: PLZF

The promyelocytic leukemia zinc finger (PLZF) protein is a DNA sequence-specific transcription repressor. The ability of the protein to bind DNA, repress transcription, and suppress cell growth is regulated by acetylation of lysines at its C-terminal zinc finger motif. In R-NSCs, loss of PLZF expression is associated with loss of rosette morphology and increased expression of markers indicative of the more specialized NSC state.

ZBTB16 (3A7) Antibody
H00007704-M01



ELISA analysis for recombinant GST tagged using ZBTB16.

Species: Hu
Applications: ELISA

DACH1 Antibody
NBP1-00136

Western blot analysis of human kidney lysate using NBP1-00136.

Species: Hu, Mu, Rt, Ca, Po
Applications: ELISA, WB

DACH1

DACH1 is similar to the D. melanogaster dachshund gene, which encodes a nuclear factor essential for the determination of cell fates in the eye, leg, and nervous system of the fly. As DACH1 negatively regulates TGF-beta signaling, it has been suggested that repression of the TGF-beta pathway may be necessary for maintaining the rosette cell state.

PLAGL1

Aliases: ZAC, LOT1

PLAGL1 is a zinc-finger protein that regulates cell cycle arrest and apoptosis. It is highly expressed in neuroepithelial cells during early brain development and has been associated with the R-NSC state. PLAGL1 also has a putative role as a tumor suppressor.

PLAGL1 (1E2) Antibody
H00005325-M01

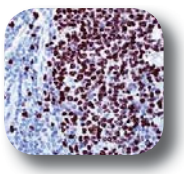
Western blot analysis detection against Immunogen uisng H00005325-M01.

Species: Hu
Applications: ELISA, WB

Ki67

Ki67 is expressed by proliferating cells of all active phases of the cell cycle (G1, S, G2, M). It is useful for determining the growth fraction of a given cell population – particularly of neoplasms. Ki67 is expressed in proliferating rosette cells that have not yet differentiated along the neural lineage.

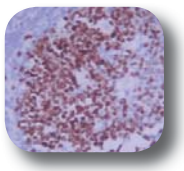
Ki67 (SP6) Antibody
NB110-57147



Immuno-histochemical analysis of human tonsil stained using NB110-57147.

Species: Hu, Mu, Rt
Applications: IHC

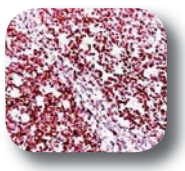
Ki67 Antibody
NB110-90593



Immuno-histochemical analysis of human tonsil using NB110-90593.

Species: Hu, Mu
Applications: IHC-P

Ki67 Antibody
NB500-170



Immuno-histochemical analysis of FFPE human tonsil using NB500-170.

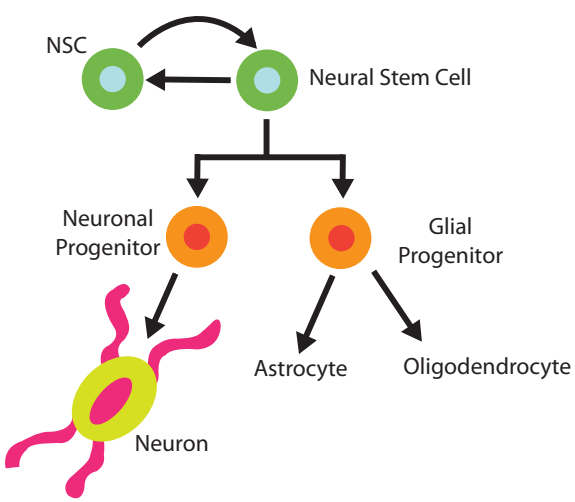
Species: Hu, Mu, Po
Applications: IHC-P, IF, ICC, IHC-Fr

Adult Stem Cells

Adult stem cells, also known as somatic stem cells, are undifferentiated cells that have the ability to self-renew and differentiate into some or all of the specialized cell types of their resident tissue or organ. Adult stem cells reside in specific regions of tissues, known as stem cell niches. The cells may remain quiescent for long periods of time, remaining in the G0 stage of the cell cycle until division is triggered by growth or repair mechanisms. Adult stem cells have been identified in a wide array of organs and tissues, including brain, bone marrow, blood vessels, skeletal muscle, teeth, heart, skin, gut, ovarian epithelium and testis.

Neural Stem Cells

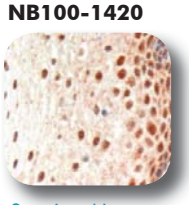
Neurogenesis, the process by which new neurons are created, is most active during prenatal development, although a limited number of new neurons are generated in adulthood. Adult neural stem cells (NSCs) are primarily located in two specific areas of the brain – the subventricular zone (SVZ) and the subgranular zone (SGZ). NSCs are multipotent and can be induced to give rise to the three major types of brain cells: astrocytes, oligodendrocytes, and neurons. NSCs are not necessarily homogeneous; while all NSCs can give rise to astrocytes and oligodendrocytes, most NSCs can only give rise to a specific subset of neurons.



PAX3

PAX3 is a member of the paired box family of transcription factors. PAX3 regulates the expression of the pro-neural gene, Ngn2, and the neural crest stem cell maintenance gene, HES1. Mutations in the PAX3 gene have been associated with Waardenburg syndrome and cause dramatic reductions in sensory neurogenesis.

PAX3 Antibody
NB100-1420



Immuno-histochemical analysis of human esophagus using NB100-1420.

Species: Hu
Applications: ELISA, WB, IHC-P

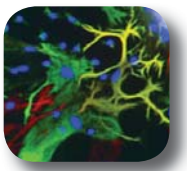
Vimentin

Alias: VIM

Vimentin is an intermediate filament protein subunit found in many kinds of mesenchymal and epithelial cells as well as developing neuronal and astrocytic precursor cells in the CNS. Vimentin often forms co-polymers with other intermediate filament proteins, such as GFAP in astrocytes.

Catalog #	Product	Host	Type	Application	Species
NB100-81644	Vimentin	Rabbit	Polyclonal	WB	Hu, Mu
NB100-87038	Vimentin	Rabbit	Polyclonal	IHC-P	Hu
NBP1-05425	Vimentin	Chicken	Polyclonal	IF	Hu
NB100-92123	Vimentin	Rabbit	Polyclonal	ELISA, IHC, WB	Hu, Mu, Rt
NBP1-02165	Vimentin	Chicken	Polyclonal	IHC, WB, ICC	
NBP1-19480	Vimentin	Rabbit	Polyclonal	IHC, IF, WB	Hu
NBP1-19531	Vimentin	Rabbit	Polyclonal	IHC, IF, WB	Hu
NB230-16700	Vimentin (SP20)	Rabbit	Monoclonal	IHC	Hu
NB500-563	Vimentin (VI-10)	Mouse	Monoclonal	IP, WB, ICC	Ch, Hu, Mu, Po, Rt
NB110-57646	Vimentin (EP1069Y)	Rabbit	Monoclonal	WB	Hu, Mu, Rt
NB110-57647	Vimentin (EP1070Y)	Rabbit	Monoclonal	IP, WB	Hu, Mu, Rt
NB100-63297	Vimentin (2701)	Human	Monoclonal	ELISA, IP, WB, IHC-P, IHC-Fr	Hu
NB200-621	Vimentin (V9)	Mouse	Monoclonal	WB, IHC-P, IHC-Fr	Ca, Ch, Hu, Po, Eq, Fe
NB200-622	Vimentin (V9)	Mouse	Monoclonal	IP, WB, IHC-P	Bv, Ca, Ch, Ha, Hu, Mu, Po, Mk, Rt, Rb, Eq, Fe
NB110-60529	Vimentin (9E7E7)	Mouse	Monoclonal	ELISA	Hu
NB110-89460	Vimentin (5G3F10)	Mouse	Monoclonal	ELISA, WB	Hu
NB200-623	Vimentin (V9)	Mouse	Monoclonal	WB, IHC-P	Hu

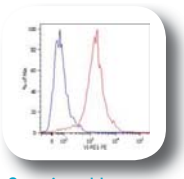
Vimentin Antibody
NB300-223



Immuno-fluorescent staining of mixed neuron/glial cultures stained using NB300-223 (green).

Species: Hu, Mu, Rt
Applications: IF, WB, IHC-P

Vimentin (VI-RE/1) Antibody
NB500-512



Intracellular flow cytometric analysis of Vimentin expression in LEP-19 human fibroblast cell line using NB500-512.

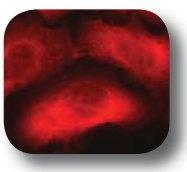
Species: Hu
Applications: ELISA, IF, WB, ICC

Nestin

Alias: NES

Nestin is a class VI intermediate filament expressed in early stages of development in the CNS, PNS and myogenic tissues. In adult organisms, nestin is expressed in the neuronal precursor cells of the SVZ. Nestin is commonly used as a marker for stem/progenitor cells, glioma cells, and tumor endothelial cells.

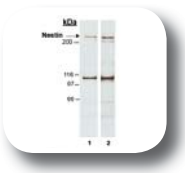
Nestin (10C2) Antibody
NB300-266



Immuno-fluorescent staining of PC-3 cells using NB300-266.

Species: Hu
Applications: IHC, IF, WB, ICC, IHC-P, IHC-Fr

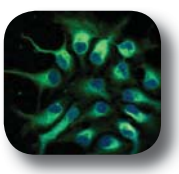
Nestin Antibody
NB300-265



Western blot analysis of human fetal temporal lobe tissue lysates using NB300-265.

Species: Hu
Applications: WB

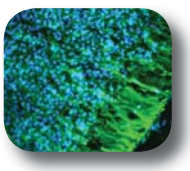
Nestin (196908) Antibody
NB100-1662



Immuno-fluorescent staining of human week-11 fetal neural progenitor cells using NB100-1662.

Species: Hu
Applications: ICC

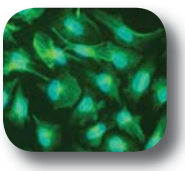
Nestin Antibody
NB100-1604



Immuno-fluorescent staining of e13 cells of the murine ventricular zone using NB100-1604.

