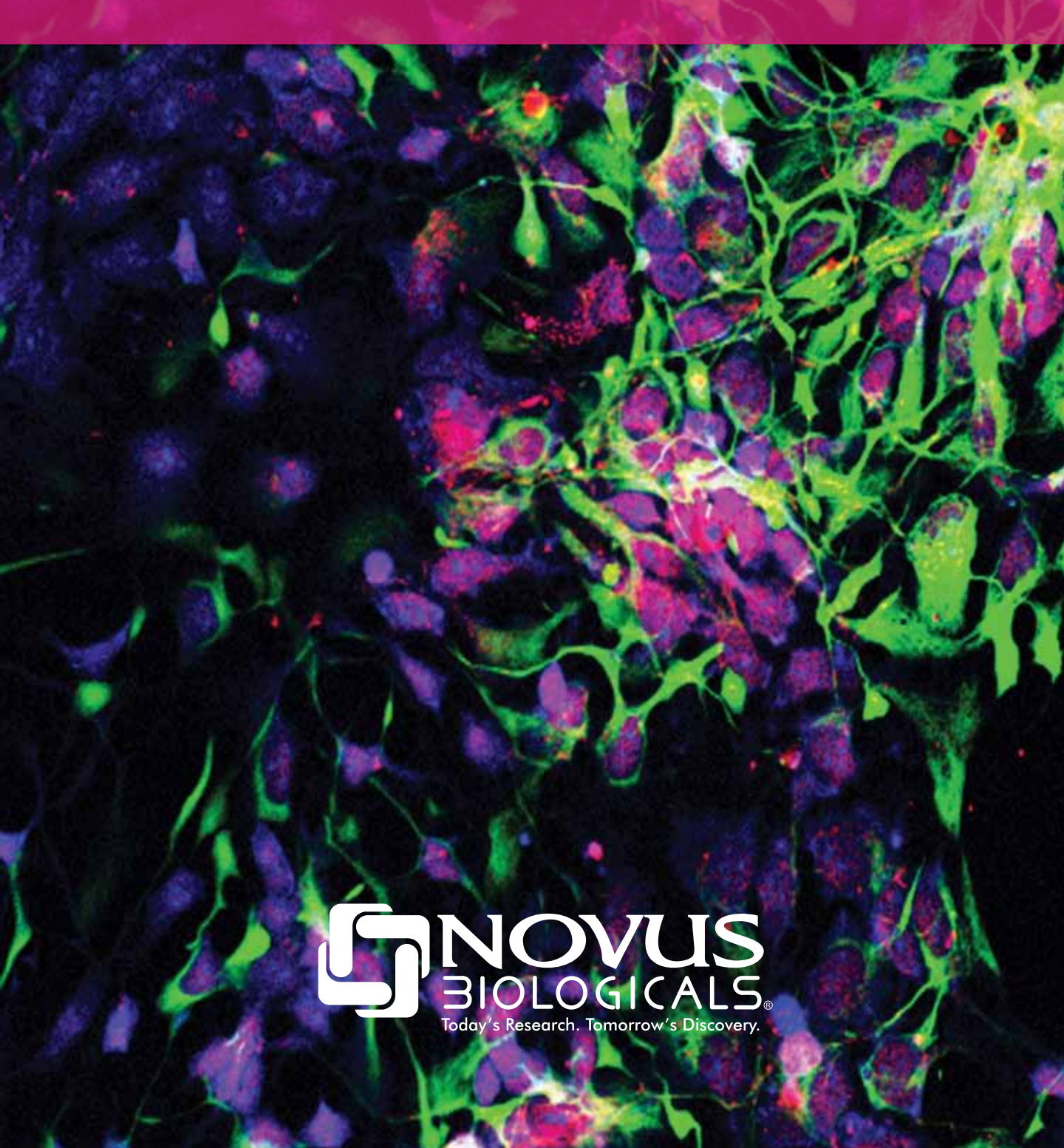


CATALOG OF ANTIBODIES FOR

STEM CELLS



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Today's Research. Tomorrow's Discovery.

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Application Key

- B/N** - Blocking/Neutralizing
- ELISA** - Enzyme-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
- RNAi** - RNAi Knockdown
- WB** - Western Blot

Reactivity Key

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



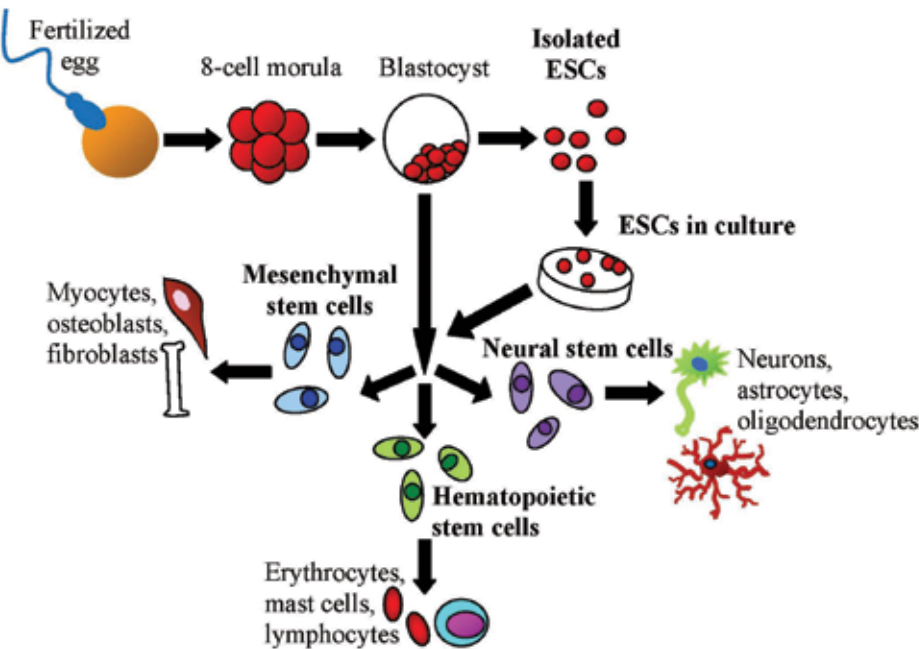
Cover Image: Motor neuron progenitors (green) derived from human embryonic stem cells. This photo was taken by Sharyn Rossi in the lab of Hans Keirstead at the University of California, Irvine.

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 of derivation. Specific 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 oncogenic expression, thus increasing the risk of using them 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 the difficulties of eradicating the disease.

Stem cells have implications for the treatment of a wide range of human diseases. Specifically, control of stem cell differentiation would allow for the generation of renewable pools of replacement cells and tissues. These could be used for the treatment of various degenerative diseases and injuries including: Alzheimer's and Parkinson's disease, spinal cord injuries, 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 stem cells.



NovActive™ Proteins

Looking for active proteins to add directly to your cell cultures? Look no further! Our NovActive™ Proteins are biologically active and cell culture-ready proteins, ideal for stem cell research.

The NovActive™ Advantage

- Fully Biologically Active
- Cell Culture-Ready
- Affordable
- Biorisk Free
- Post-Translationally Modified
- Useful for Blocking/Neutralizing
- Useful for Western Blot
- Useful for Functional Assays

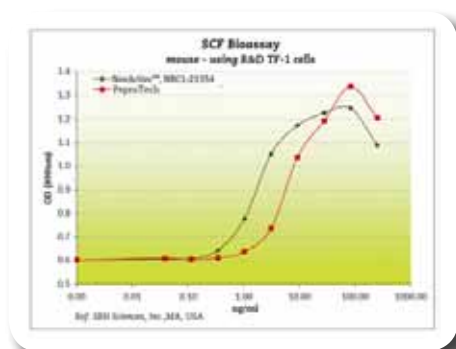
There are two types of NovActive™ Proteins, based on their production method:

Barley Expressed Proteins - post-translationally modified and completely biorisk free (GRAS certified as endotoxin-free, antibiotic-free and serum-free). Also low in proteolytic activity.

