



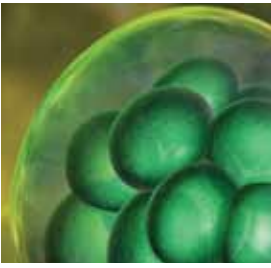
# Stem Cell Reagents

Your Research Starts Here





*eBioscience is committed to developing and manufacturing high-quality, innovative reagents in an ISO certified facility. As a provider of more than 10,000 products, we empower our customers worldwide to obtain exceptional results by using reagents that offer a new standard of excellence in the areas of innovation, quality and value.*



# STEM CELL REAGENTS

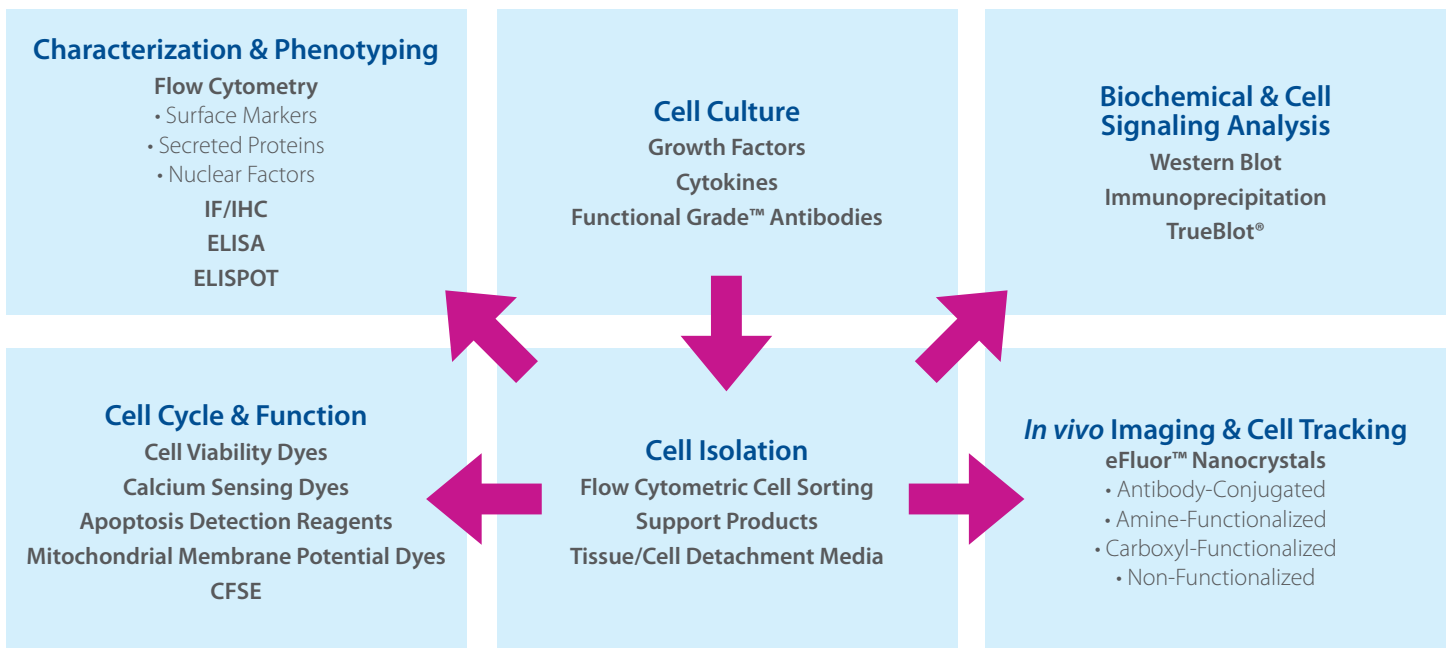
2009 – 2010 Stem Cell Guide

## eBioscience: The Source for Complete Stem Cell Analysis

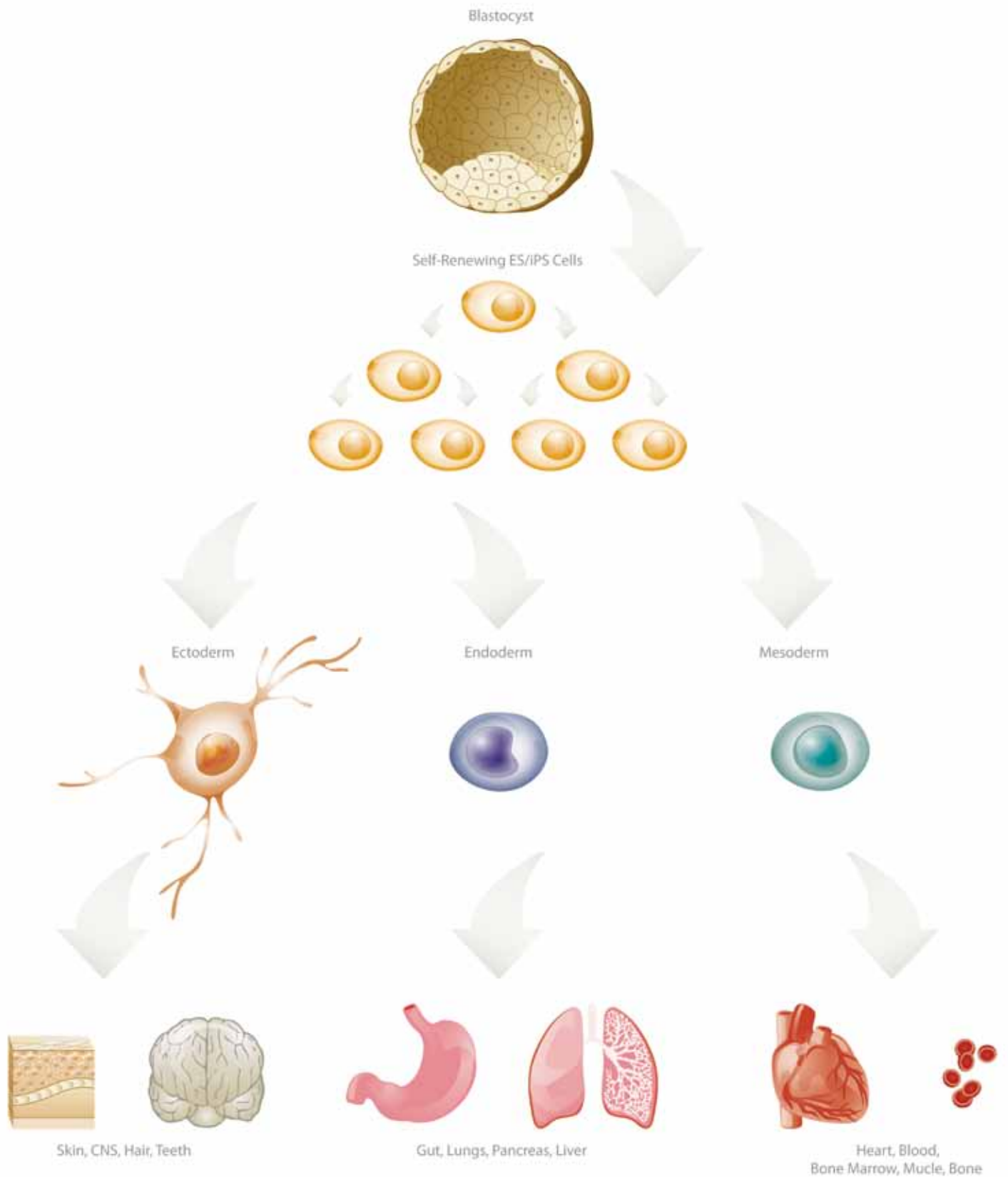
In recent years, ground-breaking discoveries and advancements have sparked renewed interest and excitement in the field of stem cell biology. eBioscience is pleased to provide an offering of reagents supporting all aspects of stem cell research including their culture, isolation and characterization. eBioscience provides a diverse breadth of fluorochrome-conjugated antibodies for the identification of stem cells including induced pluripotent stem cells (iPS), cells derived from the three embryonic germ layers (ectoderm, endoderm and mesoderm) to more specialized stem cell populations including hematopoietic (HSC) and neural (NSC) stem cells. With the recent introduction of our eFluor™ Nanocrystals and Organic Dyes, eBioscience offers the most robust panel of fluorochromes for multicolor applications. In addition to their application in flow cytometry, eFluor™ Nanocrystals are exquisitely suited for immunofluorescent microscopy, cell labeling and *in vivo* tracking experiments due to their inherent brightness and photostability. Furthermore, eBioscience offers a variety of reagents to analyze aspects of cell biology and function including cell proliferation, viability, calcium-flux and apoptosis.