Species: Mu
Applications: IHC, ICC

Nestin (2C1.3A11) Antibody
NBP1-00613



Immuno-fluorescent staining of the human glioma cell line U251 using NBP1-00613.

Species: Hu
Applications: FACS, IHC, IP, ICC, IB

Nestin (2C1.3A11) Antibody
NBP1-07062

Immuno-fluorescent staining of human glioma cell line U251 using NBP1-07062.

Species: Hu
Applications: FACS, IHC, IP, WB, ICC

REST Antibody
NB100-757

Detection of human REST by Western blot and Immuno-precipitation using NB100-757.

Species: Hu
Applications: IP, WB

REST

Alias: NRSF

REST is a transcriptional silencer that acts as a repressor of neuronal genes in non-neuronal tissues. REST and its alternatively spliced isoforms are expressed in undifferentiated neural progenitors and in ESCs, where they are critical for keeping neuronal gene expression low.

GFAP

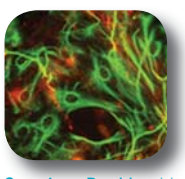
Glial fibrillary acidic protein (GFAP) is an intermediate filament protein specifically expressed in astrocytes and other astroglia in the CNS, in satellite cells in peripheral ganglia, and in non-myelinating Schwann cells of peripheral nerves. NSCs frequently exhibit strong expression of GFAP. Though the exact function of the protein is poorly understood, it is thought to play a role in maintaining cell shape and the mechanical strength of astrocytes.

GFAP (2A5) Antibody
NB300-142

Immuno-fluorescent staining of mixed neuron/glial tissue culture using NB300-142 (red).

Species: Bv, Ch, Hu, Ma, Mu, Po, Mk, Rt
Applications: IF, WB, IHC-P, IHC-Fr

GFAP (R40) Antibody
NB300-141



Immuno-fluorescent staining of rat astrocytic cells using NB300-141.

Species: Bv, Hu, Mu, Po, Rt, Fe
Applications: IF, WB, ICC, IHC-P, IHC-Fr

Catalog#	Product	Host	Type	Application	Species
NB110-93480	GFAP	Rabbit	Polyclonal	If, WB	Bv, Ch, Hu, Am, Mu, Po, Mk, Rt
NB110-93481	GFAP	Chicken	Polyclonal	IF, WB	Hu, Mu, Rt
NB100-53809	GFAP	Goat	Polyclonal	ELISA, WB	Mu
NB600-560	GFAP	Rabbit	Polyclonal	IHC	Bv, Ch, Ha, Hu, Mu, Mk, Rt, Gp, Fe, Sh
NB100-92274	GFAP	Rabbit	Polyclonal	ELISA, IHC, WB	Hu, Mu
NB100-65817	GFAP	Rabbit	Polyclonal	WB, IHC-P	Bv, Ca, Hu, Mu, Rt, Fe
NB110-58368	GFAP	Chicken	Polyclonal	IHC, ICC	Rt
H00002670-B01	GFAP	Mouse	Polyclonal	ELISA, WB	Hu
H00002670-D01P	GFAP	Rabbit	Polyclonal	ELISA, WB	Hu
H00002670-B01P	GFAP	Mouse	Polyclonal	ELISA, WB	Hu
NB100-66424	GFAP (GF-05)	Mouse	Monoclonal	ELISA, WB	Hu
NB500-555	GFAP (GF-02)	Mouse	Monoclonal	IHC, WB, ICC, IHC-P, IHC-Fr	
NB500-315	GFAP (GF-01)	Mouse	Monoclonal	IP, WB, ICC, IHC-P, IHC-Fr	Ca, Hu, Po
NB110-57003	GFAP (C-term)	Rabbit	Monoclonal	IHC, IP, WB, ICC	Hu, Rt
NB120-10062	GFAP (GF5)	Mouse	Monoclonal	ELISA, IHC, IF, WB	Hu
NB100-65747	GFAP (6F2)	Mouse	Monoclonal	IHC-P, IHC-Fr	Hu, Mu, Rb
H00002670-M01	GFAP (3H2)	Mouse	Monoclonal	ELISA, WB	Hu

GFAP Antibody
NBP1-05197

Immuno-fluorescent staining of mixed neuron-glial cultures using NBP1-05197 (red).

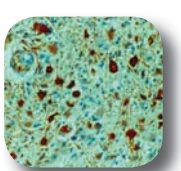
Species: Ch, Rt
Applications: IF, WB

GFAP Antibody
NBP1-05198

Mixed cultures of neurons and glia stained with NBP1-05198 (red) and DNA (blue).

Species: Rt
Applications: WB, ICC

GFAP Antibody
NB120-16997



Immuno-histochemical analysis of human astrocytoma stained using NB120-16997.

Species: Bv, Ch, Ha, Hu, Mu, Mk, Rt, Gp, Fe, Sh
Applications: IHC

PAX6

Other Research Area: ESCs

PAX6 is a member of the paired box family of transcription factors and plays an important role in the development of the eye, nose, CNS and pancreas. Within the CNS, PAX6 is involved in various developmental processes, including patterning of the neural tube, migration of neurons, and formation of neural circuits. PAX6 is expressed in ESCs and in NSCs of the SGZs and SVZs.

PAX6 Antibody
NB100-61654

Western blot analysis of mouse eye lysate using NB100-61654.

Species: Mu
Applications: ELISA, WB

SOX9

Other Research Area: MSCs

SOX9 is a transcription factor with a high mobility group DNA-binding domain that is expressed in all prechondrocytic and chondrocytic cells during embryonic development. SOX9 plays a central role in formation of the neural crest and regulates the formation and migration of mesenchymal tissues.

Catalog#	Product	Host	Type	Application	Species
NB100-93533	Sox9a	Goat	Polyclonal	ELISA	Ze
NB100-93534	Sox9b	Goat	Polyclonal	ELISA	Ze
NBP1-06581	Sox9	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Rt
H00006662-M01	Sox9 (2A2)	Mouse	Monoclonal	ELISA, WB	Hu
H00006662-A01	Sox9	Mouse	Polyclonal	ELISA, WB	Hu
H00006662-M02	Sox9 (3C10)	Mouse	Monoclonal	ELISA, IF, WB, IHC-P	Hu
H00006662-M04	Sox9 (3F11)	Mouse	Monoclonal	ELISA, IF, WB, IHC-P	Hu

SOX9 (3C10) Antibody
H00006662-M02

Immuno-fluorescence of monoclonal antibody to SOX9 on HepG2 cell.

Species: Hu
Applications: ELISA, IF, WB, IHC-P

Musashi-1

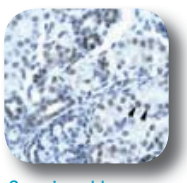
The Musashi family of proteins plays an important role in maintenance of the stem-cell state, cell fate determination, differentiation, and tumorigenesis. Musashi-1 is selectively expressed in NSCs and in intestinal stem cells outside the nervous system. The protein has also been detected in human tumor tissues. Musashi-1 acts to prevent Numb from repressing Notch signaling.

Musashi-1 Antibody
NB100-1759

Immuno-fluorescent of human neural rosettes using NB100-1759 (green).

Species: Hu, Mu, Rt
Applications: IHC, WB, ICC, IHC-P

PAX2 Antibody
NB600-1455



Immuno-histochemical staining of human kidney cells using NB600-1455.

Species: Hu
Applications: IHC, WB

PAX2

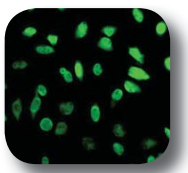
Other Research Area: MSCs

PAX2 is a member of the paired box family of transcription factors, a family of proteins that contain paired box domains and paired-type homeodomains, and plays a critical role in fetal development. PAX2 expression is critical for the development of many components of the nervous and excretory systems, including the midbrain, hindbrain, spinal cord, and urogenital tract. PAX2 is expressed by both neuronal and mesenchymal stem cells.

HES1

Hairy Enhancer of Split 1 (HES1) is a helix-loop-helix transcription factor that acts downstream of the Notch receptor. It is a key regulator of the growth phase of NSCs in the embryo and of the long-term reconstituting activity of NSCs and HSCs *in vitro*. HES1 deficient embryos exhibit severe defects in neuronal development accompanied by pancreatic hypoplasia.

HES1 (3A3) Antibody
H00003280-M02



Immuno-fluorescent staining of HeLa cell lysate using H00003280-M02.

Species: Hu
Applications: ELISA, IF, WB

Islet-1 (1A3) Antibody
H00003670-M01

Western blot analysis of K-562 using H00003670-M01.

Species: Hu
Applications: ELISA, WB

Islet-1

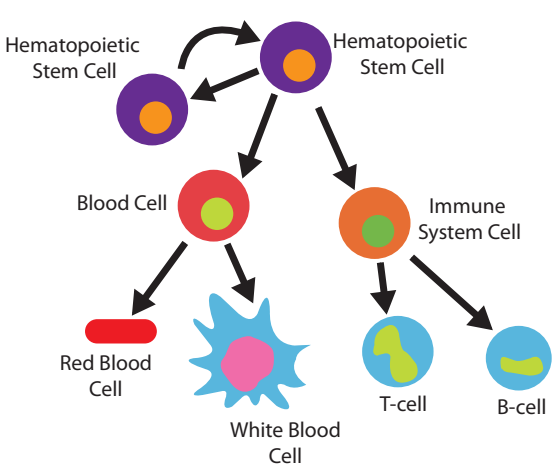
Alias: ISL1

Other Research Area: MSCs

Islet-1 is a member of the LIM/homeodomain family of transcription factors and is expressed on neural and mesenchymal stem cells. Mouse embryos deficient in ISL1 fail to undergo neural tube motor neuron differentiation. ISL1 also binds to the enhancer region of the insulin gene and is central to the development of pancreatic cell lineages.