Human Expressed Proteins - tested and proven to have all human wild-type post-translational modifications, identical to the *in vivo* human form!

Catalog#	Product Name	Expression System	Applications	Species
NBP1-46044	CD40 Protein	Human	B/N, Func, WB	Hu
NBP1-46164	c-Kit Protein	Human	B/N, Func, WB	Hu
NBP1-46046	Cripto1 Protein	Human	B/N, Func, WB	Hu
NBC1-21335	FGF-2 Protein	Barley	B/N, Func, WB	Hu
NBP1-46050	FGFR1 Protein	Human	B/N, Func, WB	Hu
NBC1-21336	Flt3 ligand Protein	Barley	B/N, Func, WB	Hu
NBC1-21344	IL4 Protein	Barley	B/N, Func, WB	Hu
NBC1-21346	IL6 Protein	Barley	B/N, Func, WB	Hu
NBC1-21355	IL25 Protein	Barley	B/N, Func, WB	Hu
NBC1-21351	LIF Protein	Barley	B/N, Func, WB	Mu
NBC1-21353	NRG1 Protein	Barley	B/N, Func, WB	Hu
NBP1-46163	SCF Protein	Human	B/N, Func, WB	Hu
NBC1-21354	SCF Protein	Barley	B/N, Func, WB	Mu
NBC1-21356	TNF alpha Protein	Barley	B/N, Func, WB	Hu
NBC1-21359	VEGF 165 Protein	Barley	B/N, Func, WB	Hu

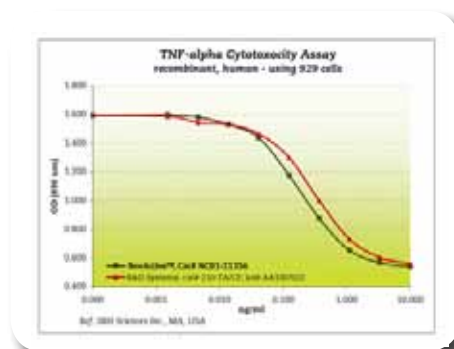
Browse more NovActive™ Proteins at novusbio.com/product-type/peptides-and-proteins



SCF Protein • NBC1-21354



CD40 Protein • NBP1-46044



TNF alpha Protein • NBC1-21356

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 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 ESCs
NBA1-19349

v6.5 Mouse ESCs
NBP1-41162

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. The v6.5 cell line is the parent strain from which the DGCR8 cell line is derived.

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 mice, 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	FACS, IP, WB	Mu, Hu
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
NB100-59737	Nanog	Goat	Polyclonal	ELISA, IHC, WB	Hu
NBP1-04320	Nanog (5A10)	Mouse	Monoclonal	ELISA, IHC, WB	Hu
29290002	Nanog	Rabbit	Polyclonal	ELISA, IHC	Hu
NBP1-18703	NanogP8	Rabbit	Polyclonal	IHC, WB	Hu
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
NB100-74467	Nanog	Rabbit	Polyclonal	WB	Hu

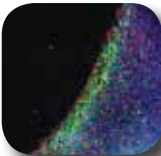
Nanog Antibody NB100-58842



Species: Mu
Applications: IHC

Immunohistochemical analysis of mouse teratoma using NB100-58842.

Nanog Antibody NB110-40660



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

Immunofluorescent staining of human keratinocyte stem cells using NB110-40660.

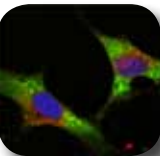
Nanog Antibody NB100-588



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

Flow cytometric analysis of NTERA-2 cells using NB100-588.

Lin28 Antibody NBP1-28865



Species: Hu
Applications: ELISA, IF, WB

Immunofluorescent analysis of NTERA-2 cells NBP1-28865 (green).

Lin28*

Other Research Area: Cancer Stem Cells

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

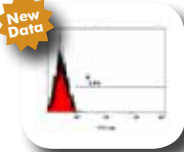
OCT4*

Aliases: OCT3, POU5F1

The homeodomain transcription factor OCT4, expressed in ESCs and germ cells, is strongly implicated in the maintenance of ESC pluripotency. In mouse embryos, the absence of OCT4 results in a failure to form the ICM causing 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	FACS, ICC, IF, WB	Bv, Fe, 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	PEP-ELISA, WB	Hu
NB110-90606	OCT4 (NRG1.1)	Mouse	Monoclonal	IHC-P	Hu
NB100-78528	OCT4	Rabbit	Polyclonal	IF	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
NB100-91901	OCT4	Rabbit	Polyclonal	ELISA, IHC-P, WB	Hu, Mu, Rt

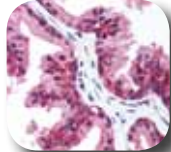
OCT4 Antibody
NB100-2379



Species: Fe, Hu, Mu, Bv, Po, Mk
Applications: FACS, ICC, IF, WB

Flow cytometric analysis of NTERA-2 cells using NB100-2379.

OCT4 Antibody
NBP1-02871



Species: Hu
Applications: WB, IHC-P

Immunohistochemical analysis of human prostate using NBP1-02871.

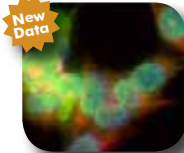
SOX2*

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. Once bound, SOX proteins bend the DNA helix, unzipping the double helix and facilitating interaction of 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	FACS, IF, WB, ICC, 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
NB100-78514	SOX2	Rabbit	Polyclonal	IF, WB	Hu
NBP1-33766	SOX2	Rabbit	Polyclonal	IF, IHC-P, WB	Hu
NBP1-40712	SOX2 (EPR3131)	Rabbit	Monoclonal	ICC, IHC, WB	Hu
29930002	SOX2	Rabbit	Polyclonal	ELISA	Hu
NBP1-40720	SOX2 (EPR3130)	Rabbit	Monoclonal	IHC, IP, WB	Hu

SOX2 Antibody
NB110-37235



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

Immunocytochemical analysis of HeLa cells using NB110-37235.

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.

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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).