As a leading provider of stem cell reagents, eBioscience is committed to adding to and adapting our portfolio in response to new findings in the field of stem cell biology. eBioscience is proud to support stem cell research during these exciting times and keeps you at the forefront of your stem cell discovery.

## A Comprehensive Stem Cell Solution



# Tissue Development From Stem Cells



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# eFluor™ Nanocrystals

## NEW FLUOROCHROMES FOR MULTICOLOR APPLICATIONS:

eFluor™ Nanocrystals, part of the new eFluor™ brand of fluorochromes, are high quantum yield nanocrystals that possess a core particle surrounded by a patented surface coating that reduces background staining and artifacts. This unique composition leads to improved performance when used in biological applications and allows eBioscience eFluor™ Nanocrystals to be used with confidence in a broad range of applications including:

- Flow Cytometry
- Immunofluorescence Microscopy
- *In vivo* Imaging
- Cell Labeling
- Biomolecule Conjugation

## POWER AND FLEXIBILITY:

eFluor™ Nanocrystals possess intrinsic spectral properties which allow them to be tuned to emit light of a wide range of distinct wavelengths when excited by a single light source. These nanometer-sized particles are intrinsically bright, possess exceptional photostability and have narrow emission spectra. eFluor™ Nanocrystals are easy to use and their unique physical and spectral properties make them excellent products for researchers performing multicolor applications. Named for their emission wavelength the following eFluor™ Nanocrystals are now available:

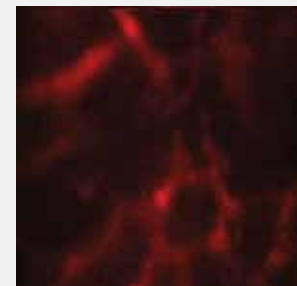
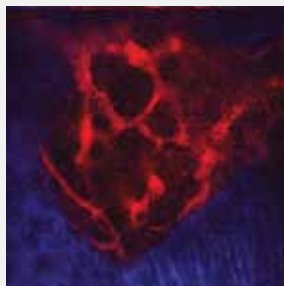
- eFluor™ 490<sup>NC</sup>
- eFluor™ 525<sup>NC</sup>
- eFluor™ 605<sup>NC</sup>
- eFluor™ 625<sup>NC</sup>
- eFluor™ 650<sup>NC</sup>
- eFluor™ 700<sup>NC</sup> (cadmium-free InGaP composition)

### Imaging Vasculature in Mouse Calvarium Bone Marrow Cavities:

eFluor™ 605<sup>NC</sup> Non-Functionalized nanocrystals were injected into the tail vein of a C57BL/6 mouse. After 20 minutes, vasculature in the calvarium bone marrow was imaged (displayed in red) with either 2-photon (left) microscopy with excitation at 880 nm and a 650-700 bandpass filter or confocal microscopy (right) with excitation at 488 and 532 nm and a 650-700 nm bandpass filter. In the image on the left, collagen is visualized (displayed in blue) with second-harmonic generation microscopy. *Images generously provided courtesy of David Scadden, Harvard University.*

eBioscience offers eFluor™ Nanocrystals conjugated to antibodies against a large selection of mouse and human targets. Furthermore, unconjugated nanocrystals are available which are either amine- or carboxyl-functionalized or non-functionalized for applications including *in vivo* imaging, cell labeling and biomolecule conjugation.

### *In vivo* Imaging of Mouse Calvarium Bone Marrow



## eFluor™ Nanocrystals for Imaging and Microscopy

Human		
Description	Cat. No.	Size
eFluor™605 <sup>NC</sup> Streptavidin Conjugate (IF)	93-2317-93	100 µl
eFluor™650 <sup>NC</sup> Streptavidin Conjugate (IF)	95-2317-93	100 µl
eFluor™490 <sup>NC</sup> (Carboxyl)	90-6364-33	200 µl
eFluor™525 <sup>NC</sup> (Carboxyl)	91-6364-33	200 µl
eFluor™605 <sup>NC</sup> (Carboxyl)	93-6364-33	200 µl
eFluor™625 <sup>NC</sup> (Carboxyl)	94-6364-33	200 µl
eFluor™650 <sup>NC</sup> (Carboxyl)	95-6364-33	200 µl
eFluor™700 <sup>NC</sup> (Carboxyl)	96-6364-34	250 µl
eFluor™490 <sup>NC</sup> (Amine)	90-6366-33	200 µl
eFluor™525 <sup>NC</sup> (Amine)	91-6366-33	200 µl
eFluor™605 <sup>NC</sup> (Amine)	93-6366-33	200 µl
eFluor™625 <sup>NC</sup> (Amine)	94-6366-33	200 µl
eFluor™650 <sup>NC</sup> (Amine)	95-6366-33	200 µl
eFluor™700 <sup>NC</sup> (Amine)	96-6366-34	250 µl
eFluor™490 <sup>NC</sup> (Non-Functionalized)	90-6374-33	200 µl
eFluor™605 <sup>NC</sup> (Non-Functionalized)	93-6374-33	200 µl
eFluor™625 <sup>NC</sup> (Non-Functionalized)	94-6374-33	200 µl
eFluor™650 <sup>NC</sup> (Non-Functionalized)	95-6374-33	200 µl
eFluor™700 <sup>NC</sup> (Non-Functionalized)	96-6374-34	250 µl

For a complete list of eFluor™ Nanocrystals for flow cytometry, please see the fluorochrome matrix in each section of this brochure.



Please visit [eBioscience.com](http://eBioscience.com) as new stem cell products are launched regularly.



### ES/iPS Cell Key Products:

Anti-Mouse/Human Oct 3/4 (cat. 5841)

Anti-Mouse Nanog (cat. 5761)

Recombinant Human FGF-basic 147 (cat. 8986)

Accutase™ – Enzyme Cell Detachment Media (cat. 4555)

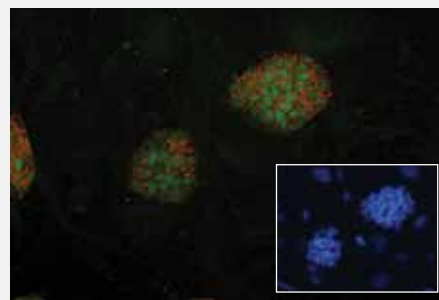
# ES/iPS Cells

Embryonic stem (ES) cells are pluripotent cells derived from the inner cell mass of blastocyst-stage embryos. The basic properties of ES cells, which distinguish them from all other organ-specific cells, include homeostatic self-renewal and the ability to undergo multi-lineage differentiation *in vitro* and *in vivo*. True ES cells can be maintained as a pure population indefinitely in culture. In the case of animal models, it is relatively easy to assess the presence of these features; whereas in the case of human ES cells, other criteria, including their ability to generate embryoid bodies and teratomas containing differentiated cells of the three germ layers (ectoderm, endoderm, mesoderm) is used to determine pluripotency. Furthermore, human ES cells are routinely assayed for the expression of well-characterized protein and molecular markers of pluripotency.

Since the initial discovery of stem cells, their potential to regenerate tissue has intrigued scientists. A significant breakthrough toward this goal occurred in 2007 when the group of Shinya Yamanaka demonstrated the “reprogramming” of adult human fibroblasts into induced pluripotent stem (iPS) cells through the retroviral-mediated introduction of the transcription factors Oct 3/4, Sox2, c-Myc and Klf4. Remarkably, the stem cells generated with this technology have proven to be very similar to embryonic stem (ES) cells based on their expression of “stemness” genes, formation of teratomas upon injection into nude recipients and their contribution to multiple lineages. In a short time, considerable progress has been made; however a significant challenge will be devising strategies for the generation of iPS cells without the use of viral-mediated gene delivery.

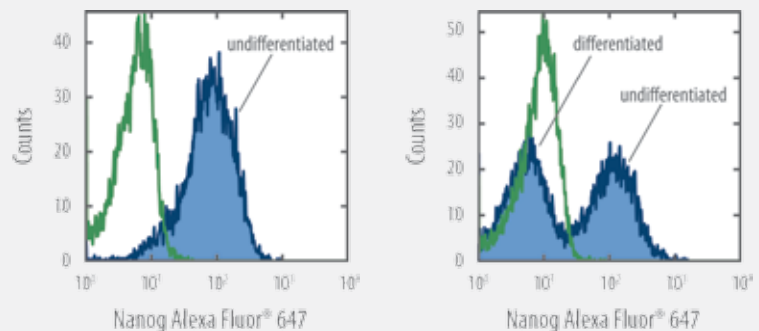
**Anti-Mouse/Human Oct 3/4:** Mouse embryonic stem cells were stained with anti-mouse/human Oct 3/4 (cat. 14-5841) (green), anti-mouse/human SSEA-1 (cat. 14-8813) (red) and DAPI (inset). *Images generously provided courtesy of Sean Morrison, University of Michigan.*

Mouse/Human Oct 3/4



**Anti-Mouse Nanog:** Flow cytometric analysis of Nanog in either untreated (left plot) or treated (right plot) F9 cells. Cells were cultured for three days with All-Trans-Retinoic Acid and then stained with either Alexa Fluor® 647 isotype control (cat. 51-4321, open histogram) or Alexa Fluor® 647 anti-mouse Nanog (cat. 51-5761, shaded histogram) using the Foxp3 Staining Buffer Set (cat. 00-5523).