Hematopoietic Stem Cells

Hematopoietic stem cells (HSCs) are multipotent, giving rise to blood cells of the myeloid and lymphoid lineages. HSCs are formed from the mesoderm during embryogenesis and are deposited in specific hematopoietic sites within the embryo. They can be harvested from the umbilical cord and placental blood from the bone marrow and peripheral blood of adults. HSCs are currently the only type of stem cell used therapeutically – HSC transplants are commonly used to treat cancers, as well as other blood and immune system disorders. Recent animal studies indicate that HSCs may have the ability to transdifferentiate, forming certain types of muscle, blood vessel and bone cells.



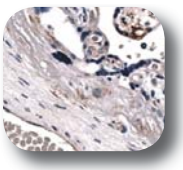
ABCG2

Alias: BCRP

ABCG2 is a membrane-associated protein that functions as a xenobiotic transporter. It is expressed in a wide variety of stem cells, most prominently HSCs. As the presence of CD34 downregulates ABCG2 expression, ABCG2 may be a useful marker for the characterization and isolation of primitive HSCs.

Catalog#	Product	Host	Type	Application	Species
NBP1-19758	ABCG2	Rabbit	Polyclonal	IHC, WB	Hu
NB600-1079	ABCG2 (BXP-9)	Rat	Monoclonal	FACS, IHC, WB, ICC	Mu
NB100-2177	ABCG2 (BXP-21)	Mouse	Monoclonal	WB, ICC, IHC-P, IHC-Fr	Hu
H00009429-D01P	ABCG2	Rabbit	Polyclonal	ELISA, WB	Hu
H00009429-A01	ABCG2	Mouse	Polyclonal	ELISA, WB	Hu
H00009429-M01	ABCG2 (1G1)	Mouse	Monoclonal	ELISA, WB	Hu
NB120-3379	ABCG2 (BXP-34)	Mouse	Monoclonal	ICC, IHC-Fr	Hu

ABCG2 (MM0047-2J39) Antibody
NB110-93511



Immuno-histochemical analysis of normal human placenta tissue using NB110-93511.

Species: Hu
Applications: FACS, IHC, IHC-P

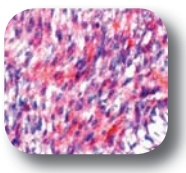
c-Kit

Aliases: KIT, CD117

c-Kit is a transmembrane receptor tyrosine kinase encoded by the c-Kit proto-oncogene. c-Kit plays a role in the regulation of cell proliferation, chemotaxis, apoptosis and adhesion. Mutations in the c-Kit receptor have been implicated in tumor growth and the progression of several cancers, including mast cell diseases and acute myeloid leukemia.

Catalog#	Product	Host	Type	Application	Species
H00003815-A01	c-Kit	Mouse	Polyclonal	ELISA, WB	Hu
NB100-75213	c-Kit	Chicken	Polyclonal	WB	Hu
NBP1-18780	c-Kit	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Po
NSB490	c-Kit	Rabbit	Polyclonal	WB	Hu
NBP1-19652	c-Kit	Rabbit	Polyclonal	IHC, WB	Hu, Mu
H00003815-D01P	c-Kit	Rabbit	Polyclonal	ELISA, WB	Hu
NB100-81864	c-Kit	Rabbit	Polyclonal	WB	Hu, Mu, Rt
NBP1-04960	c-Kit	Rabbit	Polyclonal	IHC	Hu
NSB492	c-Kit	Rabbit	Polyclonal	WB	Hu
NB600-1175	c-Kit	Rabbit	Polyclonal	IHC, IF, IHC-P	Hu
NB600-764	c-Kit (104D2), PE	Mouse	Monoclonal	FACS	Hu
NB600-765	c-Kit (104D2)	Mouse	Monoclonal	FACS	Hu, Mk
NB100-77930	c-Kit (104D2)	Mouse	Monoclonal	FACS	Hu, Bv
NB110-60533	c-Kit (8D7B4)	Mouse	Monoclonal	ELISA	Hu
H00003815-M02	c-Kit (6F2)	Mouse	Monoclonal	ELISA, WB	Hu
H00003815-M03	c-Kit (3A8)	Mouse	Monoclonal	ELISA, WB	Hu
H00003815-M04	c-Kit (1G1)	Mouse	Monoclonal	ELISA, WB	Hu
H00003815-M07	c-Kit (4F7)	Mouse	Monoclonal	ELISA, WB	Hu
H00003815-M08	c-Kit (2C3)	Mouse	Monoclonal	ELISA, WB	Hu
H00003815-M09	c-Kit (1D3)	Mouse	Monoclonal	ELISA, WB	Hu
NB100-77478	c-Kit (2B8), Biotin	Rat	Monoclonal	FACS, IF, IHC-Fr	Mu, Po
NB100-77479	c-Kit (2B8), FITC	Rat	Monoclonal	FACS	Mu, Po
NB100-63342	c-Kit (2B8)	Rat	Monoclonal	WB	Hu, Mu, Rt
NB100-77477	c-Kit (2B8)	Rat	Monoclonal	FACS, IP, IHC-Fr	Mu, Po
NB110-55636	c-Kit (YR145)	Rabbit	Monoclonal	IHC, WB	Hu
NB100-1766	c-Kit (5C8D4)	Rabbit	Monoclonal	ELISA, WB, IHC-P, IHC-Fr	Hu

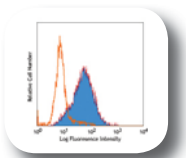
c-Kit Antibody
NB120-956



Immuno-histochemical analysis of human stromal tumor stained using NB120-956.

Species: Hu
Applications: IHC

c-Kit Antibody
NB100-77930



Flow cytometric analysis of human erythroleukemic cell line TF-1 stained using NB100-77930.

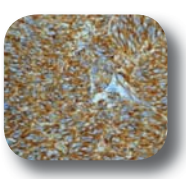
Species: Hu, Bv
Applications: FACS

c-Kit Antibody
H00003815-M05

Western blot analysis of transfected 293T cell line (lane 1) and non-transfected lysate (lane 2) using H0003815-M05.

Species: Hu
Applications: ELISA, WB

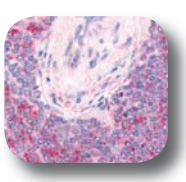
c-Kit (YR145) Antibody
NB110-55636



Immuno-histochemical analysis of human stomach adeno-carcinoma using NB110-55636.

Species: Hu
Applications: IHC, WB

c-Kit (5F6) Antibody
NB110-55526



Immuno-histochemical analysis of spleen, central artery and lymphocytes using NB110-55526.

Species: Hu
Applications: IHC

c-kit [Tyr936] Antibody
NBP1-04960

Immuno-histochemical analysis of human breast carcinoma tissue using NBP1-04960.

Species: Hu
Applications: IHC

Thy1

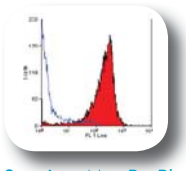
Alias: CD90,

Other Research Area: MSCs

Thy1 is a 25-35 kDa glycophosphatidylinositol (GPI)-anchored membrane glycoprotein. Though Thy1 expression varies by species, the protein is generally expressed in neurons, mesenchymal stem cells, hematopoietic stem cells, thymocytes and peripheral T-cells. Though the function of Thy1 is still unclear; it is thought to play a role in cell-cell and cell-matrix interactions, nerve regeneration, apoptosis and metastasis.

Catalog#	Product	Host	Type	Application	Species
H00007070-A01	Thy1	Mouse	Polyclonal	ELISA, WB	Hu
H00007070-B01	Thy1	Mouse	Polyclonal	WB	Hu
NBP1-06688	Thy1.2	Rat	Monoclonal	FACS	Mu
NB100-77465	Thy1.2 (30-H12)	Rat	Monoclonal	FACS, IHC-Fr	Mu
NB100-77466	Thy1.2 (30-H12), Biotin	Rat	Monoclonal	FACS	Mu
NB100-77467	Thy1.2 (30-H12), FITC	Rat	Monoclonal	FACS	Mu
NB600-663	Thy1 (F15-42-1)	Mouse	Monoclonal	FACS, IHC, IP	Hu, Mk
NB100-64092	Thy1 (F15-42-1), Biotin	Mouse	Monoclonal	FACS	Hu, Mk
NB100-64093	Thy1 (F15-42-1), FITC	Mouse	Monoclonal	FACS	Hu, Mk
NB600-725	Thy1 (F15-42-1), FITC	Mouse	Monoclonal	FACS	Hu, Mk
NB100-64094	Thy1 (F15-42-1), PE	Mouse	Monoclonal	FACS	Hu, Mk
NB100-64095	Thy1 (OX-7), Biotin	Mouse	Monoclonal	FACS	Mu, Rt, Rb, Gp
NB100-64096	Thy1 (OX-7), Biotin	Mouse	Monoclonal	FACS	Mu, Rt, Rb, Gp
NB100-64097	Thy1 (OX-7), FITC	Mouse	Monoclonal	FACS	Mu, Rt, Rb, Gp
NB100-64099	Thy1 (OX-7), FITC	Mouse	Monoclonal	FACS	Mu, Rt, Rb, Gp
NB100-64100	Thy1 (OX-7), PE	Mouse	Monoclonal	FACS	Mu, Rt, Rb, Gp
NB100-77464	Thy1 (G7)	Rat	Monoclonal	FACS, IHC	Mu
NB100-2681	Thy1 (aThy-1A1)	Mouse	Monoclonal	FACS, IP	Hu
NB100-64330	Thy1 (F7D5)	Mouse	Monoclonal	FACS, IHC, IHC-Fr	Mu
NB100-64331	Thy1 (T11D7e)	Mouse	Monoclonal	FACS	Mu
NB100-65613	Thy1 (FF-10)	Rat	Monoclonal	FACS, IP, WB, IHC-Fr	Mu
NB100-65931	Thy1 (YKIX337.217)	Rat	Monoclonal	FACS, IP	Ca
H00007070-M01	Thy1 (3F9)	Mouse	Monoclonal	ELISA, WB	Hu
NB200-528	Thy1 (3H1751)	Mouse	Monoclonal	FACS, IHC, WB	Mu, Rt
NB200-529	Thy1 (2Q1792)	Mouse	Monoclonal	FACS, ELISA, IHC	Mu, Rt
NB200-530	Thy1 (6A341)	Mouse	Monoclonal	FACS	Mu, Rt

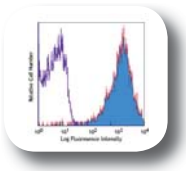
Thy1 (OX-7) Antibody
NB100-65543



Flow cytometric staining of rat thymus using NB100-65543.