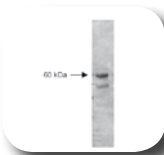
Alkaline Phosphatase

Aliases: ALP, PLAP

At high pH, alkaline phosphatase, a hydrolase enzyme, is responsible for the dephosphorylation of various molecules – DNA, RNA, and proteins. Most mammals have four 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
NB100-66384	Alkaline Phosphatase, Bone/Placental/Intestinal (BGN/03/661)	Mouse	Monoclonal	ELISA, WB	Hu
NB600-588	Alkaline Phosphatase, Intestinal	Rabbit	Polyclonal	ELISA, WB	Hu
NB120-7328	Alkaline Phosphatase, Intestinal	Goat	Polyclonal	ELISA, IP, WB	Bv
NB120-7329	Alkaline Phosphatase, Intestinal, [HRP]	Goat	Polyclonal	ELISA, IHC-Fr, IF, WB	Bv
NB120-7331	Alkaline Phosphatase, Intestinal, [HRP]	Sheep	Polyclonal	ELISA, IHC-Fr, IF, WB	Bv
NB120-7324	Alkaline Phosphatase, Intestinal, [HRP]	Rabbit	Polyclonal	ELISA, IHC-Fr, IF, WB	Hu
NB120-7323	Alkaline Phosphatase, Intestinal, [Biotin]	Rabbit	Polyclonal	ELISA, IHC-Fr, IF, WB	Hu
NB120-7325	Alkaline Phosphatase, Intestinal	Rabbit	Polyclonal	ELISA, IP	Bv
NB120-7326	Alkaline Phosphatase, Intestinal, [Biotin]	Rabbit	Polyclonal	ELISA, IHC, WB	Bv
NB120-7327	Alkaline Phosphatase, Intestinal, [HRP]	Rabbit	Polyclonal	ELISA, IF, IHC-Fr, WB	Bv
NB100-2637	Alkaline Phosphatase, Intestinal (AP1B9)	Mouse	Monoclonal	IHC	Bv
NB100-80825	Alkaline Phosphatase, Placental	Rabbit	Polyclonal	IHC-P	Hu
NB100-62327	Alkaline Phosphatase, Placental/Bone	Sheep	Polyclonal	ELISA	Hu
NB500-532	Alkaline Phosphatase, Placental (H7E8)	Mouse	Monoclonal	ELISA, IHC-Fr, WB	Hu
NB110-3638	Alkaline Phosphatase, Placental (8B6)	Mouse	Monoclonal	ELISA, IF, IHC-P, IHC-Fr, RI	Hu
NB100-2790	Alkaline Phosphatase, Placental (HD3F6)	Mouse	Monoclonal	ELISA, IHC-Fr, RIA	Hu
NB120-354	Alkaline Phosphatase, Tissue Non-Specific	Rabbit	Polyclonal	ELISA, IF, IP, WB	Ba
NB120-7319	Alkaline Phosphatase, Tissue Non-Specific, [HRP]	Rabbit	Polyclonal	ELISA, IF, IHC-Fr, WB	Ba
NB100-62324	Alkaline Phosphatase, Tissue Non-Specific (BGN/03/66KF42)	Mouse	Monoclonal	ELISA	Hu
NB600-540	Alkaline Phosphatase, Tissue Non-Specific (TRA-2-49)	Mouse	Monoclonal	FACS, IP	Hu, Po, Rb, Fe

Alkaline Phosphatase Intestinal, Antibody NB600-588



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

Species: Hu Applications: ELISA, WB

Alkaline Phosphatase, Placental (SP15) Antibody NB110-57422



Immunohistochemical analysis of human seminoma using NB110-57422.

Species: Hu Applications: IHC

Cripto1 Antibody NB100-1597



Species: Hu Applications: FACS, WB

Western blot analysis of Cripto in MDA-MB231 lysates using NB100-1597.

Cripto1 Antibody NB100-1598



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

Immunocytochemical analysis of HeLa cells using NB100-1598.



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

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.

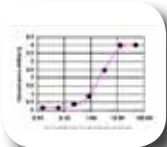
CD30 (2SH12-5F) [FITC] Antibody NBP1-27938



Species: Mu Applications: FACS, In vitro

Flow cytometric analysis of the YAC-1 cell line stained using NBP1-27938.

CD30 Antibody 34900002



Species: Hu Applications: ELISA

ELISA of CD30 antibody diluted onto an ELISA plate coated with a recombinant protein fragment.

CD30 Antibody NBP1-04752



Species: Hu Applications: WB

Western blot analysis of E. coli-derived fusion protein using NBP1-04752.

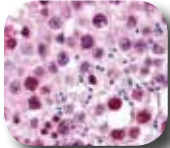
FOXD3

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.

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.

FOXD3 Antibody
NB100-92410



Species: Hu, Mu
Applications: ELISA, IHC-P, 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 NB100-78525.

Nucleostemin

Alias: GNL3

Other Research Area: Neural Stem Cells

Nucleostemin 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.

Nucleostemin Antibody
NB100-2896



Species: Hu, Mu
Applications: IHC

Immunohistochemical 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.

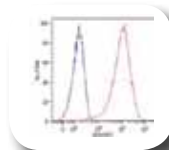
CD9 (72F6) Antibody
NB110-41534



Immunohistochemical analysis of human tonsil using NB110-41534.

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

CD9 (MEM-61) Antibody
NB500-327



Species: Hu
Applications: FACS, IP, WB

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

CD9 Antibody
NBP1-00748



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

Western blot analysis of rat heart using NBP1-00748.

MELK Antibody
NB100-782



Western blot analysis of Jurkat lysate using NB100-782.

Species: Hu
Applications: PEP-ELISA, WB

MELK

Alias: Protein Kinase PK38

Other Research Areas: Neural Stem Cells, Cancer Stem Cells

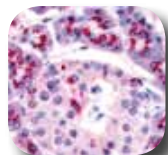
Maternal embryonic leucine zipper kinase (MELK) is implicated in stem cell renewal, cell cycle progression and pre-mRNA splicing. MELK expression has been identified in multipotent neural progenitor cells. It may play a role in embryonic and postnatal forebrain development.

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.

Telomerase Reverse Transcriptase Antibody NB100-317



Immunohistochemical analysis of normal pancreas using NB100-317.

Species: Hu

Applications: FACS, ICC, IF, IHC-P, WB

Telomerase Reverse Transcriptase Antibody NB100-297



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

Species: Hu

Applications: FACS, ICC, IF, WB

Telomerase Reverse Transcriptase Antibody SuperNovus Pack NB100-913

Includes:

NB100-317 and NB100-297

TRA-1-60 and TRA-1-81

The TRA-1-60 and TRA-1-81 antigens are expressed on the surface of human ESCs, teratocarcinoma, and embryonic germ cells. Recently, this antigen has been proposed to be a form of the protein podocalyxin (Stem Cells 25, 723-30).

TRA-1-60 Antibody NB100-730



Species: Hu

Applications: FACS, ICC, IF, IHC, IP, WB

TRA-1-81 Antibody NB100-1833



Species: Hu

Applications: FACS, IF, IP, IHC, WB

Flow cytometric analysis of NTERA-2 cells using NB100-1833.

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 and mouse ESCs or neural plate cells. 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.

PLZF

Alias: ZBTB16

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.

PLZF (3A7) Antibody H00007704-M01



ELISA analysis of recombinant GST tagged using ZBTB16 using H00007704-M01.

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-M01A



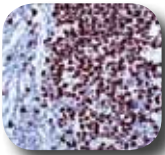
Western blot analysis against immunogen using H00005325-M01A .

Species: Hu
Applications: ELISA, WB

Ki67

Ki67 is expressed by proliferating cells in all active cell cycle phases (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.

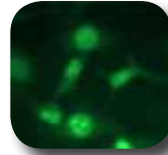
Ki67 (SP6) Antibody NB110-57147



Immunohistochemical analysis of human tonsil stained using NB110-57147.

Species: Hu, Rt
Applications: IHC

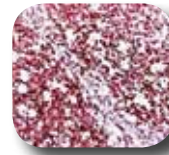
Ki67 Antibody NB110-89717



Immunocytochemical analysis of HeLa cells using NB110-89717.

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

Ki67 Antibody NB500-170



Immunohistochemical analysis of human tonsil using NB500-170.

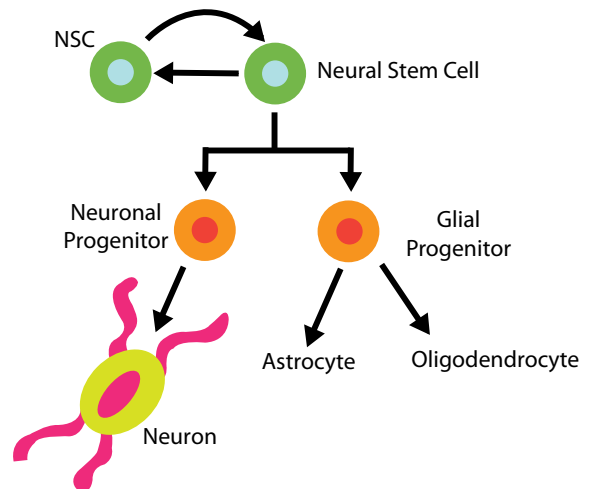
Species: Hu, Mu, Po
Applications: IF, ICC, IHC-Fr, IHC-P

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



Immunohistochemical analysis of human esophagus using NB100-1420.