Mouse Nanog



## ES/iPS Cell Markers

	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>1c</sup>	eFluor™ 650 <sup>1c</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
<b>Human</b>																					
CD9	0098	eBioSN4	•	•	•			•	•				•		•						
CD15	0159	HI98	•	•				•	•				•								
CD24	0247	eBioSN3	•					•	•				•		•						
CD29 (Integrin β1)	0299	TS2/16	•	•	•		•						•		•						
CD49f (Integrin α6)	0495	eBioGoH3	•	•	•			•	•						•						
CD117 (c-Kit)	1179	YB5.B8	•	•	•			•							•			•			
CD324 (E-Cadherin)	3249	DECMA-1	•	•	•	•	•												•		
CD338 (ABCG2)	8888	5D3	•					•	•						•						
c-Myc	6785	9E11		•	•	•		•													
Eomes	4877	WD1928	•																•		
EpCAM (TROP-1)	9326	1B7	•	•	•	•		•							•				•		
Nanog	5769	hNanog.1	•	•		•		•	•				•								
Notch1	5785	mN1A	•	•		•		•	•						•						
Oct 3/4	5841	EM92	•	•		•		•					•	•					•		
SSEA-3	8833	eBioMC-631	•	•				•	•				•	•							
SSEA-4	8843	eBioMC-813-70	•	•				•	•				•	•							
STAT3	6727	polyclonal		•	•	•		•													
TRA-1-60	8863	TRA-1-60	•	•	•	•		•	•						•						
TRA-1-81	8883	TRA-1-81	•	•	•	•		•	•						•						
<b>Mouse</b>																					
CD9	0091	eBioKMC8	•			•		•					•		•				•		
CD24	0242	M1/69	•	•		•	•	•	•	•	•				•	•					
CD29 (Integrin β1)	0291	eBioHMB1-1	•	•	•		•	•	•						•		•	•			
CD30	0301	mCD30.1	•				•	•	•						•						
CD49f (Integrin α6)	0495	eBioGoH3	•	•	•			•	•						•						
CD117 (c-Kit)	1171	2B8	•		•			•	•				•		•			•	•	•	
CD324 (E-Cadherin)	3249	DECMA-1	•	•	•	•	•												•		
c-Myc	6785	9E11		•	•	•		•													
Eomes	4875	Dan11mag	•												•				•		
EpCAM (TROP-1)	5791	G8.8	•	•	•			•							•						
Nanog	5761	eBioMLC-51	•	•		•		•					•						•		
Notch1	5875	mN1A	•	•		•		•	•						•						
Notch3	5763	HMN3-133	•												•						
Notch4	5764	HMN4-14	•												•						
Oct 3/4	5841	EM92	•	•		•		•					•	•					•		
SSEA-1	8813	eBioMC-480	•	•	•			•	•				•	•					•		
SSEA-3	8833	eBioMC-631	•	•				•	•				•	•							
STAT3	6727	polyclonal		•	•	•		•													

## Recombinant Proteins for ES/iPS Cell Culture

<b>Human</b>			
Description	Product Code *	Affinity Purified	Carrier-Free
BMP-2	8507	•	
EGF	8988	•	
FGF-acidic	8987	•	
FGF-basic 147	8986	•	
PDGF-BB	8501	•	
TGFβ	8348	•	•
<b>Mouse</b>			
Description	Product Code *	Affinity Purified	Carrier-Free
EGF	8984	•	
FGF-acidic	8981	•	
FGF-basic	8982	•	
PDGF-AA	8989	•	



Please visit [eBioscience.com](http://eBioscience.com) as new stem cell products are launched regularly.



### Ectoderm Key Products:

Anti-Human Nestin (cat. 9843)

Anti-Mouse/Human SSEA-1 (cat. 8813)

Recombinant Human EGF (cat. 8988)

Anti-Mouse/Human Notch1 (cat. 5785)

# Ectoderm

The neural lineages and skin are derived from ectoderm, which is induced from epiblast cells in the anterior region of the embryo. Ectoderm differentiation of mouse ES cells is well established and the induction of ectoderm in ES cell cultures is often referred to as the “default” pathway, as neuroectoderm readily develops in cultures that contain no serum or other inducers. Each of the three major neural cell types of the central nervous system (CNS), neurons, astrocytes and oligodendrocytes, can be generated, and relatively pure populations of each obtained when cultured under appropriate conditions. In addition to the generation of these different neural populations, conditions have been established for the development of different subtypes of neurons including dopaminergic, serotonergic, cholinergic and GABAergic neurons. The potential to generate different types of neurons from ES cells has significantly raised the interest in repair of nervous system disorders by cell replacement therapy. Indeed, one of the greatest expectations in this field is for the replacement of dopamine neurons in Parkinson’s patients. Using a rat model for Parkinson’s disease, it was recently demonstrated that ES cell culture-derived dopamine neurons survived, developed functional synapses and displayed electrophysiologic properties characteristic of midbrain neurons.

In addition to neural lineages, ectoderm also gives rise to epithelial cells that differentiate into populations expressing markers of keratinocytes. The epidermis undergoes continuous turnover during adult life and engages in wound repair in response to injury. Homeostasis of the skin is ensured by epidermal stem cells, and three distinct niches for multipotent epidermal stem cells exist—the bulge region of the hair follicle, the base of the sebaceous gland, and the basal layer of the interfollicular epidermis.

	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>IC</sup>	eFluor™ 650 <sup>IC</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														

## Ectodermal Markers

Human																				
Nestin	9843	10C2		•		•	•													
Notch1	5785	mN1A	•	•		•	•													
Mouse																				
Notch1	5785	mN1A	•	•		•	•							•						

## Neural Markers

Human																				
CD24	0247	eBioSN3	•				•	•				•		•						
CD56 (NCAM)	0568	CB56	•				•	•					•							
CD90 (Thy-1)	0909	eBioSE10	•	•	•	•	•	•				•		•	•			•		
CD325 (N-Cadherin)	3259	8C11	•	•	•	•	•	•						•						
Nestin	9843	10C2		•		•	•	•												
Mouse																				
CD24	0242	M1/69	•	•		•	•	•	•	•	•	•		•	•	•				
CD81 (TAPA-1)	0811	Eat-2	•		•	•	•	•												
CD90 (Thy-1)	0901	G7	•	•			•	•												
CD166 (ALCAM)	1661	eBioALC48	•	•			•	•						•						

## Oligodendrocyte Markers

Human																				
CD44	0441	IM7	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Mouse																				
CD44	0441	IM7	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
CD140a (PDGFRa)	1401	APA5	•	•		•	•	•												

## Neural Crest Markers

Human																				
CD49d	0499	9F10	•	•			•	•				•		•						
CD57	0577	TB01	•				•					•								
Notch1	5785	mN1A	•	•		•	•							•						
Mouse																				
CD49d	0492	R1-2	•	•	•		•	•	•			•		•						
LPAM-1	5887	DATK32	•				•	•	•					•				•		
Notch1	5785	mN1A	•	•		•	•							•						

## Neural Stem Cell Markers

Human																				
CD15	0159	HI92	•	•			•	•				•								
CD24	0247	eBioSN3	•				•	•				•		•						
CD29 (Integrin β1)	0299	TS2/16	•	•	•		•	•				•		•						
CD49f (Integrin α6)	0495	eBioGoH3	•	•	•		•	•						•						
CD54 (ICAM-1)	0549	HA58	•	•		•	•	•	•					•						
CD95 (FAS/APO-1)	0959	DX2	•	•			•	•	•	•		•		•		•	•			
CD133	1338	TMP4	•				•	•						•				•		
CD146	1469	P1H12	•	•	•	•	•					•								
CD184 (CXCR4)	9999	12G5	•				•	•	•					•		•	•			
CD338 (ABCG2)	8888	5D3	•				•	•						•						
Nestin	9843	10C2		•		•	•													
Notch1	5785	mN1A	•	•		•	•							•						
SSEA-1	8813	eBioMC-480	•	•	•		•	•					•	•				•		
Mouse																				
CD24	0242	M1/69	•	•		•	•	•	•	•	•	•		•	•	•				
CD29 (Integrin β1)	0291	eBioHMB1-1	•	•	•		•	•	•					•		•	•			