Species: Mu, Rt, Rb, Gp
Applications: FACS, IP, WB, IHC-Fr

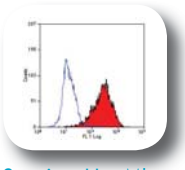
Thy1.2 (30-H12) Antibody
NB100-77466



Flow cytometric staining of C57BL/6 mouse thymocytes stained using NB100-77466.

Species: Mu
Applications: FACS

Thy1 (F15-42-1) Antibody
NB100-64094



Flow cytometric staining of HUT78 cells using NB100-64094.

Species: Hu, Mk
Applications: FACS

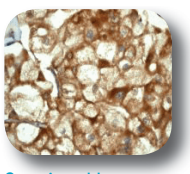
SCF

Aliases: MGF, SHEP7, KITLG

SCF is a cytokine that binds to the c-Kit receptor. It can exist both as a transmembrane protein and a soluble protein. SCF is expressed in the fetal liver and bone marrow and plays a critical role in hematopoiesis during embryonic development and in the adult. The expression of SCF may function to guide HSCs to their stem cell niche.

Catalog#	Product	Host	Type	Application	Species
NB100-64393	SCF (2A8/32)	Rat	Monoclonal	ELISA, IP, Func	Mu
H00004254-D01P	SCF	Rabbit	Polyclonal	ELISA, WB	Hu
H00004254-M01	SCF (3E10)	Mouse	Monoclonal	ELISA	Hu
H00004254-M04	SCF (2A10)	Mouse	Monoclonal	ELISA	Hu
H00004254-M06	SCF (4H7)	Mouse	Monoclonal	ELISA	Hu
H00004254-M08	SCF (2C7)	Mouse	Monoclonal	ELISA	Hu
H00004254-M05	SCF (3B8)	Mouse	Monoclonal	ELISA	Hu
H00004254-M09	SCF (2B1)	Mouse	Monoclonal	ELISA, WB	Hu
H00004254-M11	SCF (text)	Mouse	Monoclonal	ELISA	Hu
H00004254-M02	SCF (3C7)	Mouse	Monoclonal	ELISA, WB	Hu
H00004254-M10	SCF (2H8)	Mouse	Monoclonal	ELISA	Hu
NB200-513	SCF (1.2_2H5-1C10)	Mouse	Monoclonal	ELISA	Hu

SCF (EP665Y) Antibody
NB110-57479



Species: Hu
Applications: FACS, IHC, WB, ICC

Immuno-histochemical analysis of human kidney carcinoma using NB110-57479.

SCF Antibody
H00004254-B01

Species: Hu
Applications: ELISA, WB

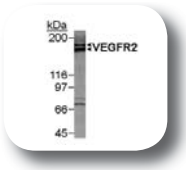
Western Blot analysis of transfected 293T cell line (lane 1) and non-transfected lysate (lane 2) using H00004254-B01.

VEGFR2

VEGF receptor 2 (VEGFR2) is a member of a receptor tyrosine kinase family whose activation plays an essential role in an array of processes including development of embryonic vasculature and wound healing. Upon ligand binding, VEGFR2 dimerizes and autophosphorylates multiple tyrosine residues. VEGFR2 serves as a marker for hemangioblasts, the precursors of HSCs.

Catalog #	Product	Host	Type	Application	Species
NB100-627	VEGFR2	Rabbit	Polyclonal	IP, WB	Hu, Mu
NB100-92661	VEGFR2	Rabbit	Polyclonal	ELISA, IHC, WB	Hu, Mu, Rt
NSB1047	VEGFR2	Rabbit	Polyclonal	WB	Hu, Mu,Rt
NBP1-18639	VEGFR2	Rabbit	Polyclonal	ELISA, IP, WB, B/N	Hu
NB100-92005	VEGFR2	Rabbit	Polyclonal	ELISA, IHC	Hu, Mu, Rt
NBP1-19948	VEGFR2	Rabbit	Polyclonal	IHC	Hu, Mu, Rt
NB100-82258	VEGFR2	Rabbit	Polyclonal	IHC	Hu, Mu, Rt
NSB1040	VEGFR2	Rabbit	Polyclonal	WB	Hu
NB100-686	VEGFR2	Rabbit	Polyclonal	IF, WB, IHC-P, IHC-Fr	Hu, Mu, Rt
NBP1-18640	VEGFR2, Biotin	Rabbit	Polyclonal	ELISA, IP, WB, B/N	Hu
NB110-60967	VEGFR2 (MM0002-2F66)	Mouse	Monoclonal	ELISA, IHC, WB	Hu
NB110-9982	VEGFR2 (KDR-2)	Mouse	Monoclonal	WB	Hu
NB120-10975	VEGFR2 (KDR-2), Biotin	Mouse	Monoclonal	FACS, ELISA, IHC, WB	Hu
NB200-208	VEGFR2 (EIC)	Mouse	Monoclonal	FACS, ELISA, IHC	Hu, Rt
NB100-40753	VEGFR2 (EIC), Biotin	Mouse	Monoclonal	FACS, ELISA, WB	Hu, Rt
NBP1-18641	VEGFR2 (KDR/EIC)	Mouse	Monoclonal	ELISA, IP, WB, B/N	Hu
NBP1-18642	VEGFR2 (KDR/EIC), Biotin	Mouse	Monoclonal	ELISA, IP, WB, B/N	Hu
NB600-1009	VEGFR2 (EWC)	Mouse	Monoclonal	FACS, ELISA, WB	Hu
NBP1-18643	VEGFR2 (KDR/EWC)	Mouse	Monoclonal	ELISA, IP, WB, B/N	Hu
NBP1-18644	VEGFR2 (KDR)	Mouse	Monoclonal	ELISA, IP, WB, B/N	Hu
NBP1-18645	VEGFR2 (KDR), Biotin	Mouse	Monoclonal	ELISA, IP, WB, B/N	Hu
NB110-57149	VEGFR2 (EPRER16Y)	Rabbit	Monoclonal	IP, WB	Hu
NB110-57644	VEGFR2 (EP105Y)	Rabbit	Monoclonal	WB	Hu
NB110-61017	VEGFR2 (RM0002-7A23)	Rat	Monoclonal	WB, IHC-Fr	Mu
NBP1-18648	VEGFR2 (Flk-1)	Rat	Monoclonal	ELISA, IP, WB, B/N	Hu

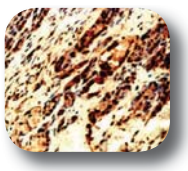
VEGFR2 Antibody
NB100-530



Western blot analysis of VEGFR-2 doublet in VEGFR-2 induced HUVEC lysate using NB100-530.

Species: Hu
Applications: WB

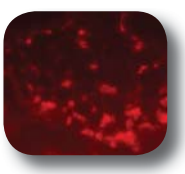
VEGFR2 Antibody
NB100-686



Immuno-histochemical analysis of human angiosarcoma using NB100-686.

Species: Hu, Mu, Rt
Applications: IF, WB, IHC-P, IHC-Fr

VEGFR2 [Tyr1175] Antibody
NB110-98672



Immuno-fluorescent analysis of human placental tissue using NB110-98672.

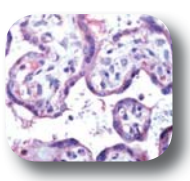
Species: Hu, Mu
Applications: WB, IHC-Fr

VEGFR2 [Tyr1175] Antibody
NBP1-19947

Immuno-histochemical analysis of human breast carcinoma tissue using NBP1-19947.

Species: Hu, Mu, Rt
Applications: IHC

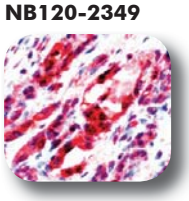
VEGFR2 Antibody
NB120-15292



Immuno-histochemical analysis of human placenta stained with Anti-Flk-1 antibody.

Species: Hu, Mu, Rt
Applications: IHC

VEGFR2 Antibody
NB120-2349



Immuno-histochemical analysis of human angiosarcoma stained using NB120-2349.

Species: Hu, Mu, Rt
Applications: IHC, IF, WB, IHC-P

PODXL

Aliases: podocalyxin-like, PC, PCLP

PODXL is a transmembrane sialomucin similar in structure to CD34. It is expressed by podocytes, vascular endothelium, mesothelium, and a subset of hematopoietic progenitors. PODXL serves as a cell surface marker for hemangioblasts, common precursors of HSCs.

PODXL Antibody
NB110-41503

Detection of podocalyxin in human lung lysate using NB110-41503.

Species: Hu
Applications: WB

CD133 Antibody
NB120-16518

Immuno-histochemical analysis of human hepatocarcinoma tissue using NB120-16518.

Species: Hu, Mu, Rt
Applications: ELISA, IHC, IF, WB, ICC, IHC-P

CD133

Aliases: prominin-1/2, AC133

CD133 is a glycoprotein that localizes specifically to cellular protrusions. It is expressed on hematopoietic stem and progenitor cells, neural stem cells, retinoblastoma and developing epithelium.

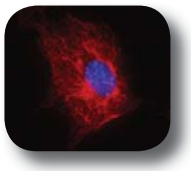
NCAM1

Alias: CD56

Neural cell adhesion molecule (NCAM1) is a member of the immunoglobulin superfamily of adhesion molecules that plays a role in cell migration, axonal growth, pathfinding and synaptic plasticity. It is expressed on most neuroectodermal derived cell lines, tissues and neoplasm, such as retinoblastoma, medulloblastoma, astrocytomas and neuroblastoma. It has recently been shown that many undifferentiated HSCs also express the CD56 antigen.