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

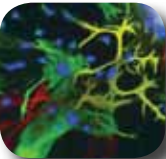
Vimentin

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, IF, IHC, WB	Hu, Mu, Rt
NBP1-02165	Vimentin	Chicken	Polyclonal	IHC, WB, ICC	
NBP1-19480	Vimentin	Rabbit	Polyclonal	IHC, IF, WB	Hu
NB500-563	Vimentin (VI-10)	Mouse	Monoclonal	IP, WB, ICC	Ch, Hu, Mu, Po, Rt
NB110-57646	Vimentin (EP1069Y) [phospho Ser38]	Rabbit	Monoclonal	WB	Hu, Mu, Rt
NB110-57647	Vimentin (EP1070Y) [phospho Ser72]	Rabbit	Monoclonal	IP, WB	Hu, Mu, Rt
NB200-621	Vimentin (V9)	Mouse	Monoclonal	WB, IHC-P, IHC-Fr	Ca, Ch, Hu, Po, 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, IHC-P, IF	Hu, Ch, Po, Rt
NBP1-40730	Vimentin (EPR3776)	Rabbit	Monoclonal	FACS, ICC, IHC, WB	Hu, Mu, Rt
NB300-223	Vimentin	Chicken	Polyclonal	IF, IHC-P, WB	Hu, Mu, Rt
NB110-57645	Vimentin (SP20)	Rabbit	Monoclonal	IHC-P, IP, WB	Hu, Mu, Rt

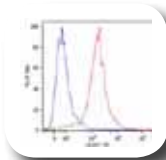
Vimentin Antibody NB300-223



Immunofluorescent staining of mixed neuron/glia cultures 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.

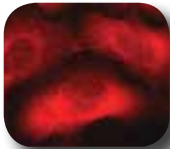
Species: Hu
Applications: ELISA, IF, WB, ICC

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



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

Nestin Antibody NB300-265



Species: Hu
Applications: WB

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

Featured Nestin Antibodies

Also available conjugated to:

- Biotin
- DyLight 488
- DyLight 549
- DyLight 649
- HRP


Nestin Antibody NB100-1604



Species: Mu
Applications: IHC, WB

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


Nestin (196908) Antibody NB100-1662



Species: Hu
Applications: ICC

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


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



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

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

NRSF Antibody NB100-757



Species: Hu
Applications: IP, WB

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

NRSF

Alias: REST

Neuron Restrictive Silence Factor (NRSF) is a transcriptional silencer that acts as a repressor of neuronal genes in non-neuronal tissues. NRSF 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 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

GFAP Antibody
NBP1-05197



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

Species: Ch, Rt
Applications: IF, WB

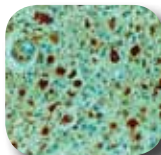
GFAP Antibody
NBP1-05198



Immuno-fluorescent staining of mixed neuron/glial cultures using NBP1-05198 (red).

Species: Rt
Applications: WB, ICC

GFAP Antibody
NB120-16997



Immunohistochemical analysis of human astrocytoma stained using NB120-16997.

Species: Bv, Ch, Ha, Hu, Mu, Mk, Rt, GP, Fe, Sh
Applications: IHC-P

Catalog #	Product	Host	Type	Application	Species
NB110-93480	GFAP	Rabbit	Polyclonal	IF, WB	Hu, Mu, Rt
NB110-93481	GFAP	Chicken	Polyclonal	IF, WB	Hu, Mu, Rt
NB100-53809	GFAP	Goat	Polyclonal	PEP-ELISA, WB	Mu
NB600-560	GFAP	Rabbit	Polyclonal	IHC	Bv, Ch, Ha, Hu, Mu, Mk, Rt, GP, Fe, Sh
NB110-58368	GFAP	Chicken	Polyclonal	IHC, ICC	Rt
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	Hu, Po
NB500-315	GFAP (GF-01)	Mouse	Monoclonal	IP, WB, ICC, IHC-P, IHC-Fr	Ca, Hu, Po
NB300-141	GFAP	Rabbit	Polyclonal	ICC, IF, IHC-Fr, IHC-P, IHC, WB	Bv, Fe, Hu, Mu, Po, Rt
NB300-142	GFAP (2A5)	Mouse	Monoclonal	IF, IHC-Fr, IHC-P, WB	Bv, Ch, Hu, Ma, Mk, Mu, Po, Rt
NB110-57003	GFAP (EP672Y)	Rabbit	Monoclonal	IHC, IP, WB, ICC	Hu, Rt
NB120-10062	GFAP (GF5)	Mouse	Monoclonal	ELISA, IHC, IF, WB	Hu
H00002670-M01	GFAP (3H2)	Mouse	Monoclonal	ELISA, WB	Hu

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: Hu, Mu, Rt
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.

SOX9 (3C10) Antibody
H00006662-M02



Immunofluorescent staining of HepG2 cells using H00006662-M02.

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

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

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.

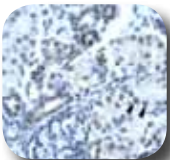
Musashi-1 (Msi1) Antibody NB100-1759



Immunofluorescent staining of human neural rosettes using NB100-1759 (green).

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

Pax2 Antibody NB600-1455



Immunohistochemical 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



Immunofluorescent 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, RNAi, WB

Islet 1

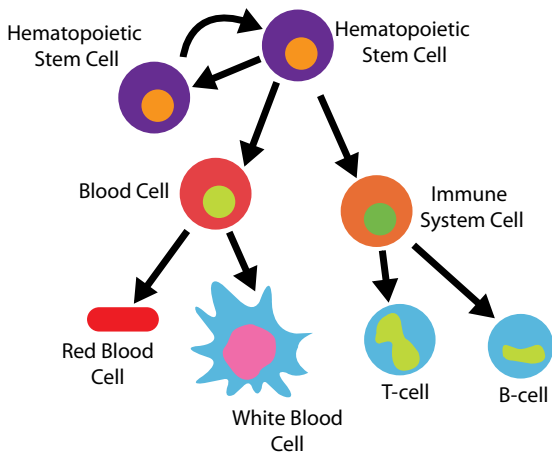
Alias: ISL1

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, and 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-P, 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



Immunohistochemical analysis of normal human placenta tissue using NB110-93511.

Species: Hu
Applications: FACS, 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
NBP1-18780	c-Kit	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Po
NBP1-19652	c-Kit	Rabbit	Polyclonal	IHC-P, WB	Hu, Mu
H00003815-D01P	c-Kit	Rabbit	Polyclonal	ELISA, WB	Hu
NB100-81864	c-Kit [phospho Tyr721]	Rabbit	Polyclonal	WB	Hu, Mu, Rt
NBP1-04960	c-Kit [phospho Tyr936]	Rabbit	Polyclonal	IHC	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), [Biotin]	Mouse	Monoclonal	FACS	Hu, Bv
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
NB120-956	c-Kit	Rabbit	Polyclonal	IHC-Fr, IHC-P	Hu
H00003815-M09	c-Kit (1D3)	Mouse	Monoclonal	ELISA, WB	Hu
NB120-956	c-Kit	Rabbit	Polyclonal	IHC-Fr, IHC-P	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
NB100-77477	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
NBP1-19865	c-Kit	Rabbit	Polyclonal	IF, WB	Hu, Mu, Rt
NB110-55526	c-Kit	Rabbit	Polyclonal	IHC-P	Hu

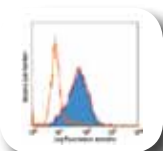
c-Kit Antibody NB120-956



Immunohistochemical analysis of human stromal tumor stained using NB120-956.

Species: Hu
Applications: IHC

c-Kit (104D2) [Biotin] Antibody NB100-77930



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

Species: Hu, Bv
Applications: FACS

c-Kit (5F6) Antibody H00003815-M05



Western blot analysis of transfected 293T cell line (lane 1) and non-transfected lysate (lane 2) using H00003815-M05.