\* To view the full listing of product formats, please enter the product code into the search field of our website [www.eBioscience.com](http://www.eBioscience.com)

## Neural Stem Cell (cont.)


	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>HC</sup>	eFluor™ 650 <sup>HC</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
<b>Mouse (cont.)</b>																					
CD49f (Integrin α6)	0495	eBioGoH3	•	•	•			•	•					•							
CD54 (ICAM-1)	0541	YN1/1.7.4	•	•		•	•	•	•				•		•						
CD81 (TAPA-1)	0811	Eat-2	•		•	•		•	•												
CD95 (FAS/APO-1)	0951	15A7	•					•	•						•						
CD133	1331	13A4	•	•	•	•		•	•				•	•	•				•		
CD140a (PDGFRα)	1401	APA5	•	•		•	•	•	•					•					•		
CD184 (CXCR4)	9991	2B11	•	•		•	•	•	•					•	•					•	
Notch1	5785	mN1A	•			•		•	•						•						
SSEA-1	8813	eBioMC-480	•	•	•			•	•					•	•					•	

## Skin Precursor Markers

<b>Human</b>																					
CD49d	0499	9F10	•	•			•	•							•						
Foxj1	9965	2A5		•		•		•													
Nestin	9843	10C2		•		•		•													
<b>Mouse</b>																					
CD49d	0492	R1-2	•	•	•		•	•	•				•		•						
CD166 (AICAM)	1661	eBioALC48	•	•				•							•						
Foxj1	9965	2A5		•		•		•													
LPAM-1	5887	DATK32	•				•	•	•						•					•	
Sca-1 (Ly-6A/E)	5981	D7	•		•	•		•	•		•		•	•	•	•	•				•

## Recombinant Proteins for Ectoderm Cell Culture

<b>Human</b>			
Description	Product Code *	Affinity Purified	Carrier-Free
BMP-2	8507	•	
EGF	8988	•	
FGF-acidic	8987	•	
FGF-basic 147	8986	•	
PDGF-BB	8501	•	
TGFβ	8348	•	•
<b>Mouse</b>			
Description	Product Code *	Affinity Purified	Carrier-Free
EGF	8984	•	
FGF-acidic	8981	•	
FGF-basic	8982	•	
PDGF-AA	8989	•	

 Please visit [eBioscience.com](http://eBioscience.com) as new stem cell products are launched regularly.

### Endoderm Key Products:

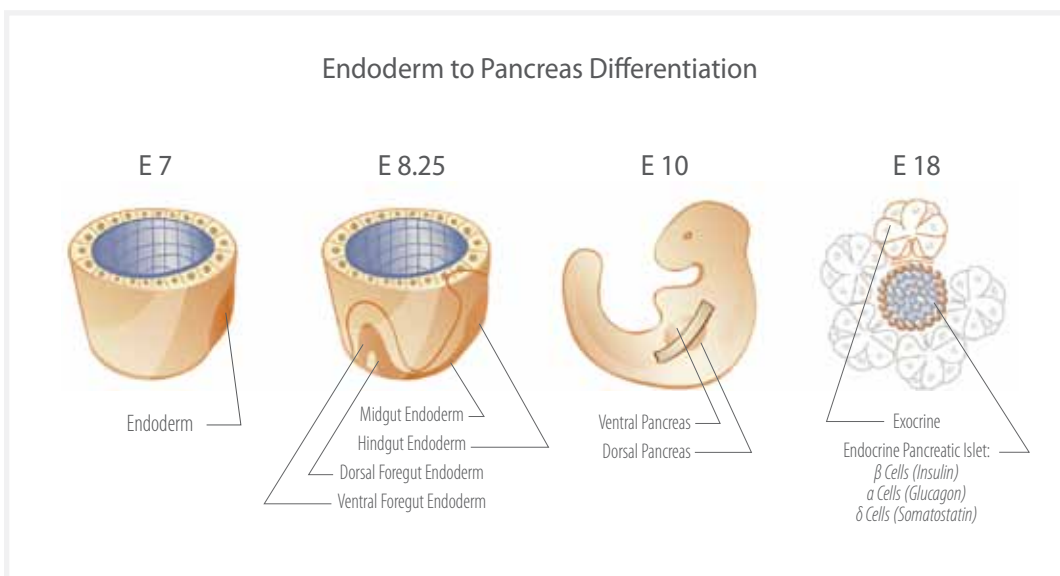
- Recombinant Human HGF (cat. 8439)
- Anti-Mouse/Human Gata-4 (cat. 9980)
- Anti-Human CD184 (CXCR4) (cat. 9999)
- Anti-Mouse c-Met (HGFR) (cat. 8854)



# Endoderm

Endoderm is the innermost of the three germ layers and gives rise to multiple tissues including the lung, liver, pancreas, esophagus, stomach and intestine. A number of endoderm-derived organs such as the pancreas and liver are potential targets for cell-based therapy due to their role in Type 1 Diabetes and liver disease, respectively. There is great interest in understanding the pathways that regulate the induction and specification of this germ layer. Despite this interest, progress in characterizing developmental intermediates of endoderm differentiation has been slow due to a lack of specific inducers of endoderm formation. During gastrulation, definitive endoderm begins as a flat sheet of cells which eventually become columnar. Key markers for the identification of definitive endoderm include Gata-4, Foxa2, CXCR4 and Sox17.

Liver and pancreas progenitors develop from endoderm cells in the embryonic foregut. Together, they coordinately control body metabolism including the modification of digested nutrients by hepatocytes in the liver and the regulation of blood glucose levels by insulin produced by  $\beta$  cells in the pancreas. Clinical studies have shown that transplantation of hepatocytes can support the functions of a failed liver and correct metabolic liver disease in the long term. Similarly, transplanted pancreatic islets can support glucose homeostasis in Type I Diabetic individuals, but only for a limited time. In spite of these significant accomplishments, gaining a full understanding of the critical pathways involved in pancreas and liver derivation will enable more efficient and reproducible tissue regeneration.




**Pancreas Differentiation:** Overview of mouse pancreatic organogenesis from endoderm. Adapted from Stoffers et al Genes & Dev. 2008. 22: 1998-2021.

## Endoderm Markers

	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>1c</sup>	eFluor™ 650 <sup>1c</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
<b>Human</b>																					
β-Catenin	6765	polyclonal		•	•	•		•													
CD29 (Integrin β1)	0299	TS2/16	•	•	•		•	•					•	•							
CD31 (PECAM1)	0319	WM-59	•	•			•	•					•	•				•			
CD49f (Integrin α6)	0495	eBioGoH3	•	•	•		•	•						•							
CD90 (Thy-1)	0909	eBio5E10	•	•	•	•	•	•					•	•	•			•			
CD184 (CXCR4)	9999	12G5	•				•	•						•		•	•				
CD325 (N-Cadherin)	3259	8C11	•	•	•	•	•	•						•							
c-Met (HGFR)	8858	eBioclone 97	•				•	•					•								
Gata-4	9980	eBioEvan				•	•	•													
<b>Mouse</b>																					
β-Catenin	6765	polyclonal		•	•	•		•													
CD29 (Integrin β1)	0291	eBioHMB1-1	•	•	•		•	•	•					•			•	•			
CD31 (PECAM1)	0311	390	•	•	•		•	•	•	•			•	•			•	•			
CD49f (Integrin α6)	0495	eBioGoH3	•	•	•		•	•						•							
CD90 (Thy-1)	0901	G7	•	•			•	•													
CD184 (CXCR4)	9991	2B11	•	•		•	•	•					•	•					•		
c-Met (HGFR)	8854	eBioclone 7	•				•	•					•	•							
Gata-4	9980	eBioEvan				•	•	•													
Sca-1 (Ly-6A/E)	5981	D7	•	•	•		•	•	•				•	•	•	•	•			•	

## Recombinant Proteins for Endoderm Cell Culture

Human			
Description	Product Code *	Affinity Purified	Carrier-Free
BMP-2	8507	•	
EGF	8988	•	
FGF-acidic	8987	•	
FGF-basic 147	8986	•	
HGF	8439	•	•
IGF-2	8505	•	
IL-6	8069	•	•
PDGF-BB	8501	•	
SCF	8349	•	•
TGFβ	8348	•	•
VEGF	8359	•	•
Mouse			
Description	Product Code *	Affinity Purified	Carrier-Free
EGF	8984	•	
FGF-acidic	8982	•	
FGF-basic	8981	•	
HGF	8431	•	•
IL-6	8061	•	•
PDGF-AA	8989	•	
SCF	8341	•	•
VEGF	8351	•	•

 Please visit [eBioscience.com](http://eBioscience.com) as new stem cell products are launched regularly.