Catalog#	Product	Host	Type	Application	Species
H00004684-B01	NCAM1	Mouse	Polyclonal	ELISA, WB	Hu
H00004684-D01P	NCAM1	Rabbit	Polyclonal	ELISA, WB	Hu
NB500-626	NCAM1 (MEM-188)	Mouse	Monoclonal	FACS	Hu, Mu
NB100-77797	NCAM1 (MEM-188)	Mouse	Monoclonal	FACS, IP, WB, IHC-P	Hu, Bv, Po
NB110-81734	NCAM1 (MEM-188)	Mouse	Monoclonal	FACS	Hu, Mk
NB100-63478	NCAM1 (MEM-188); FITC	Mouse	Monoclonal	FACS	Hu
NB100-78016	NCAM1 (HCD56)	Mouse	Monoclonal	FACS	Hu
NB100-2730	NCAM1 (UJ13A)	Mouse	Monoclonal	IHC, WB	Hu
NB100-2718	NCAM1 (ERIC-1)	Mouse	Monoclonal	IHC, IP	Hu
NB100-62147	NCAM1 (ERIC-1)	Mouse	Monoclonal	ELISA, IHC-Fr, IB	Hu
NB100-63939	NCAM1 (C5.9); PE	Mouse	Monoclonal	FACS	Hu
H00004684-M01	NCAM1 (3G12)	Mouse	Monoclonal	ELISA, WB	Hu

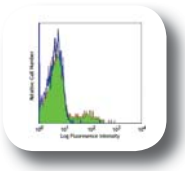
NCAM1 (MEM-188) Antibody
NB120-8079



Species: Hu
Applications: FACS

Immuno-fluorescent staining of 3T3 mouse embryonal fibroblast cell line using NB120-8079.

NCAM1 (HCD56) Antibody
NB110-59997



Species: Hu
Applications:FACS

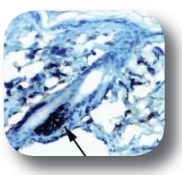
Flow cytometric analysis of human peripheral blood lymphocytes stained using NB110-59997.

CD34

Alias: QBEND-10

CD34 is a monomeric cell surface antigen highly expressed by human hematopoietic progenitor cells, endothelial cells, and cells of the brain and testis. CD34 has a putative role as an adhesion molecule mediating the attachment of stem cells to the bone marrow extracellular matrix or directly to stromal cells during early hematopoiesis. The intracellular chain of the CD34 protein is phosphorylated by activated Protein Kinase C, suggesting a role in signal transduction. Staining for CD34 has been used to measure angiogenesis.

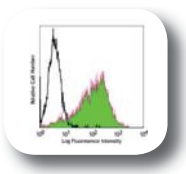
CD34 (MEC 14.7) Antibody
NB600-1071



Immuno-histochemical analysis of dorsal skin from an untreated Tg.AC mouse using NB600-1071.

Species: Hu, Mu
Applications: FACS, IHC, IF, IP, WB, ICC, IHC-P, IHC-Fr

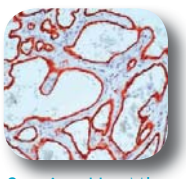
CD34 (MEC14.7) Antibody
NB100-77644



Flow cytometric analysis of mouse NIH/3T3 cell line stained using NB100-77644.

Species: Mu
Applications: FACS, IHC, IP, WB

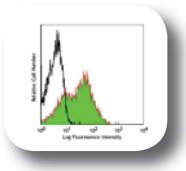
CD34 (QBEND-10) Antibody
NB100-1934



Immuno-histochemistry analysis of human tonsil stained using NB100-1934.

Species: Hu, Mk
Applications: IP, WB, IHC-P

SCA1 (D7) Antibody
NB100-77513



Flow cytometric analysis of C57BL/6 splenocytes stained using NB100-77513.

Species: Mu
Applications: FACS, IP, WB, IHC-Fr

SCA1

Aliases: Ly6a, TAP

Stem cell antigen 1 (SCA1) is a Type V GPI-anchored cell surface protein expressed on HSCs in the bone marrow. In mice of the Ly6.2 haplotype, SCA1 is also expressed on peripheral B lymphocytes and thymic and peripheral T lymphocytes.

IL-7

Interleukin7 (IL-7) is a lymphoid cell growth factor secreted by the stromal cells of the bone marrow and thymus. IL-7 stimulates the differentiation of HSCs into lymphoid progenitor cells and also the proliferation of cells of the lymphoid lineage. In cells of the myeloid lineage, IL-7 upregulates production of pro-inflammatory cytokines.

IL-7 Antibody
H00003574-B01

Western blot analysis of transfected 293T cell line (lane 1) and non-transfected lysate (lane 2) using H00003574-B01

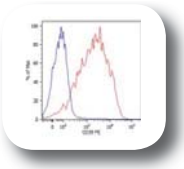
Species: Hu
Applications: ELISA, WB

CD38

Alias: T10

CD38 is a single-chain integral transmembrane protein that acts as a multifunctional ectoenzyme, playing roles in cell adhesion, signal transduction, and calcium signaling. CD38 is highly expressed on thymocytes and, to a lesser degree, on early cells of B and T lineages, plasma cells, monocytes and macrophages; it is also expressed on murine hematopoietic progenitors. In humans, CD38 is selectively expressed on white blood cells; selection of CD34+/CD38- cells allows for purification of HSCs.

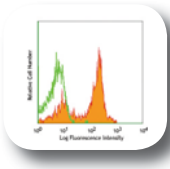
CD38 (HIT2) Antibody
NB500-510



Flow cytometric analysis of of PHA stimulated human peripheral blood lymphocytes using NB500-510.

Species: Hu
Applications: FACS, IHC, WB

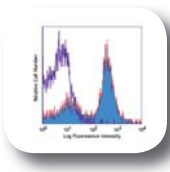
CD38 (90) Antibody
NB100-77405



Flow cytometric analysis of C57BL/6 splenocytes stained using NB100-77405.

Species: Mu
Applications: FACS, IHC-Fr

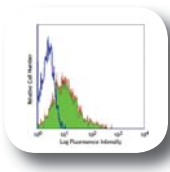
CD38 (90) Antibody
NB100-77406



Flow cytometric analysis of C57BL/6 mouse splenocytes stained using NB100-77406.

Species: Mu
Applications:FACS

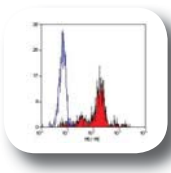
CD38 (HIT2) Antibody
NB100-77784



Flow cytometric analysis of human peripheral blood lymphocytes stained with HIT2 FITC.

Species: Hu
Applications: FACS, IHC, WB

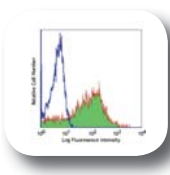
CD38 (AT13/5) Antibody
NB100-63740



Flow cytometric analysis of staining of human peripheral blood monocytes using NB100-63740.

Species: Hu
Applications: FACS

CD38 (HIT2) Antibody
NB100-77785



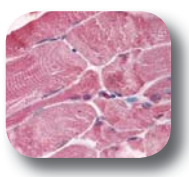
Flow cytometric analysis of human peripheral blood lymphocytes stained with NB100-77785.

Species: Hu
Applications: FACS, IHC-Fr

Bmi1

Bmi1 has been shown to induce telomerase activity, playing an important role in cell senescence. Expression of Bmi1 can immortalize human mammary epithelial cells and extend the replicative life-span of human fibroblasts. Bmi1 plays a central role in the inheritance of stemness, specifically in the self-renewal of HSCs.

Bmi1 Antibody
NBP1-02426

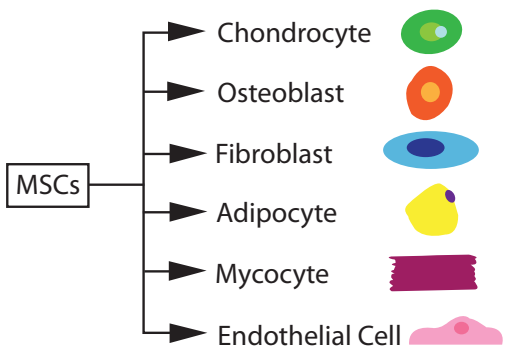


Immuno-histochemical analysis of human skeletal muscle using NBP1-02426.

Species: Bv, Fe, Mk, Ch, Ca, Xp, Hu, Mu, Rt
Applications: ELISA, IF, WB, IHC-P

Mesenchymal Stem Cells

Mesenchymal Stem Cells (MSCs), also known as Marrow Stromal Cells, are multipotent stem cells found in the stroma of non-hematopoietic bone marrow. They can also be derived from periosteum, fat and skin. In a steady state of cell turnover, or in response to trauma, MSCs are induced to differentiate into a wide array of cells types including osteoblasts, chondrocytes, myocytes, adipocytes and beta-pancreatic islet cells. Recent research indicates that MSCs are immuno-privileged, making them ideal candidates for allogeneic transplantation therapies. MSCs also have the ability to take up and incorporate new genetic material, making them ideal for targeted, *in vivo* regeneration therapies.

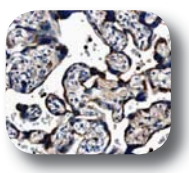


CD105

Alias: Endoglin

CD105 is a type I transmembrane glycoprotein that is made up of a 180 kDa homodimer with disulfide links. It is located on endothelial cells, activated macrophages, fibroblasts, and smooth muscle cells. Upregulated CD105 expression has been identified in tumor vasculature and proliferating cells.

CD105 (MM0049) Antibody
NB110-93509



Immuno-histochemical analysis of human placenta tissue using NB110-93509.

Species: Hu
Applications: IHC, IHC-P

CD44

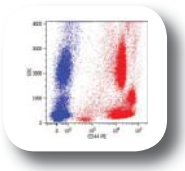
Alias: PGP1

Other Research Area: HSCs

CD44 is a type 1 transmembrane glycoprotein that plays a role in cell adhesion, cell migration and cell-cell interactions. Due to alternative RNA splicing, CD44 exists in several different isoforms and acts as a receptor for hyaluronic acid, osteopontin, collagens, and matrix metalloproteinases. A specialized glycoform of CD44, known as HCELL, is found on HSCs and MSCs and acts as a "homing receptor," directing migration of these cells to the bone marrow.