Species: Hu
Applications: ELISA, WB

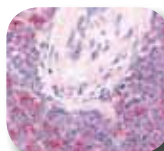
c-Kit (YR145) Antibody NB110-55636



Immunohistochemical analysis of human stomach adenocarcinoma using NB110-55636.

Species: Hu
Applications: IHC, WB

c-Kit Antibody NB110-55526



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

Species: Hu
Applications: IHC-P

c-kit [Tyr936] Antibody NBP1-04960



Immunohistochemical analysis of human breast carcinoma tissue using NBP1-04960.

Species: Hu
Applications: IHC

CD90/Thy1

Other Research Area: MSCs

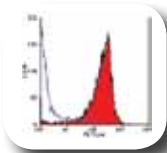
Thy1 is a 25-35 kDa glycoposphatidylinositol (GPI)-anchored membrane glycoprotein. Though Thy1 expression varies by species, the protein is generally expressed in neurons, mesenchymal stem cells, hematopoietic stem cells, thymocytes and peripheral T-cells. Though the function of Thy1 is still unclear, 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	CD90/Thy1	Mouse	Polyclonal	ELISA, WB	Hu
H00007070-B01	CD90/Thy1	Mouse	Polyclonal	WB, ELISA	Hu
NBP1-06688	CD90/Thy1 (AP-MAB0861)	Rat	Monoclonal	FACS	Mu
NB600-663	CD90/Thy1 (F15-42-1)	Mouse	Monoclonal	FACS, IHC-Fr, IP	Hu, Mk
NB100-64092	CD90/Thy1 (F15-42-1), [Biotin]	Mouse	Monoclonal	FACS	Hu, Mk
NB600-725	CD90/Thy1 (F15-42-1), [FITC]	Mouse	Monoclonal	FACS	Hu, Mk
NB100-64094	CD90/Thy1 (F15-42-1), [PE]	Mouse	Monoclonal	FACS	Hu, Mk
NB100-64096	CD90/Thy1 (OX-7), [Biotin]	Mouse	Monoclonal	FACS	Mu, Rt, Rb, Gp
NB100-64099	CD90/Thy1 (OX-7), [FITC]	Mouse	Monoclonal	FACS	Mu, Rt, Rb, Gp
NB100-64100	CD90/Thy1 (OX-7), [PE]	Mouse	Monoclonal	FACS	Mu, Rt, Rb, Gp
NB100-2681	CD90/Thy1 (aThy-1A1)	Mouse	Monoclonal	FACS, IP	Hu
NB100-64330	CD90/Thy1 (F7D5)	Mouse	Monoclonal	FACS, IHC, IHC-Fr	Mu
NB100-64331	CD90/Thy1 (T11D7e)	Mouse	Monoclonal	FACS	Mu
NB100-65613	CD90/Thy1 (FF-10)	Rat	Monoclonal	FACS, IP, WB, IHC-Fr	Mu
NB100-65931	CD90/Thy1 (YKIX337.217)	Rat	Monoclonal	FACS, IP	Ca
H00007070-M01	CD90/CD90/Thy1 (3F9)	Mouse	Monoclonal	ELISA, WB	Hu
NB200-528	CD90/Thy1 (3H1751)	Mouse	Monoclonal	FACS, IHC, IP, WB	Mu, Rt
NB200-529	CD90/Thy1 (2Q1792)	Mouse	Monoclonal	FACS, ELISA, IHC	Mu, Rt
NB200-530	CD90/Thy1 (6A341)	Mouse	Monoclonal	FACS	Mu, Rt
NBP1-28031	CD90/Thy1 (G7)	Rat	Monoclonal	FACS, IHC-Fr, IHC-P, In vitro	Mu
NB100-65543	CD90/Thy1 (OX-7)	Mouse	Monoclonal	FACS, IHC-Fr, IP, WB	Gp, Mu, Rb, Rt
NBP1-28033	CD90/Thy1 (OX-7), [Biotin]	Rat	Monoclonal	FACS, IHC-Fr, IHC-P, In vitro	Mu
29330002	CD90/Thy1	Rabbit	Polyclonal	ELISA	Hu
NBP1-44877	CD90/Thy1 (1aG4/C5)	Mouse	Monoclonal	FACS, Func, WB	Mu

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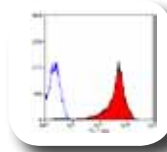
CD90/Thy1 (OX-7) Antibody
NB100-65543



Flow cytometric staining of rat thymus using NB100-65543.

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

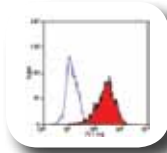
CD90/Thy1 (F7D5) Antibody
NB100-64330



Flow cytometric staining of mouse thymus cells using NB100-64330.

Species: Mu
Applications: FACS, IHC-Fr

CD90/Thy1 (F15-42-1) [PE] 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	Hu
H00004254-M11	SCF (2E10)	Mouse	Monoclonal	ELISA	Hu
H00004254-M02	SCF (3C7)	Mouse	Monoclonal	ELISA	Hu
H00004254-M10	SCF (2H8)	Mouse	Monoclonal	ELISA, WB	Hu

SCF (EP665Y) Antibody
NB110-57479



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

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.

VEGF Receptor 2

Aliases: VEGFR2, FLK1, Ly73, KDR

VEGF receptor 2 (VEGFR2) is a member of the 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 [phospho Tyr1092]	Rabbit	Polyclonal	ELISA, IHC-P, WB	Hu, Mu, Rt
NBP1-18639	VEGFR2	Rabbit	Polyclonal	ELISA, IP, WB, B/N	Hu
NB100-92005	VEGFR2	Rabbit	Polyclonal	ELISA, IHC-P	Hu, Mu, Rt
NBP1-19948	VEGFR2 [phospho Tyr1214]	Rabbit	Polyclonal	IHC-P	Hu, Mu, Rt
NB100-82258	VEGFR2	Rabbit	Polyclonal	IHC	Hu, Mu, Rt
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 or 260.4)	Mouse	Monoclonal	WB	Hu
NB120-10975	VEGFR2 (KDR-2 KDR-2 or 260.4), [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	Hu, Rt
NB600-1009	VEGFR2 (EWC)	Mouse	Monoclonal	FACS, ELISA, WB	Hu
NBP1-18644	VEGFR2 (#3)	Mouse	Monoclonal	ELISA, IP, WB	Hu
NBP1-18645	VEGFR2 (#3), [Biotin]	Mouse	Monoclonal	ELISA, IP, WB, B/N	Hu
NB110-57644	VEGFR2 (EP105Y)	Rabbit	Monoclonal	WB	Hu
NB110-61017	VEGFR2 (RM0002-7A23)	Rat	Monoclonal	WB, IHC-Fr	Mu
NBP1-18648	VEGFR2	Rat	Monoclonal	ELISA, IP, WB	Hu
NB100-2382	VEGFR2	Rabbit	Polyclonal	FACS, WB	Hu
NB100-529	VEGFR2	Rabbit	Polyclonal	WB	Hu
NB100-530	VEGFR2	Rabbit	Polyclonal	WB	Hu
NBP1-19949	VEGFR2 [phospho Tyr951]	Rabbit	Polyclonal	IHC-P, WB	Hu, Mu
NB100-92661	VEGFR2 [phospho Tyr1092]	Rabbit	Polyclonal	ELISA, IHC-P, WB	Hu, Mu, Rt
NBP1-19479	VEGFR2/3	Rabbit	Polyclonal	IF, IHC-P	Hu, Mu, Rt

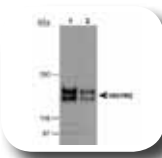
VEGF Receptor 2 [Tyr1175] Antibody NBP1-19947



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

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

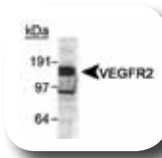
VEGF Receptor 2 Antibody NB100-627



Species: Hu, Mu
Applications: IP, WB

Western blot analysis of VEGFR2 in CSF-1/VEGFR2 transfected lysates using NB100-627.