### Mesoderm Key Products:

Recombinant Human Leptin (cat. 8509)  
Anti-Mouse CD105 (Endoglin) (cat. 1051)  
Anti-Human CD144 (VE-Cadherin) (cat. 1449)  
Anti-Human CD325 (N-Cadherin) (cat. 3259)

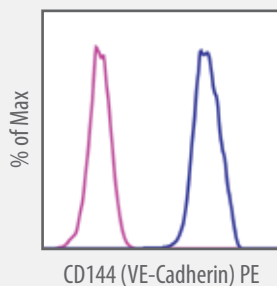


# Mesoderm

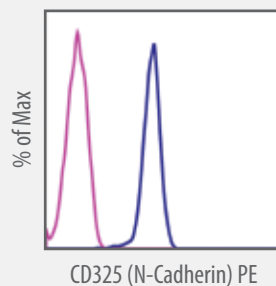
The hematopoietic, vascular, cardiac, and skeletal muscle lineages develop from mesoderm in a defined temporal pattern. Understanding the mechanisms that regulate mesoderm induction is a prerequisite for generating each of these cell types. The early stages of mesoderm induction from the embryonic primitive streak can be monitored by the upregulation of the receptors Flk-1 and PDGFR. Although most studies have not distinguished primitive streak formation from mesoderm induction, several have provided insights into the signaling pathways that regulate this step. It was demonstrated that BMP signaling is required to induce Flk-1<sup>+</sup> hematopoietic mesoderm from populations that express Brachyury, indicating that this family of growth factors is required for mesoderm induction. Furthermore, it was shown that the generation of hematopoietic mesoderm from a Brachyury<sup>+</sup> primitive streak population is dependent on a combination of Wnt and activin/Nodal activity in addition to BMP signaling, and that upregulation of Flk-1 correlated with commitment to a mesoderm fate.

Mesoderm development has attracted attention for its potential to regenerate heart tissue. The development of the heart from precardiac mesodermal cells involves the differentiation of cardiac precursors into a variety of cell types including the myocardium, endocardium, and the cardiac mesenchyme. Findings from several studies suggest that transient inhibition of Wnt/ $\beta$ -catenin signaling is essential for the generation of cardiac tissue. While the mesoderm, and its associated tissues, has been the most-well characterized of the germ-layers, the further analysis of mesoderm development is important to its full understanding.

### Anti-Human VE-Cadherin



### Anti-Human N-Cadherin



**(Left) Anti-Human CD144 (VE-Cadherin):** Staining of Human Umbilical Vein Endothelial Cells (HUVEC) with PE Mouse IgG1, K Iso Cntrl (cat. 12-4714) (pink histogram) or PE anti-human CD144 (VE-Cadherin) (blue histogram) (cat. 12-1449). Total viable cells were used for analysis.

**(Right) Anti-Human CD325 (N-Cadherin):** Staining of HeLa cells with PE Mouse IgG1, K Iso Cntrl (cat. 12-4714) (pink histogram) or PE anti-human CD325 (N-Cadherin) (blue histogram) (cat. 12-3259). Total viable cells were used for analysis.

Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>IC</sup>	eFluor™ 650 <sup>IC</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
		FC	IHC	IP	WB	FA														
<b>Early Mesoderm Markers</b>																				
<b>Human</b>																				
CD31 (PECAM1)	0319	WM-59	•	•			•	•			•		•			•				
CD34 (Mucosalin)	0349	4H11	•			•	•				•		•		•		•			
CD325 (N-Cadherin)	3259	8C11	•	•	•	•							•							
<b>Mouse</b>																				
CD31 (PECAM1)	0311	390	•	•	•		•	•		•			•		•	•				
CD34 (Mucosalin)	0341	RAM34	•	•			•	•			•					•	•	•		
Sca-1 (Ly-6A/E)	5981	D7	•		•	•			•		•		•	•	•	•		•		

## Mesenchymal Stem Cell Markers

<b>Human</b>																			
CD105 (Endoglin)	1057	SN6	•				•									•			
CD117 (c-Kit)	1179	YB5.B8	•	•	•			•								•			
STRO-1 ( <i>Coming Soon</i> )	TBD		•	•		•													
<b>Mouse</b>																			
CD105 (Endoglin)	1051	MJ7/18	•	•	•	•		•	•	•						•			
CD106 (VCAM-1)	1061	429	•	•	•		•	•			•							•	

## Endothelial Cell Markers

<b>Human</b>																			
CD14	0149	61D3	•	•			•	•	•	•		•		•		•			
CD15	0159	HI98	•	•				•	•			•							
CD18 (Integrin β2)	0187	CLB-LFA-1/1	•					•				•	•						
CD29 (Integrin β1)	0299	TS2/16	•	•	•		•	•				•		•					
CD31 (PECAM1)	0319	WM-59	•	•				•	•			•		•			•		
CD34 (Mucosalin)	0349	4H11	•			•	•	•				•		•			•		
CD36	0369	eBioNL07	•					•				•						•	
CD45 (LCA)	0459	HI30	•	•				•	•		•		•	•	•	•	•		
CD45R (B220)	0452	RA3-6B2	•	•	•		•	•	•		•		•	•	•	•	•	•	•
CD49d (Integrin α4)	0499	9F10	•	•			•	•					•						
CD49e (Integrin α5)	0496	eBioSAM-1	•	•	•			•	•				•						
CD49f (Integrin α6)	0495	eBioGoH3	•	•	•			•	•					•					
CD54 (ICAM-1)	0549	HA58	•	•		•	•	•	•					•					
CD56 (NCAM)	0568	CB56	•					•	•				•						
CD62E (E-Selectin)	0627	P2H3	•	•	•		•	•						•					
CD62L (L-Selectin)	0629	DREG-56	•	•		•	•	•		•					•		•		•
CD62P (P-Selectin)	0628	AK-4	•	•			•	•				•		•					
CD93 (C1qR <sub>p</sub> )	0939	R139	•		•	•		•									•		
CD102	1029	CBRIC2/2	•	•	•	•	•	•				•		•					
CD105 (Endoglin)	1057	SN6	•				•	•					•			•			
CD106 (VCAM-1)	1069	STA	•	•				•	•				•						
CD109	1099	HU17	•		•			•					•						
CD116 (GM-CSFR)	1169	4H1	•					•	•				•						
CD117 (c-Kit)	1179	YB5.B8	•	•	•			•	•				•				•		
CD124 (IL-4Ra)	1249	X2/45-12	•				•	•											
CD144 (VE-Cadherin)	1449	16B1	•			•		•	•				•	•			•		•
CD146 (MCAM)	1469	P1H12	•	•	•	•		•				•							
CD147 (Neurothelin)	1472	8D12	•	•	•	•		•						•					
CD152 (CTLA-4)	1529	14D3	•	•			•	•	•					•					
CD157	1579	eBioSY11B5	•	•	•	•		•						•					
CD184 (CXCR4)	9999	12G5	•				•	•	•					•			•		
CD209 (DC-SIGN)	2099	eB-h209	•		•			•	•				•	•			•		
CD253 (TRAIL)	9927	RIK-2	•				•	•	•					•					
CD262 (TRAIL-R2, DRS)	9908	DJR2-4	•				•	•						•					