Catalog#	Product	Host	Type	Application	Species
NB100-75574	CD44	Chicken	Polyclonal	WB	Hu
H00000960-B01P	CD44	Mouse	Polyclonal	ELISA, WB, IHC-P	Hu
NBP1-00747	CD44	Rabbit	Polyclonal	ELISA, WB	Hu, Mu
AP00142PU-N	CD44	Rabbit	Polyclonal	IHC, IP, WB	Hu, Mu, Rt
NB500-481	CD44 (MEM-263)	Mouse	Monoclonal	FACS, IP, WB	Hu
NB110-81716	CD44 (MEM-263), PE	Mouse	Monoclonal	FACS, IP, WB	Ca, Hu, Po
NB600-1457	CD44 (A3D8)	Mouse	Monoclonal	FACS, IHC	Hu
NB100-64349	CD44 (Bu52)	Mouse	Monoclonal	FACS, IHC, IP, IHC-P, IHC-Fr	Hu
NB100-64993	CD44 (F10-44-2)	Mouse	Monoclonal	FACS, IHC-P, IHC-Fr	Hu
NB100-63805	CD44 (F10-44-2), FITC	Mouse	Monoclonal	FACS	Hu
NB500-386	CD44 (MEM-85)	Mouse	Monoclonal	FACS, ELISA, IP	Hu
NB500-634	CD44 (MEM-85), Biotin	Mouse	Monoclonal	FACS	Hu
NB500-387	CD44 (MEM-85), FITC	Mouse	Monoclonal	FACS	Hu
NB100-2710	CD44 (P2A1)	Mouse	Monoclonal	FACS, IP, IHC-P	Hu
NB100-65905	CD44 (5035-41.1D)	Mouse	Monoclonal	FACS, IP	Mu
NB100-63801	CD44 (5035-41.1D), FITC	Mouse	Monoclonal	FACS	Mu
NB100-65358	CD44 (W4/86)	Mouse	Monoclonal	FACS, IP, IHC-Fr	Rb
NB100-63807	CD44 (OX-49)	Mouse	Monoclonal	FACS	Rt
NB600-1317	CD44 (OX-50)	Mouse	Monoclonal	FACS, IHC-Fr	Rt
NB100-63809	CD44 (OX-50), FITC	Mouse	Monoclonal	FACS	Rt
NB100-63810	CD44 (OX-50), PE	Mouse	Monoclonal	FACS	Rt
NB110-55700	CD44 (EPR1013Y)	Rabbit	Monoclonal	FACS, IHC, WB, ICC	Hu
NBP1-06665	CD44 (AP-MAB0821)	Rat	Monoclonal	FACS, IHC-Fr, IVA	Mu
NB100-77413	CD44 (IM7)	Rat	Monoclonal	FACS, IHC, IP	Mu, Hu, Bb, Mk, Eq, Bv, Po, Ca, Fe
NB100-77414	CD44 (IM7), Biotin	Rat	Monoclonal	FACS	Mu, Hu, Bb, Mk, Eq, Bv, Po, Ca, Fe
NB100-77415	CD44 (IM7), FITC	Rat	Monoclonal	FACS	Mu, Hu, Bb, Mk, Eq, Bv, Po, Ca, Fe

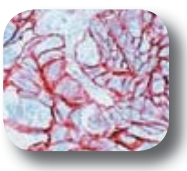
CD44 (MEM-85) Antibody
NB500-386



Flow cytometric analysis of surface staining of human peripheral blood cells using NB500-386.

Species: Hu
Applications: FACS, ELISA, IP

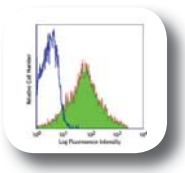
CD44 (156-3C11) Antibody
NB120-16728



Immuno-histochemical analysis of human esophageal carcinoma stained using NB120-166728.

Species: Hu, Mk, Bb
Applications: IP, WB, IHC-P

CD44 (IM7) Antibody
NB100-77413



Flow cytometric analysis of C57BL/6 mouse splenocytes stained using NB100-77413.

Species: Mu, Hu, Bb, Mk, Eq, Bv, Po, Ca, Fe
Applications: FACS, IHC, IP

Bone Morphogenetic Protein Receptors

The bone morphogenetic protein (BMP) receptors are a family of transmembrane serine/threonine kinases that include the type I receptors BMPR1A and BMPR1B, as well as the type II receptor BMPR2. These receptors are closely related to the activin receptors, ACVR1 and ACVR2. The ligands that bind to these receptors are members of the TGF-beta superfamily. Though type II receptors bind ligands in the absence of type I receptors, their respective type I receptors are required for signaling. BMPs act to maintain stable stem cell populations by repressing WNT signaling.

BMPR1A Antibody
NB100-41375

Western blot analysis of HeLa cell lysate using NB100-41375.

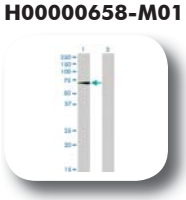
Species: Hu
Applications: ELISA, WB

BMPR1A (4C4) Antibody
H00000657-M01

Western blot analysis of transfected 293T cell line (lane 1) and non-transfected lysate (lane 2) using H00000657-M01.

Species: Hu
Applications: ELISA, WB

BMPR1B (2F3) Antibody
H00000658-M01



Western blot analysis of transfected 293T cell line (lane 1) and non-transfected lysate (lane 2) using H00000658-M01.

Species: Hu
Applications: ELISA, WB

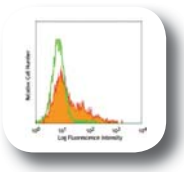
CD106

Aliases: VCAM-1; INCAM-110

CD106 is a 110 kDa GPI-linked transmembrane protein expressed on bone marrow stromal cells, myeloid progenitors, splenic dendritic cells, activated endothelial cells, and some lymphocytes. It plays a role in cell adhesion and acts as a counter-receptor for VLA-4 and LPAM-1.

Catalog #	Product	Host	Type	Application	Species
H00007412-B01P	CD106	Mouse	Polyclonal	ELISA, WB	Hu
H00007412-D01P	CD106	Rabbit	Polyclonal	ELISA, WB	Hu
NB110-93515	CD106 (MM0048-6C12)	Mouse	Monoclonal	IHC, WB, IHC-Fr	Hu
NB100-77474	CD106 (429)	Rat	Monoclonal	FACS, IP, IHC-Fr	Mu
NB100-77707	CD106 (MR106)	Mouse	Monoclonal	FACS, IP, WB, IHC-Fr	Rt
NB100-77708	CD106 (MR106), Biotin	Mouse	Monoclonal	FACS	Rt
NB100-63332	CD106 (STA), PE	Mouse	Monoclonal	FACS	Hu
NB100-64769	CD106 (1.G11B1)	Mouse	Monoclonal	FACS, ELISA, IP, IHC-Fr	Hu

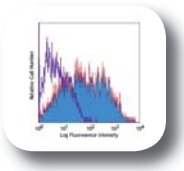
CD106 (429) Antibody
NB100-77474



Flow cytometric analysis of C57BL/6 mouse bone marrow myeloid cells stained using NB100-77474.

Species: Mu
Applications: FACS, IP, IHC-Fr

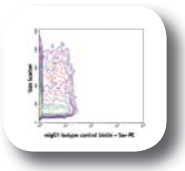
CD106 (STA) Antibody
NB100-77823



Flow cytometric analysis of TNF-alpha stimulated HUVEC cells stained using NB100-77823.

Species: Hu
Applications: FACS

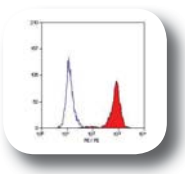
CD106 (MR106) Antibody
NB100-77708



Flow cytometric analysis of LOU rat bone marrow cells stained using NB100-77708.

Species: Rt
Applications: FACS

CD106 (STA) Antibody
NB100-63332



Flow cytometric analysis of staining of KM-H2 cells using NB100-63332.

Species: Hu
Applications: FACS

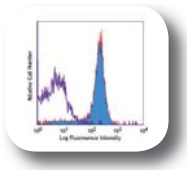
PECAM-1

Other Research Area: HSCs

Platelet endothelial cell adhesion molecule 1 (PECAM-1) is a type I integral membrane glycoprotein and a member of the immunoglobulin superfamily of cell surface receptors. It is expressed on endothelial cells, concentrated at intercellular junctions, and weakly expressed on peripheral lymphoid cells and platelets. PECAM-1 is used as marker for myeloid progenitor cells (a subset of MSCs) and for angiogenesis.

Catalog #	Product	Host	Type	Application	Species
H00005175-B01	PECAM-1	Mouse	Polyclonal	ELISA, WB	Hu
NB100-2284	PECAM-1	Rabbit	Polyclonal	IHC	Hu
H00005175-D01P	PECAM-1	Rabbit	Polyclonal	ELISA, WB	Hu
NB100-92205	PECAM-1	Rabbit	Polyclonal	ELISA, IHC, IF	Hu, Mu
NB100-65900	PECAM-1 (C0.3E-1D4)	Mouse	Monoclonal	FACS, IP	Bv, Gt, Sh
NB120-13466	PECAM-1 (WM-59), FITC	Mouse	Monoclonal	FACS, IF	Hu
NB100-63705	PECAM-1 (WM59), Biotin	Mouse	Monoclonal	FACS	Hu
NB100-77780	PECAM-1 (WM59), FITC	Mouse	Monoclonal	FACS	Hu, Bb, Mk
NB100-63707	PECAM-1 (WM59), PE	Mouse	Monoclonal	FACS	Hu
NB100-65633	PECAM-1 (1A10)	Mouse	Monoclonal	IHC-P	Hu
NB110-87060	PECAM-1 (2F7B2)	Mouse	Monoclonal	ELISA, WB, IHC-P	Hu
H00005175-M01	PECAM-1 (1D2-1A5)	Mouse	Monoclonal	ELISA, WB, IHC-P	Hu
NB100-65336	PECAM-1 (LCI-4)	Mouse	Monoclonal	FACS, IP, IHC-Fr	Hu, Po
NB100-77398	PECAM-1 (390)	Rat	Monoclonal	FACS, IHC, IP	Mu
NB100-77399	PECAM-1 (390), Biotin	Rat	Monoclonal	FACS	Mu
NB100-63709	PECAM-1 (390), PE	Mouse	Monoclonal	FACS	Mu
NB100-64875	PECAM-1 (LCI-9)	Mouse	Monoclonal	FACS, IHC-Fr	Po
NB100-63701	PECAM-1 (TLD-3A12), Biotin	Mouse	Monoclonal	FACS	Rt
NB100-63703	PECAM-1 (TLD-3A12), FITC	Mouse	Monoclonal	FACS	Rt
NB100-63704	PECAM-1 (TLD-3A12), PE	Mouse	Monoclonal	FACS	Rt
NB100-64796	PECAM-1 (TLD-3A12)	Mouse	Monoclonal	FACS, ELISA, WB, IHC-Fr	Rt
NB100-77400	PECAM-1 (390), FITC	Rat	Monoclonal	FACS	Mu
NB100-77402	PECAM-1 (MEC13.3), Biotin	Rat	Monoclonal	FACS	Mu
NB100-65337	PECAM-1 (ER-MP12)	Rat	Monoclonal	FACS, IP, IHC-Fr	Mu
NB500-427	PECAM-1 (MEM-05)	Mouse	Monoclonal	FACS, WB	Hu
BM4047	PECAM-1 (MEM-05), PE	Mouse	Monoclonal	IHC	Hu