VEGF Receptor 2 Antibody NB100-2382



Species: Hu
Applications: FACS, WB

Western blot analysis of CSF-IR/VEGFR2 chimera transfection lysate using NB100-2382.

PODXL

Aliases: Podocalyxin-like, PC, PCLP

Podocalyxin (PODXL) is a CD34 family member expressed by podocytes, vascular endothelium, mesothelium, and a subset of hematopoietic progenitors. It is the major sialoprotein in the glycocalyx of glomerular podocytes. The physiologic role of PODXL in leukemic blasts is unknown; however, it is thought of as a candidate prostate cancer tumor aggressiveness gene. PODXL appears to complement CD34 as a useful cell surface marker for hemangioblasts, the common precursors of hematopoietic and endothelial cells.

PODXL Antibody NB110-41503



Species: Hu
Applications: FACS, WB

Western blot analysis of podocalyxin in human lung lysate using NB110-41503.

NCAM

Alias: CD56

Neural cell adhesion molecule (NCAM) 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	NCAM		Mouse	Polyclonal	ELISA, WB
H00004684-D01P	NCAM		Rabbit	Polyclonal	ELISA, WB
NB100-77797	NCAM (MEM-188)		Mouse	Monoclonal	FACS, IP, WB, IHC-P
R-999-100	NCAM		Rabbit	Polyclonal	WB
NBP1-28396	NCAM (MEM 188), [Biotin]		Mouse	Monoclonal	FACS
NB100-63478	CD16 + CD32 (LNK16/MEM-188) [FITC]		Mouse	Monoclonal	FACS
NB100-78016	NCAM (HCD56)		Mouse	Monoclonal	FACS
NB100-2730	NCAM (UJ13A)		Mouse	Monoclonal	IHC, WB
NB100-2718	NCAM (ERIC-1)		Mouse	Monoclonal	IHC, IP
NB100-63939	NCAM (C5.9), [PE]		Mouse	Monoclonal	FACS
H00004684-M01	NCAM (3G12)		Mouse	Monoclonal	ELISA, WB
32640002	NCAM		Rabbit	Polyclonal	ELISA

NCAM (MEM-188)
[PE] Antibody
NB120-8079



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

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

NCAM1 (EPR2566)
Antibody
NBP1-40716



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

Immuno-
histochemical
analysis of human
glioma using
NBP1-40716.

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.

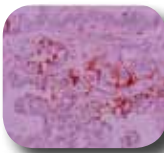
CD34 (MEC 14.7) Antibody
NB600-1071



Species: Mu
Applications: FACS, ICC/IF, IHC, WB

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

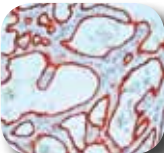
CD34 Antibody
NBP1-04751



Species: Hu
Applications: IHC, WB

Immuno-
histochemical
analysis of cervical
cancer, papillary
adenocarcinoma
using NBP1-04751.

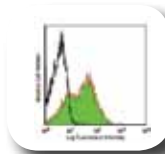
CD34 (QBEND-10) Antibody
NB100-1934



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

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

Ly-6A/E (D7) Antibody
NB100-77513



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

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

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 Antibody
H00003574-B01



Species: Hu
Applications: ELISA, WB

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

IL-7

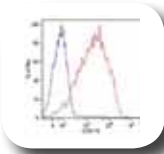
Interleukin7 (IL-7) is a lymphoid cell growth factor secreted by the stromal cells of the bone marrow and thymus. IL-7 stimulates the differentiation of HSCs into lymphoid progenitor cells and also the proliferation of cells of the lymphoid lineage. In cells of the myeloid lineage, IL-7 upregulates production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

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.

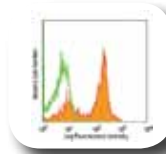
CD38 (HIT2) Antibody NB500-510



Flow cytometric analysis of 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

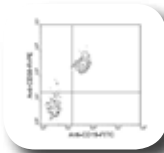
CD38 (NIMR-5) Antibody NBP1-27951



Flow cytometric analysis of small lymphocytes stained using NBP1-27951.

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

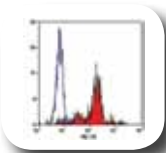
CD38 (NIMR-5) [Biotin] Antibody NBP1-27953



Flow cytometric analysis of small lymphocytes stained using NBP1-27953.

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

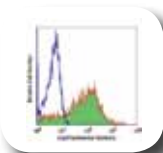
CD38 (AT13/5) [PE] Antibody NB100-63740



Flow cytometric analysis of human peripheral blood monocytes stained with NB100-63740.

Species: Hu
Applications: FACS

CD38 (HIT2) [Biotin] 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

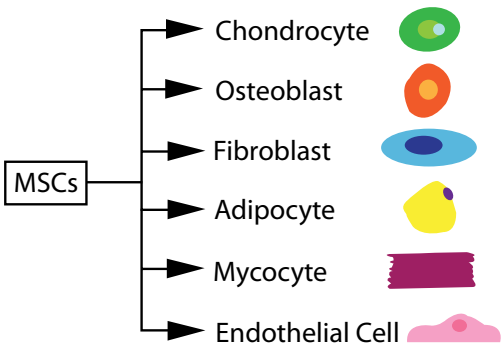


Immunohistochemical analysis of human skeletal muscle using NBP1-02426.

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

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 cell 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



Immunohistochemical analysis of human placenta tissue using NB110-93509.

Species: Hu
Applications: IHC-P

CD44

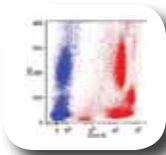
Alias: PGP1

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
H00000960-B01P	CD44	Mouse	Polyclonal	ELISA, WB, IHC-P	Hu
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
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
R-1024-100	CD44	Rabbit	Polyclonal	IHC-Fr, IHC-P, IHC, WB	Hu, Mu, Rb, Rt
28070002	CD44	Rabbit	Polyclonal	ELISA	WB
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
NB100-77414	CD44 (IM7), [Biotin]	Rat	Monoclonal	FACS	Mu, Hu, Bb, Mk, Eq, Bv, Po, Ca, Fe
NBP1-31488	CD44	Rabbit	Polyclonal	IF, IHC, WB	Hu
16810002	CD44	Rabbit	Polyclonal	ELISA	Hu
NBP1-26596	CD44	Rabbit	Polyclonal	IP	Hu

CD44 (MEM-85) Antibody
NB500-386



Surface staining of human peripheral blood cells using NB500-386.

Species: Hu
Applications: FACS, ELISA, IP

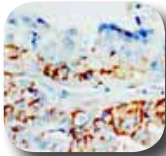
CD44 (156-3C11) Antibody
NB120-16728



Immunohistochemical analysis of human esophageal carcinoma stained using NB120-16728.

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

CD44 Antibody
R-1024-100



Immunohistochemical analysis of human mammary cancer sections using R-1024-100.

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

Bone Morphogenetic Protein Receptors

The bone morphogenetic protein (BMP) receptors are a family of transmembrane serine/threonine kinases that include the type I receptors BMPRI1A and BMPRI1B, as well as the type II receptor BMPRI2. These receptors are closely related to the activin receptors, ACVRI1 and ACVRI2. 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.