Endothelial Cell (cont.)	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>HC</sup>	eFluor™ 650 <sup>HC</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
<b>Human (cont.)</b>																					
CD325 (N-Cadherin)	3259	8C11	•	•	•	•	•							•							
Nestin	9843	10C2		•		•	•														
STAT3	6727	polyclonal		•	•	•	•														
<b>Mouse</b>																					
CD14	0141	Sa2-8	•		•	•	•	•				•		•	•		•				
CD18 (Integrin β2)	0181	M18/2	•	•	•	•	•	•				•		•							
CD29 (Integrin β1)	0291	eBioHmB1-1	•	•	•		•	•						•		•	•				
CD31 (PECAM1)	0311	390	•	•	•		•	•		•				•		•	•				
CD34 (Mucosialin)	0341	RAM34	•	•			•	•				•					•	•	•		
CD36	0361	No. 72-1	•				•							•			•				
CD45 (LCA)	0451	30-F11	•	•	•		•	•		•				•	•	•	•		•	•	
CD45R (B220)	0452	RA3-6B2	•	•	•		•	•		•			•	•	•	•	•	•	•	•	
CD49d (Integrin α4)	0492	R1-2	•	•	•		•	•				•		•							
CD49e (Integrin α5)	0493	eBioHMa5-1	•		•		•	•				•		•							
CD49f (Integrin α6)	0495	eBioGoH3	•	•	•		•	•						•							
CD54 (ICAM-1)	0541	YN1/1.7.4	•	•			•	•				•		•							
CD62L (L-Selectin)	0621	MEL-14	•	•	•		•	•		•				•	•	•	•		•	•	
CD62P (P-Selectin)	0626	Pse1.K02.3	•											•							
CD93 (C1qRp)	5892	AA4.1	•	•			•	•				•		•	•	•	•				
CD102	1021	3C4	•	•	•		•	•	•				•								
CD105 (Endoglin)	1051	MJ7/18	•	•	•	•	•	•	•					•							
CD106 (VCAM-1)	1061	429	•	•	•		•	•				•						•			
CD117 (c-Kit)	1171	2B8	•		•		•	•				•		•		•	•		•	•	
CD120a (TNFR type 1)	1202	55R-170					•	•													
CD120b (TNFR type II)	1203	TR75-54	•		•	•	•	•													
CD144 (VE-Cadherin)	1441	eBioBV13	•	•	•	•	•	•					•						•		
CD147 (Neurothelin)	1471	RL73	•	•			•					•		•							
CD152 (CTLA-4)	1522	UC10-4B9	•		•		•	•						•							
CD166 (ALCAM)	1661	eBioALC48	•	•			•							•							
CD184 (CXCR4)	9991	2B11	•	•		•	•	•					•	•					•		
CD201 (EPCR)	2012	eBio1560	•	•			•	•						•							
CD209 (DC-SIGN)	2092	LWC06	•		•	•	•	•				•		•			•				
CD252 (OX-40L)	5905	RM134L	•	•	•		•	•						•							
CD253 (TRAIL)	5951	N2B2	•	•			•	•						•							
CD262 (TRAIL-R2, DR5)	5883	MD5-1	•				•	•						•							
CD309 (FLK-1, VEGF-R2)	5821	Avas12a1	•	•		•	•	•						•			•		•		
Sca-1 (Ly-6A/E)	5981	D7	•		•	•	•	•		•				•	•	•	•		•	•	
STAT3	6727	polyclonal		•	•	•	•	•													

## Cardiogenesis Markers

<b>Human</b>																				
CD31 (PECAM1)	0319	WM-59	•	•			•	•				•		•			•			
CD34 (Mucosialin)	0349	4H11	•			•	•	•				•		•		•		•		
CD106 (VCAM-1)	1069	STA	•	•			•	•						•						
CD117 (c-Kit)	1179	YB5.B8	•	•	•		•	•						•			•			
CD144 (VE-Cadherin)	1449	16B1	•			•	•	•					•	•			•		•	
CD325 (N-Cadherin)	3259	8C11	•	•	•	•	•	•						•						
GATA-4	9980	eBioEvan				•	•													
<b>Mouse</b>																				
CD31 (PECAM1)	0311	390	•	•	•		•	•		•			•	•		•	•			
CD34 (Mucosialin)	0341	RAM34	•	•			•	•				•		•			•	•	•	
CD66a	0661	CC1	•	•			•	•						•						
CD106 (VCAM-1)	1061	429	•	•	•		•	•				•							•	

\* To view the **full listing of product formats**, please enter the product code into the search field of our website [www.eBioscience.com](http://www.eBioscience.com)

## Cardiogenesis (cont.)

	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>1c</sup>	eFluor™ 650 <sup>1c</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
<b>Mouse (cont.)</b>																					
CD117 (c-Kit)	1171	2B8	•		•			•	•				•				•			•	•
CD144 (VE-Cadherin)	1441	eBioBV13	•	•	•	•		•	•				•					•			
CD166 (ALCAM)	1661	eBioALC48	•	•				•						•							
CD309 (FLK-1, VEGF-R2)	5821	Avas12a1	•	•		•		•	•					•				•		•	
GATA-4	9980	eBioEvan				•		•													

## Bone Marrow Precursor Markers (negative)

<b>Human</b>																					
CD11a	0119	HI111	•	•			•	•					•		•						
CD11b	0118	ICRF44	•				•	•			•		•	•	•		•	•			
CD31 (PECAM1)	0319	WM-59	•	•				•	•				•		•			•			
CD34 (Mucosalin)	0349	4H11	•			•	•						•	•			•		•		
CD45 (LCA)	0459	HI30	•	•				•	•		•		•		•	•	•	•			
<b>Mouse</b>																					
CD11a	0111	M17/4	•	•	•		•	•	•				•		•						
CD11b	0112	M1/70	•	•	•		•	•	•	•			•	•			•	•			•
CD31 (PECAM1)	0311	390	•	•	•		•	•	•				•		•		•	•			
CD34 (Mucosalin)	0341	RAM34	•	•				•	•				•				•		•		•
CD45 (LCA)	0451	30-F11	•	•	•		•	•	•		•		•		•	•	•	•		•	•

## Bone Marrow Precursor Markers (positive)

<b>Human</b>																						
CD10	0106	eBioCB-CALLA	•					•	•				•		•		•	•				
CD13	0138	WM-15	•	•				•					•		•			•				
CD14	0149	61D3	•	•			•	•	•	•			•		•	•		•				
CD15	0159	HI98	•	•				•	•				•									
CD29 (Integrin β1)	0299	TS2/16	•	•	•		•	•					•		•							
CD49d (Integrin α4)	0499	9F10	•	•			•	•					•		•							
CD49e (Integrin α5)	0496	eBioSAM-1	•	•	•			•	•					•								
CD54 (ICAM-1)	0541	HA58	•	•		•	•	•	•						•							
CD71 (Transferrin Receptor)	0719	OKT9	•					•	•				•		•							
CD90 (Thy-1)	0909	eBio5E10	•	•	•	•		•	•				•		•			•				
CD105 (Endoglin)	1057	SN6	•				•	•						•				•				
CD106 (VCAM-1)	1069	STA	•	•				•	•					•								
CD117 (c-Kit)	1179	YB5.B8	•	•	•			•	•					•				•				
<b>Mouse</b>																						
CD14	0141	Sa2-8	•		•	•		•	•				•		•	•		•				
CD29 (Integrin β1)	0291	eBioHMB1-1	•	•	•		•	•	•				•		•		•	•				
CD49d (Integrin α4)	0492	R1-2	•	•	•		•	•	•				•		•							
CD49e (Integrin α5)	0493	eBioHMa5-1	•		•		•	•					•		•							
CD51 (Integrin αV)	0512	RMV-7	•		•	•	•	•	•					•								
CD54 (ICAM-1)	0549	YN1/1.7.4	•	•			•	•	•				•		•							
CD71 (Transferrin Receptor)	0711	R17217	•				•	•	•				•		•							
CD73 (Ecto-5'-Nucleotidase)	0731	eBioTY/11.8	•	•			•	•	•	•				•								
CD90 (Thy-1)	0901	G7	•	•			•	•														
CD105 (Endoglin)	1051	MJ7/18	•	•	•	•		•	•	•				•								
CD106 (VCAM-1)	1061	429	•	•	•		•	•	•				•						•			
CD117 (c-Kit)	1171	2B8	•	•			•	•					•		•			•	•		•	•
CD120a (TNFR type I)	1202	55R-170					•	•														
CD120b (TNFR type II)	1203	TR75-54	•	•	•	•		•	•													
CD166 (ALCAM)	1661	eBioALC48	•	•				•						•								
Flk-1 (VEGF-R2)	5821	Avas12a1	•	•		•		•	•					•				•		•		
Sca-1 (Ly-6A/E)	5981	D7	•		•	•		•	•		•		•		•	•	•	•		•	•	

## Adipose Precursor Markers (negative)

	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>1c</sup>	eFluor™ 650 <sup>1c</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
<b>Human</b>																					
CD11b	0113	ICRF44	•				•	•		•		•	•	•		•	•				
CD14	0149	61D3	•	•			•	•	•	•		•		•	•		•				
CD19	0198	HIB19	•	•			•	•	•	•		•	•	•	•	•	•	•	•	•	
CD34 (Mucosalin)	0349	4H11	•			•	•					•		•		•		•			
CD45 (LCA)	0459	HI30	•	•			•	•		•		•		•	•	•	•				
HLA-DR	9956	LN3	•	•			•	•		•		•		•	•	•	•		•		
<b>Mouse</b>																					
CD11b	0112	M1/70	•	•	•		•	•		•		•		•		•	•			•	
CD14	0141	Sa2-8	•		•	•		•	•			•		•	•		•				
CD19	0199	eBio1D3	•	•	•		•	•				•		•	•	•	•	•	•	•	
CD34 (Mucosalin)	0341	RAM34	•	•			•	•				•					•	•	•		
CD45 (LCA)	0451	30-F11	•	•	•		•	•		•		•		•	•	•	•		•	•	
CD79a	0791	24C2.5	•									•						•			