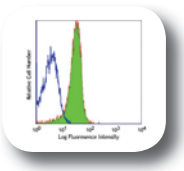
PECAM-1 (390) Antibody
NB100-77399



Flow cytometric analysis of C57BL/6 mouse splenocytes stained using NB100-77399.

Species: Mu
Applications: FACS

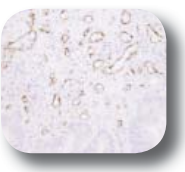
PECAM-1 (390) Antibody
NB100-77400



Flow cytometric analysis of C57BL/6 mouse splenocytes stained using NB100-77400.

Species: Mu
Applications: FACS

PECAM-1 (MEC13.3) Antibody
NB100-2284



Detection of Human Pecam-1 by Immuno-histochemistry.

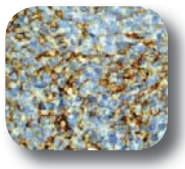
Species: Hu
Applications: IHC

ICAM-1

Intercellular adhesion molecule-1 (ICAM-1) is a member of the immunoglobulin supergene family and acts as a ligand for the beta-2 integrin molecules present on leukocytes. ICAM-1 can participate in trafficking of inflammatory cells, cell-cell interactions during antigen presentation, microbial pathogenesis, and signal transduction, depending on the cell type in which it is expressed. ICAM-1 is found on leukocytes, fibroblasts, epithelial cells and endothelial cells. Its expression is regulated by inflammatory cytokines.

Catalog#	Product	Host	Type	Application	Species
H00003383-D01P	ICAM-1	Rabbit	Polyclonal	ELISA, WB	Hu
H00003383-A01	ICAM-1	Mouse	Polyclonal	ELISA, WB	Hu
NBP1-05951	ICAM-1	Sheep	Polyclonal	ELISA, WB	Hu
NB110-57106	ICAM-1 (EP1442Y)	Rabbit	Monoclonal	IHC, WB, ICC	Hu
NBP1-06667	ICAM-1 (AP-MAB0823)	Rat	Monoclonal	FACS, IP	Mu
NB500-584	ICAM-1 (1H4), Biotin	Mouse	Monoclonal	FACS	Hu
NB500-583	ICAM-1 (1H4), FITC	Mouse	Monoclonal	FACS	Rt
NB500-582	ICAM-1 (1H4), PE	Mouse	Monoclonal	FACS	Hu
NB110-58732	ICAM-1 (1H4)	Mouse	Monoclonal	FACS, IHC, ICC, IHC-P, IHC-Fr	Hu
NB100-2678	ICAM-1 (P1W16)	Mouse	Monoclonal	FACS, IHC, IF, IP, IHC-P	Hu
NB110-60977	ICAM-1 (MM0011-7D22)	Mouse	Monoclonal	WB	Hu
NB110-61006	ICAM-1 (MM0040-1H19)	Mouse	Monoclonal	ELISA, WB	Hu
NB100-78063	ICAM-1 (HICAM-1)	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NB100-63932	ICAM-1 (15.2), Biotin	Mouse	Monoclonal	FACS	Hu
NB100-63933	ICAM-1 (15.2), FITC	Mouse	Monoclonal	FACS	Hu
NB100-63934	ICAM-1 (15.2), PE	Mouse	Monoclonal	FACS	Hu
NB100-65379	ICAM-1 (15.2)	Mouse	Monoclonal	FACS, IP, IHC-Fr	Hu
NB100-64772	ICAM-1 (6.5B5)	Mouse	Monoclonal	FACS, ELISA, IP, IHC-Fr	Hu
NB100-65382	ICAM-1 (84H10)	Mouse	Monoclonal	FACS, IP, IHC-Fr	Hu
H00003383-M01	ICAM-1 (3H8-2G6)	Mouse	Monoclonal	ELISA, IF, WB, IHC-P	Hu
NB100-77926	ICAM-1 (MEM-111)	Mouse	Monoclonal	FACS, IHC, WB, ICC	Hu, Bv, Rt
NB100-77927	ICAM-1 (MEM-111), FITC	Mouse	Monoclonal	FACS, ICC	Hu, Bv, Rt
NB100-77928	ICAM-1 (MEM-111), Biotin	Mouse	Monoclonal	FACS, ICC	Hu, Bv, Rt
NB100-65608	ICAM-1 (1A29)	Mouse	Monoclonal	FACs, IP, WB, IHC-Fr	Rt
NB100-63935	ICAM-1 (1A29), Biotin	Mouse	Monoclonal	FACS	Rt
NB100-63937	ICAM-1 (1A29), PE	Mouse	Monoclonal	FACS	Rt

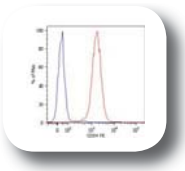
ICAM-1 (EP1442Y) Antibody
NB110-57106



Immuno-histochemical staining of human tonsils using NB110-57106.

Species: Hu
Applications: IHC, WB, ICC

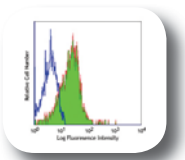
ICAM-1 (1H4) Antibody
NB500-582



Flow cytometric analysis of surface staining of U937 human histiocytic lymphoma cell line using NB500-582.

Species: Hu
Applications: FACS

ICAM-1 (MEM-111) Antibody
NB100-77927



Flow cytometric analysis of human peripheral blood lymphocytes stained using NB100-77927.

Species: Hu, Bv, Rt
Applications: FACS, ICC

Aggrecan

Aggrecan is a proteoglycan that forms a major structural component of cartilage. Aggregan degradation products are present in the synovial fluids of patients with degenerative joint disease.

Catalog#	Product	Host	Type	Application	Species
H00000176-B01	Aggrecan	Mouse	Polyclonal	ELISA, WB	Hu
NB100-74349	Aggrecan	Rabbit	Polyclonal	WB	Hu, Ca, Rt, Mu, Bv
NB120-179	Aggrecan (HAG7E1)	Mouse	Monoclonal	ELISA, IP, IHC-Fr	Hu
NB100-64764	Aggrecan (HAG5B11)	Mouse	Monoclonal	ELISA, IP, IHC-Fr	Hu
NB100-64766	Aggrecan (HAG7D4)	Mouse	Monoclonal	ELISA, IP, IHC-Fr	Hu
NB110-6524	Aggrecan (6-B-4)	Mouse	Monoclonal	ELISA, IHC, WB	Bv, Hu
NB110-6852	Aggrecan (BC-14)	Mouse	Monoclonal	ELISA, IHC, WB	Bv, Hu, Po, Rt, Gp, Eq
NB110-12050	Aggrecan (BC-13)	Mouse	Monoclonal	ELISA, IHC, WB, IHC-P, IHC-Fr	Bv, Ca, Hu, Po, Eq

Aggrecan (JSCNIT) Antibody
NB100-74350

Immuno-fluorescent staining of osteoarthritis cartilage using NB100-74350.

Species: Po, Bv, Ca, Rt, Mu, Hu
Applications: IF, WB

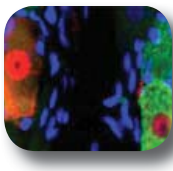
NGF Receptor

Aliases: p75 NTR, CD271

Other Research Area: NSCs

Nerve growth factor (NGF) receptor is a low-affinity receptor that binds NGF and other neurotrophins. It is a 75kDa transmembrane glycoprotein that is mainly expressed on Schwann cells and neurons. NGFR is necessary for the regulation of neuronal growth, migration, differentiation and cell death during development of the central and peripheral nervous systems.

NGF Receptor Antibody
NB110-74768



Immuno-fluorescent analysis of rat trigeminal neurons using NB110-74768.

Species: Rt
Applications: ELISA, IHC, WB

Hepatic Cell Markers

Though most liver regeneration takes place independently of progenitors, liver stem cells have important implications for the treatment of chronic liver diseases and some forms of liver cancer. Oval cells (named for their nuclear morphology) have been identified as progenitors capable of differentiating into hepatocytes and bile duct cells. Antibodies to oval cell specific antigens can be used to isolate cells that may be useful for transplantation treatments.

Periductal Cell Markers:

NBP1-18965, NBP1-18967, NBP1-18968, NBP1-18970, NBP1-18971 and NBP1-18981

Ductal Cell Markers:

NBP1-18961, NBP1-18963, NBP1-18964

Pancreatic Stem Cell Markers

Ex vivo manipulation of ESCs may yield beta cells that could be used in transplantation therapies to treat Type I Diabetes. Identified markers for cells of the beta lineage will allow researchers to isolate differentiated cells from the complex cell mixtures generated by induced differentiation of an ESC line. HP marker antibodies reacts selectively with cell surface molecules on human pancreatic cells. Antibodies of the HPi- classification react with endocrine pan-islet cells; antibodies of the HPalpha- classification react with endocrine alpha cells; antibodies of the HPx- classification react with exocrine cells; and antibodies of the HPd- classification react with duct cells.