BMPRI1A Antibody
NB100-41375



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

Species: Hu
Applications: PEP-ELISA, WB

BMPRI1A (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

BMPRI1B (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, RNAi, WB

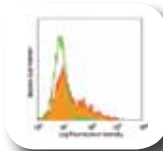
VCAM-1

Aliases: CD106, 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	VCAM1	Mouse	Polyclonal	ELISA, WB	Hu
H00007412-D01P	VCAM1	Rabbit	Polyclonal	ELISA, WB	Hu
NB110-93515	VCAM1 (MM0048-6C12)	Mouse	Monoclonal	IHC-P, WB	Hu
NB100-77474	VCAM1 (429)	Rat	Monoclonal	FACS, IP, IHC-Fr	Mu
NB100-77707	VCAM1 (MR106)	Mouse	Monoclonal	FACS, IP, WB, IHC-Fr	Rt
NB100-77708	VCAM1 (MR106), [Biotin]	Mouse	Monoclonal	FACS	Rt
NB100-63332	VCAM1 (STA), [PE]	Mouse	Monoclonal	FACS	Hu

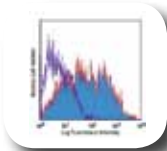
VCAM1 (429) Antibody
NB100-77474



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

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

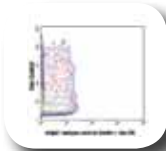
VCAM1 (STA) [Biotin] Antibody
NB100-77823



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

Species: Hu
Applications: FACS

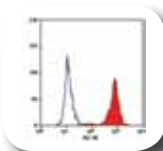
VCAM1 (MR106) [Biotin] Antibody
NB100-77708



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

Species: Rt
Applications: FACS

VCAM1 (STA) [PE] Antibody
NB100-63332



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

Species: Hu
Applications: FACS

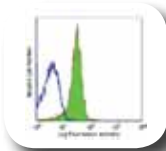
CD31

Alias: PECAM-1

Platelet endothelial cell adhesion molecule 1 (PECAM-1), commonly known as CD31, 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. CD31 is used as a marker for myeloid progenitor cells (a subset of MSCs) and for angiogenesis.

Catalog #	Product	Host	Type	Application	Species
NB100-2284	CD31	Rabbit	Polyclonal	IHC-P	Hu
H00005175-D01P	CD31	Rabbit	Polyclonal	ELISA, WB	Hu
NB100-92205	CD31	Rabbit	Polyclonal	ELISA, IHC-P, IF	Hu, Mu
NB100-65900	CD31 (CO.3E-1D4)	Mouse	Monoclonal	FACS, IP	Bv, Gt, Sh
NB100-63705	CD31 (WM59), [Biotin]	Mouse	Monoclonal	FACS	Hu
NB100-77780	CD31 (WM59), [FITC]	Mouse	Monoclonal	FACS	Hu, Bb, Mk
NB100-63707	CD31 (WM59), [PE]	Mouse	Monoclonal	FACS	Hu
NB100-65633	CD31 (1A10)	Mouse	Monoclonal	IHC-P	Hu
NB110-87060	CD31 (2F7B2)	Mouse	Monoclonal	ELISA, WB, IHC-P	Hu
H00005175-M01	CD31 (1D2-1A5)	Mouse	Monoclonal	ELISA, WB, IHC-P	Hu
NB100-65336	CD31 (LCI-4)	Mouse	Monoclonal	FACS, IP, IHC-Fr	Hu, Po
NB100-64875	CD31 (LCI-9)	Mouse	Monoclonal	FACS, IHC-Fr	Po
NB100-63701	CD31 (TLD-3A12), [Biotin]	Mouse	Monoclonal	FACS	Rt
NB100-63703	CD31 (TLD-3A12), [FITC]	Mouse	Monoclonal	FACS	Rt
NB100-63704	CD31 (TLD-3A12), [PE]	Mouse	Monoclonal	FACS	Rt
NB100-64796	CD31 (TLD-3A12)	Mouse	Monoclonal	FACS, ELISA, WB, IHC-Fr	Rt
NB100-77402	CD31 (MEC13.3), [Biotin]	Rat	Monoclonal	FACS	Mu
NB500-427	CD31 (MEM-05)	Mouse	Monoclonal	FACS, WB	Hu
BM4047	CD31 (MEM-05), [PE]	Mouse	Monoclonal	IHC-Fr, FACS	Hu
24280002	CD31	Rabbit	Polyclonal	ELISA	Hu
BM4086	CD31 (ER-MP12)	Rat	Monoclonal	IHC-Fr, IHC-P	Mu
NB600-562	CD31 (JC70A)	Mouse	Monoclonal	IHC-Fr, IHC-P	Hu, Rb

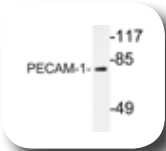
CD31 (MEC13.3) Antibody
NB600-1475



Flow cytometric analysis of C57BL/6 mouse splenocytes stained using NB600-1475.

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

CD31 Antibody
NB100-92205



Western blot analysis of Jurkat cells using NB100-92205.

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

CD31 Antibody
NB100-2284



Immunohistochemical analysis of CD31 on human colon adenocarcinoma using NB100-2284.

Species: Hu
Applications: IHC-P

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	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
NB100-78063	ICAM-1 (HCD54)	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
NB100-64772	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, WB	Hu
NB500-318	ICAM-1 (MEM-111)	Mouse	Monoclonal	ELISA, IHC-P, WB	Bv, Hu, Rt
NB100-77927	ICAM-1 (MEM-111), [FITC]	Mouse	Monoclonal	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
NBP1-28001	ICAM-1 (YN1/1.7.4)	Rat	Monoclonal	FACS, IHC-Fr, In vitro, IP, WB	Mu

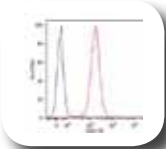
ICAM1 (EP1442Y) Antibody
NB110-57106



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

Species: Hu
Applications: ICC, IHC, WB

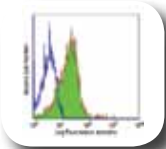
ICAM1 (1H4) [PE] Antibody
NB500-582



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

Species: Hu
Applications: FACS

ICAM1 (MEM-111) [FITC] Antibody
NB100-77927



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

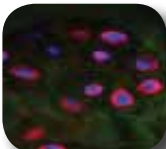
Species: Hu, Bv, Rt
Applications: FACS, ICC

Aggrecan

Aggrecan is a proteoglycan that forms a major structural component of cartilage. Aggrecan 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
NB120-179	Aggrecan (HAG7E1)	Mouse	Monoclonal	ELISA, IP, IHC-Fr	Hu
NB100-64764	Aggrecan (MA77A95 HAG5B11)	Mouse	Monoclonal	ELISA, IP, IHC-Fr	Hu
NB100-64766	Aggrecan (HAG7D4)	Mouse	Monoclonal	ELISA, IP, IHC-Fr	Bv, Hu
NB110-6524	Aggrecan (6-B-4)	Mouse	Monoclonal	ELISA, IHC, WB	Bv, Hu
NB110-6852	Aggrecan Neopeptide (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 Neopeptide (JSCNIT) Antibody
NB100-74350



Immunofluorescent staining of osteoarthritis cartilage using NB100-74350.

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

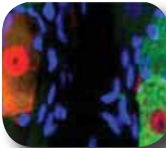
NGF Receptor

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 low affinity Antibody
NB110-74768



Immunofluorescent analysis of rat trigeminal neurons using NB110-74768.

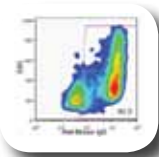
Species: Rt
Applications: ELISA, IHC, WB

Hepatic and Pancreatic Stem Cell Markers

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 (listed in the table below) can be used to isolate cells that may be useful for liver transplant treatments. Another area of transplant interest is therapies to treat Type I Diabetes - ex vivo manipulation of ESCs may yield beta cells that could be used in such transplantation therapies. 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 (listed in the table below) react selectively with cell surface molecules on human pancreatic cells.