## Adipose Precursor Markers (positive)


<b>Human</b>																					
	Product Code *	Clone	FC	IHC	IP	WB	FA	Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>1c</sup>	eFluor™ 650 <sup>1c</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
CD9	0098	eBioSN4	•	•	•			•	•				•		•						
CD10	0106	eBioCB-CALLA	•					•	•				•		•		•	•			
CD13	0138	WM-15	•	•				•					•		•			•			
CD29 (Integrin β1)	0299	TS2/16	•	•	•		•	•					•		•						
CD44	0441	IM7	•	•	•	•	•	•	•	•	•		•		•	•	•	•		•	•
CD49d (Integrin α4)	0499	9F10	•	•			•	•					•		•						
CD49e (Integrin α5)	0496	eBioSAM-1	•	•	•			•	•					•							
CD54 (ICAM-1)	0549	HA58	•	•		•	•	•	•						•						
CD55	0559	143-30	•					•	•				•		•						
CD90 (Thy-1)	0909	eBio5E10	•	•	•	•		•	•				•		•	•		•			
CD105 (Endoglin)	1057	SN6	•				•	•							•			•			
CD106 (VCAM-1)	1069	STA	•	•				•	•						•						
CD146 (MCAM)	1469	P1H12	•	•	•	•		•					•								
<b>Mouse</b>																					
CD9	0091	eBioKMC8	•			•		•					•		•					•	
CD29 (Integrin β1)	0291	eBioHMB1-1	•	•	•		•	•	•						•		•	•			
CD44	0441	IM7	•	•	•	•	•	•	•	•	•		•		•	•	•	•		•	•
CD49d (Integrin α4)	0492	R1-2	•	•	•		•	•	•				•		•						
CD49e (Integrin α5)	0493	eBioHMa5-1	•		•		•	•					•		•						
CD54 (ICAM-1)	0541	YN1/1.7.4	•	•			•	•	•				•		•						
CD73 (Ecto-5'-Nucleotidase)	0731	eBioTY/11.8	•	•			•	•	•	•					•						
CD90 (Thy-1)	0901	G7	•	•			•	•													
CD105 (Endoglin)	1051	MJ7/18	•	•	•	•		•	•	•					•						
CD106 (VCAM-1)	1061	429	•	•	•		•	•	•				•							•	
CD166 (ALCAM)	1661	eBioALC48	•	•				•							•						



Please visit [eBioscience.com](http://eBioscience.com) as new stem cell products are launched regularly.

## Recombinant Proteins for Mesoderm Cell Culture

Human			
Description	Product Code *	Affinity Purified	Carrier-Free
BMP-2	8507	•	
EGF	8988	•	
FGF-acidic	8987	•	
FGF-basic 147	8986	•	
G-CSF	8979	•	
GM-CSF	8339	•	•
HGF	8439	•	•
IGF-2	8505	•	
IL-6	8069	•	•
Leptin	8509	•	
M-CSF	8985	•	
PDGF-BB	8501	•	
SCF	8349	•	•
TGFβ	8348	•	•
VEGF	8359	•	•
Mouse			
Description	Product Code *	Affinity Purified	Carrier-Free
G-CSF	8971	•	
EGF	8984	•	
FGF-acidic	8982	•	
FGF-basic	8981	•	
GM-CSF	8331	•	•
HGF	8431	•	•
IL-3	8031	•	•
IL-6	8061	•	•
IL-7	8071	•	•
Leptin	8510	•	
M-CSF	8983	•	
PDGF-AA	8989	•	
SCF	8341	•	•
VEGF	8351	•	•

 Please visit [eBioscience.com](http://eBioscience.com) as new stem cell products are launched regularly.

### HSC Key Products:

Anti-Human CD34 (cat. 0349)

Anti-Mouse CD201 (cat. 2012)

Anti-Mouse CD150 (cat. 1502)

Recombinant Human SCF (cat. 8349)



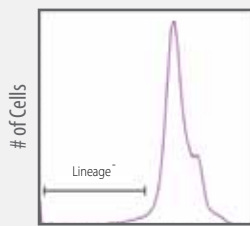
Blood

# Hematopoietic Stem Cells

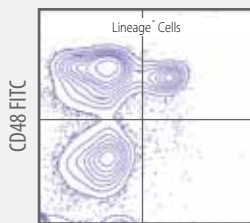
The field of stem cell biology commenced with the identification of hematopoietic stem cells (HSC) in 1961 by Till and McCullough. In a landmark experiment, they demonstrated that clonally-marked mouse bone marrow cells had the potential to give rise to a spleen colony-forming unit (CFU-S) and that all of the cells composing the CFU-S were derived from a single clone. It is now known that HSCs progress through defined stages of maturation that result in gradual loss of multi-lineage potential and commitment to various blood cell phenotypes. Mouse HSCs were first isolated as part of the bone marrow fraction depleted of lineage positive cells. Subsequently, it was discovered that the lineage-negative fraction could be significantly enriched for HSCs by further selecting the  $\text{lin}^{-}\text{Sca-1}^{+}\text{c-Kit}^{+}$  (LSK) population of bone marrow. In 2005, it was demonstrated by Morrison et al that a combination of the SLAM family of proteins could also be used to efficiently identify and isolate HSCs. They found the  $\text{CD150}^{+}\text{CD48}^{-}\text{CD244}^{-}\text{CD41}^{-}$  fraction of mouse bone marrow to be significantly enriched for long-term reconstituting ability. In humans, the isolation of a  $\text{lin}^{-}\text{CD34}^{+}\text{CD90}^{+}$  progenitor cell resulted in the purification of a homogeneous HSC population. The critical test for HSCs is in their ability to clinically rescue myelo-ablated hosts from hematopoietic failure, and establish long-term multi-hematopoietic lineage reconstitution. Clinical implantation of HSCs into cancer patients has led to stable grafts depleted of contaminating hematopoietic cells and resident or metastasized malignant cells. The continued identification of novel HSC markers will enable improved efficiency in the purification of HSCs for the treatment of disease.

## Hematopoietic Stem Cell Identification

### "SLAM" Scheme $\text{CD150}^{+}\text{CD48}^{-}\text{Lin}^{-}$

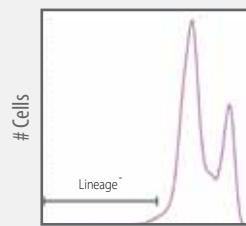


Pacific Blue®  
HSC Lineage Cocktail

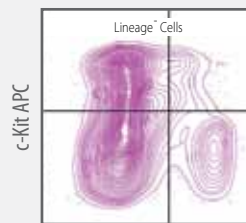


CD150 PE

### "LSK" Scheme $\text{Lin}^{-}\text{Sca-1}^{+}\text{c-Kit}^{+}$



Pacific Blue®  
HSC Lineage Cocktail



Sca-1 PE

### (Left) "SLAM" Identification of Mouse Hematopoietic Stem Cells:

Mouse bone marrow cells were stained with the eBioscience Pacific Blue® Mouse Hematopoietic Lineage Cocktail (cat. 88-7773), FITC anti-mouse CD48 (cat. 11-0481) and PE anti-mouse SLAM (CD150), clone mSHAD150 (cat. 12-1502). Cells in the lymphocyte gate were used for analysis. Events displayed in the bottom plot are gated on lineage negative events as depicted in the top plot.

### (Right) "LSK" Identification of Mouse Hematopoietic Stem Cells:

Mouse bone marrow cells were stained with the eBioscience Pacific Blue® Mouse Hematopoietic Lineage Cocktail (cat. 88-7773), APC anti-mouse c-Kit (CD117) (cat. 17-1171) and PE anti-mouse Sca-1, (cat. 12-5981). Cells in the lymphocyte gate were used for analysis. Events displayed in the bottom plot are gated on lineage negative events as depicted in the top plot.