HPi1 (HIC0-4F9) Antibody
NBP1-18872

Immuno-fluorescent staining of human pancreas using NBP1-18872.

Species: Hu
Applications: FACS, IHC

HPi2 (HIC1-2B4) Antibody
NBP1-18946

Flow cytometric analysis of enzyme dispersed human pancreas cells using NBP1-18946.

Species: Hu
Applications: FACS, IHC

HPi3 (HIC1-7H10) Antibody
NBP1-18947

Immuno-fluorescent staining of human pancreas using NBP1-18947.

Species: Hu
Applications: FACS, IHC

Also Available: NBP1-18951, NBP1-18952, NBP1-18953, NBP1-18955, NBP1-18948, NBP1-18949 and NBP1-18950

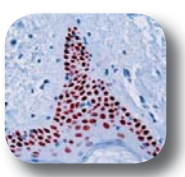
Keratinocyte Stem Cell Markers

p63

Aliases: KET, p73L

The proliferative compartment of stratified epithelia is occupied by stem and transient amplifying (TA) keratinocytes. The p63 transcription factor is uniquely expressed on keratinocyte stem cells, distinguishing them from the TA cells. Overexpression of the protein has been shown to induce apoptosis.

p63 (4A4) Antibody
NB100-691



Immuno-histochemical staining of skin using NB100-691.

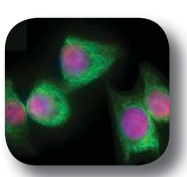
Species: Hu, Mu, Rt
Applications: IF, IP, WB, IHC-P

p63 (Y289) Antibody
NB110-57309

Immuno-fluorescent staining of A431 cells using NB110-57309.

Species: Hu
Applications: IP, WB, ICC

p63 Antibody
NB100-78398



Immuno-fluorescent staining of HeLa cells using NB100-78398 (red).

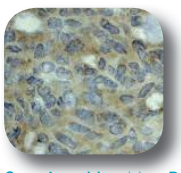
Species: Hu
Applications: IF, WB

MAPK6

Alias: ERK3

Extracellular signal-regulated kinase 3 (ERK3), also known as MAPK6, belongs to the Ser/Thr protein kinase family and is a member of the mitogen-activated (MAP) kinase superfamily. MAPK6 is ubiquitously expressed in the nuclei of proliferating cells, including keratinocyte stem cells. The protein is highly unstable and is constitutively degraded by the ubiquitin-proteasome pathway.

MAPK6 (EP1720Y) Antibody
NB110-57175



Immuno-histochemical analysis of human breast carcinoma using NB110-57175.

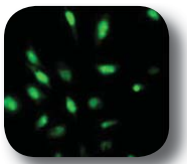
Species: Hu, Mu, Rt
Applications: FACS, IHC, WB

MAPK6 Antibody
NBP1-00815

Western blot analysis of K562 cell extracts using NBP1-00815.

Species: Hu, Mu, Rt
Applications: ELISA, WB

MAPK6 (4C11) Antibody
H00005597-M02



Immuno-fluorescent analysis of HeLa cell lysate using H00005597-M01.

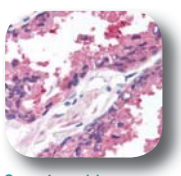
Species: Hu
Applications: ELISA, IF, WB

Cancer Stem Cell Markers

PSCA

Prostate stem cell antigen (PSCA) is a prostate-specific gene with 30% homology to stem cell antigen 2, a GPI-anchored cell surface antigen. PSCA is localized to the basal cell epithelium, the location of putative prostate stem cells. PSCA is overexpressed in ~40% of primary prostate cancers and in as many as 100% of metastatic cancers.

PSCA Antibody
NBP1-02682



Immuno-histochemical analysis of human prostate using NBP1-02682.

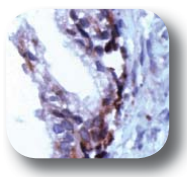
Species: Hu
Applications: IHC-P

PSCA Antibody
H00008000-B01

Western blot analysis of transfected 293T cell line (lane 1) and non-transfected lysate (lane 2) using H00008000-B01.

Species: Hu
Applications: ELISA, WB

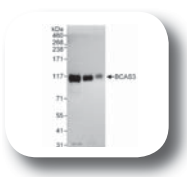
PSCA Antibody
NB120-15168



Immuno-histochemical analysis of human breast carcinoma using NB120-15168.

Species: Hu
Applications: IHC-P

BCAS3 Antibody
NB110-40682



Detection of human BCAS3 by western blot and immunoprecipitation.

Species: Hu
Applications: IP, WB

BCAS3

BCAS3 (breast carcinoma amplified sequence 3) is involved, along with PELP1, in a positive feedback loop leading to ER-alpha mediated signal amplification in breast cancer cells. BCAS3 is expressed in human ESCs and blood vascular precursors and aberrantly expressed in malignant brain legions and breast cancer stem cells.

ALDH1

ALDH1 is an aldehyde dehydorgenase responsible for oxidizing a wide variety of aliphatic aldehydes to the corresponding carboxylic acids. It is highly expressed in the dorsal retina, ventral midbrain and HSCs. Since ALDH1 is expressed in the A9 dopaminergic neuronal group, it may have implications for Parkinson's disease research. ALDH1 expression has also been detected in chemotherapy resistant breast cancer stem cells.

ALDH1 (EP1933Y) Antibody
NB110-55451

Immuno-histochemical analysis of human liver using NB110-55451.

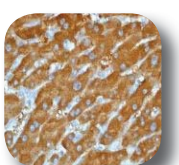
Species: Hu, Mu, Rt
Applications: IHC, IP, WB, ICC, IHC-P

ALDH1 Antibody
NB100-2563

Western blot analysis of ALDH1A1 (Internal) Antibody [NB100-2563] (1ug/ml) staining of human liver lysate

Species: Hu
Applications: IF, WB

ALDH1 Antibody
NB100-79892



Immuno-histochemical analysis of liver using NB100-79892.

Species: Hu
Applications: IHC, IP, WB, ICC

IN THE NEWS

1. [Nestin NB300-266] Gangemi RMR, Griffero F, Marubbi D, et al. SOX2 Silencing in Glioblastoma Tumor-Initiating Cells Causes Stop of Proliferation and Loss of Tumorigenicity. Stem Cells 2009; 27(1):40-48.

2. [RECA-1 NB100-64647] Sambuceti G, Morbelli S, Vanella L, et al. Diabetes Impairs the Vascular Recruitment of Normal Stem Cells by Oxidant Damage, Reversed by Increases in pAMPK, Heme Oxygenase-1, and Adiponectin. Stem Cells. 2009; 27(2):399-407.

3. [Ki67 NB110-89717] Krishnamachary B, Glunde K, Wildes F, et al. Noninvasive Detection of Lentiviral-Mediated Choline Kinase Targeting in a Human Breast Cancer Xenograft. Cancer Res. 2009; 69(8):3464-71.

4. [POU5F1 H00005460-M05] McCord AM, Jamal M, Shankavarum UT, et al. Physiologic Oxygen Concentration Enhances the Stem-Like Properties of CD133+ Human Glioblastoma Cells In vitro. Mol Cancer Res. 2009; 7(4):489-97.

5. [NANOG H00079923-M08] Vaags AK, Rosic-Kablar S, Gartley CJ, et al. Derivation and Characterization of Canine Embryonic Stem Cell Lines with In Vitro and In Vivo Differentiation Potential. Stem Cells. 2009; 27(2):329-40.

6. [CD31 NB100-2284] Patten PEM, Buggins AGS, Richards J, et al. CD38 expression in chronic lymphocytic leukemia is regulated by the tumor microenvironment. Blood. May 15, 2008; 111(10):5173-81.

7. [VEGFR2 NB100-627] Puglisi F, Puppin C, Pegolo E, et al. Expression of periostin in human breast cancer. J Clin Pathol. 2008; 61(4):494-8.

8. [VEGFR1 NB100-527] Malgorzata M. et al. Positive Feedback between Vascular Endothelial Growth Factor-A and Autotaxin in Ovarian Cancer Cells. Mol. Cancer Res. 2008; 6(3):352-63.

9. [Vimentin NB300-223] Johnstone, C. N., et al. Parvin-beta; Inhibits Breast Cancer Tumorigenicity and Promotes CDK9-Mediated Peroxisome Proliferator-Activated Receptor Gamma 1 Phosphorylation. Mol. Cell. Biol. 2008¡28(2):687-704.

10. [HPi1 NBP1-18872] Dorrell, et. al. Isolation of major pancreatic cell types and long-term culture-initiating cells using novel human surface markers. Stem Cell Res. 2008;1(3):183-94.

11. [VEGFR2 NB100-2382] Hu-Lowe DD, Zou HY, Grazzini ML, et al. Nonclinical Antiangiogenesis and Antitumor Activities of Axitinib (AG-013736), an Oral, Potent, and Selective Inhibitor of Vascular Endothelial Growth Factor Receptor Tyrosine Kinases 1, 2, 3. Clin. Cancer Res. 2008; 14(22):7272-7283.

12. [DGCR8 knockout ESCs NBA1-19349] Wang, et al. DGCR8 is essential for microRNA biogenesis and silencing of embryonic stem cell self-renewal. Nat. Genet. 2007; 39(3):380-5.

13. [GFAP NB300-142] Maezawa, I., et al. Neurotoxicity from innate immune response is greatest with targeted replcament of e4 allele of apolipoprotein E gene and is mediated by micro glial p38MAPK. FASEB J. 2006; 20(6):797-9.

ORDERING

U.S. ORDERING

Phone: 303.730.1950
888.506.6887

Fax: 303.730.1966

Email: orders@novusbio.com

Internet: www.novusbio.com

EUROPEAN ORDERING

Phone: +44 (0) 1223 426001
Fax: +44 (0) 871 971 1635
Email: europe@novusbio.com
Web: www.novusbio.com

TECHNICAL SUPPORT

Phone: 303.730.1950
888.506.6887
Email: technical@novusbio.com
Live Chat featured on our website, www.novusbio.com