Catalog #	Product	Marker Type	Host	Type	Application	Species
NBP1-18949	HPa1 Antibody (DHIC2-2C12)	Alpha cell marker	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NBP1-18950	HPa2 Antibody (DHIC2-2B4)	Alpha cell marker	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NBP1-18953	HPd1 Antibody (DHIC2-4A10)	Duct cell marker	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NBP1-18955	HPd2 Antibody (DHIC2-5H10)	Duct cell marker	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NBP1-18946	HPi2 Antibody (HIC1-2B4.2B)	Endocrine cell marker	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NBP1-18947	HPi3 Antibody (HIC1-7H10)	Endocrine cell marker	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NBP1-18948	HPi4 Antibody (HIC1-5F10)	Endocrine cell marker	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NBP1-18872	HPi1 Antibody (HIC0-4F9)	Endocrine pan-islet cell marker	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NBP1-18951	HPx1 Antibody (HIC0-3B3)	Exocrine cell marker	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NBP1-18952	HPx2 Antibody (HIC0-1C10)	Exocrine cell marker	Mouse	Monoclonal	FACS, IHC-Fr	Hu
NBP1-18961	Oval Cell Marker (MIC1-1C3)	Hepatic duct cell marker	Rat	Monoclonal	FACS, IHC-Fr	Mu
NBP1-18963	Oval Cell Marker (OC2-1D11)	Hepatic duct cell marker	Rat	Monoclonal	FACS, IHC-Fr	Mu
NBP1-18964	Oval Cell Marker (OC2-2F3)	Hepatic duct cell marker	Rat	Monoclonal	FACS, IHC-Fr	Mu
NBP1-18965	Oval Cell Marker (OC2-1C6)	Hepatic periductal cell marker	Rat	Monoclonal	FACS, IHC-Fr	Mu
NBP1-18967	Oval Cell Marker (OC2-2A6)	Hepatic periductal cell marker	Rat	Monoclonal	FACS, IHC-Fr	Mu
NBP1-18968	Oval Cell Marker (OC2-3C5)	Hepatic periductal cell marker	Rat	Monoclonal	FACS, IHC-Fr	Mu
NBP1-18970	Oval Cell Marker (OC2-3C7)	Hepatic periductal cell marker	Rat	Monoclonal	FACS, IHC-Fr	Mu
NBP1-18971	Oval Cell Marker (OC2-4E8)	Hepatic periductal cell marker	Rat	Monoclonal	FACS, IHC-Fr	Mu
NBP1-18981	Oval Cell Marker (OC2-6E10)	Hepatic periductal cell marker	Rat	Monoclonal	FACS, IHC-Fr	Mu

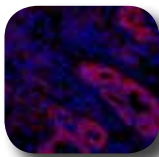
HPi2 (2B4-2B) Antibody NBP1-18946



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

Species: Hu
Applications: FACS, IHC-Fr

Oval Cell Marker (OC2-1D11) Antibody NBP1-18963



Immunohistochemical analysis of DDC treated mouse liver using NBP1-18963.

Species: Mu
Applications: FACS, IHC-Fr

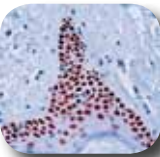
Keratinocyte Stem Cell Markers

TP63

Aliases: KET, p73L, p63

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.

TP63 (4A4) Antibody NB100-691



Immunohistochemical staining of skin using NB100-691.

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

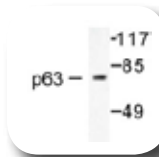
TP63 (Y289) Antibody NB110-57309



Immunofluorescent staining of A431 cells using NB110-57309.

Species: Hu
Applications: IP, WB, ICC

TP63 Antibody NB100-91916



Western blot analysis of p63 (N662) antibody in extracts from COS7 cells using NB100-91916.

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

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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

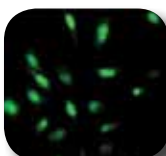
MAPK6 Antibody NBP1-00815



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

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

MAPK6 (4C11) Antibody H00005597-M02



Immunofluorescent analysis of HeLa cell lysate using H00005597-M02.

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 NB100-91938



Western blot analysis of extracts from HepG2 cells using NB100-91938.

Species: Hu, Mu
Applications: ELISA, WB

PSCA Antibody H00008000-B01P



Western blot analysis of transfected 293T cell line (lane 1) and non-transfected lysate (lane 2) using H00008000-B01P.

Species: Hu
Applications: ELISA, WB

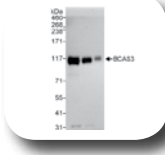
PSCA Antibody NB120-15168



Immunohistochemical 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 using NB110-40682.

Species: Hu
Applications: IP, WB

BCAS3

Breast carcinoma amplified sequence 3 (BCAS3) 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 lesions and breast cancer stem cells.

ALDH1A1

ALDH1A1 is an aldehyde dehydrogenase 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 ALDH1A1 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.

ALDH1A1 (EP1933Y) Antibody NB110-55451



Immunohistochemical analysis of human liver using NB110-55451.

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

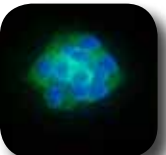
ALDH1A1 Antibody NB100-2563



Western blot analysis of human liver lysate using NB100-2563.

Species: Hu
Applications: PEP-ELISA, WB

ALDH1A1 Antibody 31160002



Immunocytochemical analysis of HepG2 cells using 31160002 (green).

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



IN THE NEWS

1. [DGCR8 Knockout Mouse ESCs NBA1-19349] Wang, et al. DGCR8 is essential for microRNA biogenesis silencing of embryonic stem cell self-renewal. Nat Genet. 2007 Mar; 39(3):380-5. [PMID: 17259983]
2. [Eg5 Antibody NB500-181] Xu G, et al. Preventive effects of heregulin-beta1 on macrophage foam cell formation atherosclerosis. Circ Res 2009;105(5):500-510. [PMID: 19644050]
3. [HPi1 Antibody NBP1-18872] Dorrell C, et al. Isolation of major pancreatic cell types and long-term culture-initiating cells using novel human surface markers. Stem Cell Res. 2008 Sep;1(3):183-94. Epub 2008 May 8. [PMID: 19383399]
4. [Nanog Antibody H00079923-M08] Vaags AK, et al. Derivation and characterization of nine embryonic stem cell lines with in vitro and in vivo differentiation potential. Stem Cells. 2009 Feb;27(2):329-40. [PMID: 19038794]
5. [Nestin Antibody NB300-266] Gangemi RM, et al. SOX2 silencing in glioblastoma tumor-initiating cells causes stop of proliferation and loss of tumorigenicity. Stem Cells. 2009 Jan;27(1):40-8. [PMID: 18948646]
6. [Oval Cell Marker Antibody NBP1-18981] Dorrell C, et al. Surface markers for the murine oval cell response. Hepatology. 2008 Oct;48(4):1282-91. [PMID: 18726953]
7. [Telomerase reverse transcriptase Antibody NB100-317] Zhang Q, et al. Mesenchymal stem cells derived from human gingiva are capable of immunomodulatory functions and ameliorate inflammation-related tissue destruction in experimental colitis. J Immunol. 2009 Dec 15;183(12):7787-98. [PMID: 19923445]
8. [v6.5 Mouse ESCs NBP1-41162] Brambrink T, et al. ES cells derived from cloned and fertilized blastocysts are transcriptionally and functionally indistinguishable. Proc Natl Acad Sci U S A. 2006 Jan 24;103(4):933-8. Epub 2006 Jan 17. [PMID: 16418286]
9. [VEGF Receptor 1 Antibody NB100-527] Ptaszynska MM, et al. Positive feedback between vascular endothelial growth factor-A and autotaxin in ovarian cancer cells. Mol Cancer Res. 2008 Mar;6(3):352-63. [PMID: 18337445]
10. [VEGF Receptor 2 Antibody NB100-2382] Hu-Lowe DD, 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 Nov 15;14(22):7272-83. [PMID: 19010843]
11. [SSEA3 Antibody NB100-1832] ★★★★★
This antibody was given a review of five out of five stars in a customer review submitted August 6, 2010. The researcher used the antibody in Immunohistochemistry on formalin-fixed, paraffin embedded HeLa cells. Further details can be found at <http://www.novusbio.com/NB100-1832.html>
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