	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>HC</sup>	eFluor™ 650 <sup>HC</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
<b>Hemangioblast Markers</b>																					
<b>Human</b>																					
CD31 (PECAM1)	0319	WM-59	•	•			•	•				•		•			•				
CD34 (Mucosalin)	0349	4H11	•			•	•					•		•		•		•			
CD144 (VE-Cadherin)	1449	16B1	•			•	•						•	•			•		•		
CD324 (E-Cadherin)	3249	DECMA-1	•	•		•	•											•			
<b>Mouse</b>																					
CD31 (PECAM1)	0311	390	•	•	•		•	•		•		•		•		•	•				
CD34 (Mucosalin)	0341	RAM34	•	•			•	•				•					•	•	•		
CD144 (VE-Cadherin)	1441	eBioBV13	•	•	•	•		•	•				•					•			
CD202 (Tie-2)	5987	TEK4	•	•			•	•						•							
CD309 (Flk-1, VEGF-R2)	5821	Avas12a1	•	•		•		•	•					•			•		•		
CD324 (E-Cadherin)	3249	DECMA-1	•	•		•	•											•			

## Lymphoid Markers

<b>Human</b>																				
CD10	0106	eBioCB-CALLA	•				•	•				•		•		•	•			
CD34 (Mucosalin)	0349	4H11	•			•	•					•		•		•		•		
CD38	0388	HIT2	•	•			•	•				•		•		•	•		•	
CD90 (Thy-1)	0909	eBio5E10	•	•	•	•		•	•			•		•	•		•			
CD117 (c-Kit)	1179	YB5.B8	•	•	•			•	•					•			•			
CD124 (IL-4Ra)	1249	X2/45-12	•				•	•												
CD127 (IL-7Ra)	1278	eBioRDR5	•	•			•	•				•		•	•	•		•		•
HLA-DR	9956	LN3	•	•			•	•		•		•		•	•	•	•		•	
<b>Mouse</b>																				
CD34 (Mucosalin)	0341	RAM34	•	•			•	•				•					•	•	•	
CD38	0381	90	•	•		•	•	•				•		•			•		•	
CD90 (Thy-1)	0901	G7	•	•			•	•												
CD117 (c-Kit)	1171	2B8	•		•		•	•				•		•		•	•		•	•
CD127 (IL-7Ra)	1271	A7R34	•	•	•		•	•				•	•	•	•	•	•	•	•	•

## Megakaryoblast Markers

<b>Human</b>																				
CD34 (Mucosalin)	0349	4H11	•			•	•					•		•		•		•		
CD36	0369	eBioNL07	•				•					•						•		
CD41 (Integrin αIIb)	0419	H1P8	•	•			•					•		•						
CD61 (Integrin β3)	0519	VI-PL2	•	•		•	•					•		•						
HLA-DR	9956	LN3	•	•			•	•		•		•		•	•	•	•		•	
<b>Mouse</b>																				
CD34 (Mucosalin)	0341	RAM34	•	•			•	•				•					•	•	•	
CD36	0361	No.72-1	•				•							•				•		
CD41 (Integrin αIIb)	0411	eBioMWRreg30	•		•		•	•	•	•		•		•		•				
CD61 (Integrin β3)	0611	2C9.G3	•	•			•	•	•			•		•						

## Monoblast Markers

<b>Human</b>																				
CD11c	0116	3.9	•	•			•	•				•		•		•	•		•	
CD13	0138	WM-15	•	•			•					•		•			•			
CD15	0159	H198	•	•			•	•				•								
CD33	0038	WM-53	•	•	•		•					•		•	•	•			•	
CD115 (FMS)	1159	12-3A3-1B10	•	•	•	•		•	•					•						
CD116 (GM-CSFR)	1169	4H1	•				•	•				•		•						
<b>Mouse</b>																				
CD11c	0114	N418	•	•	•		•	•	•			•	•	•	•	•	•	•	•	•
CD115 (FMS)	1152	AF598	•	•		•	•	•						•			•			

Myeloblast Markers	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>IC</sup>	eFluor™ 650 <sup>IC</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
<b>Human</b>																					
CD13	0138	WM-15	•	•				•					•		•			•			
CD15	0159	HI98	•	•				•	•				•								
CD33	0038	WM-53	•	•	•			•					•		•	•	•			•	

### Pro-Erythroblast Markers

<b>Human</b>																				
CD71 (Transferrin Receptor)	0719	OKT9	•					•	•				•		•					
CD105 (Endoglin)	1057	SN6	•				•	•							•			•		
<b>Mouse</b>																				
CD71 (Transferrin Receptor)	0711	R17217	•				•	•	•				•		•					
CD105 (Endoglin)	1051	MJ7/18	•	•	•	•		•	•	•					•					
TER-119	5921	TER-119	•	•	•	•		•	•	•	•		•		•	•	•	•		•


### HSC Markers (negative)

<b>Human</b>																				
CD2	0029	RPA-2.10	•	•		•	•	•	•				•		•			•		
CD3	0037	OKT3	•				•	•	•	•	•		•	•	•	•	•	•	•	•
CD4	0048	OKT4	•		•			•	•	•	•		•	•	•	•	•	•	•	•
CD10	0106	eBioCB-CALLA	•					•	•	•			•				•	•		
CD13	0138	WM-15	•	•				•					•		•			•		
CD14	0149	61D3	•	•			•	•	•	•			•		•			•		
CD15	0159	HI98	•	•				•	•				•							
CD16	0168	eBioCB16	•					•	•	•	•		•		•					
CD19	0198	HIB19	•	•			•	•	•	•	•		•	•	•	•	•	•	•	•
CD20	0209	2H7	•	•				•	•		•		•		•	•	•	•	•	•
CD24	0247	eBioSN3	•					•	•				•		•					
CD33	0338	WM-53	•	•	•			•					•		•	•	•			•
CD36	0369	eBioNL07	•					•					•						•	
CD38	0388	HIT2	•	•				•	•				•		•			•	•	•
CD45 (LCA)	0459	HI30	•	•				•	•		•		•		•	•	•	•	•	•
CD45R	0452	RA3-6B2	•	•	•		•	•	•	•	•		•	•	•	•	•	•	•	•
CD48	0489	eBio156-4H9	•				•	•							•					
CD56 (NCAM)	0568	CB56	•					•	•				•							
CD138 (Syndecan-1)	1389	DL-101	•	•				•					•		•					
GATA-3	9966	TWJ	•			•		•							•				•	
Human Hematopoietic Lineage Flow Cocktail	7778	--	•										•							
<b>Mouse</b>																				
CD2	0021	RM2-5	•	•			•	•	•				•		•					
CD3	0031	145-2C11	•	•		•	•	•	•	•			•	•	•	•	•	•	•	•
CD4	0041	GK1.5	•	•	•			•	•	•	•		•	•	•	•	•	•	•	•
CD14	0141	Sa2-8	•		•	•		•	•				•		•			•		
CD16	0161	93	•				•	•	•	•			•		•	•	•	•		•
CD19	0191	eBio1D3	•	•	•		•	•	•		•		•		•	•	•	•	•	•
CD20	0201	ALS812	•				•								•					
CD24	0242	M1/69	•	•		•	•	•	•	•			•		•					
CD36	0361	No. 72-1	•					•							•				•	
CD38	0381	90	•	•			•	•	•				•		•			•	•	•
CD45 (LCA)	0451	30-F11	•	•	•		•	•	•	•			•		•	•	•	•	•	•
CD45R (B220)	0452	RA3-6B2	•	•	•		•	•	•	•	•		•	•	•	•	•	•	•	•
CD48	0481	HM48-1	•		•	•		•	•				•		•			•		
GATA-3	9966	TWJ	•			•		•							•				•	
Mouse Hematopoietic Lineage Flow Cocktail	7773	--	•							•										

\* To view the **full listing of product formats**, please enter the product code into the search field of our website [www.eBioscience.com](http://www.eBioscience.com)

## HSC Markers (positive)

	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>HC</sup>	eFluor™ 650 <sup>HC</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
<b>Human</b>																					
CD31 (PECAM1)	0319	WM-59	•	•				•	•				•		•			•			
CD34 (Mucosalin)	0349	4H11	•			•	•						•		•			•			
CD44	0441	IM7	•	•	•	•	•	•	•	•			•		•			•		•	•
CD59 (Protectin)	0597	MEM-43	•										•		•						
CD84	0849	2G7	•	•					•												
CD90 (Thy-1)	0909	eBio5E10	•	•	•	•		•	•				•		•			•			
CD93 (C1qRp)	0939	R139	•		•	•												•			
CD105 (Endoglin)	1057	5N6	•				•	•							•			•			
CD106 (VCAM-1)	1069	5TA	•	•				•	•						•						
CD117 (c-kit)	1179	YB5.B8	•	•	•			•	•						•			•			
CD184 (CXCR4)	9999	12G5	•				•	•	•						•			•			
CD325 (N-Cadherin)	3259	8C11	•	•	•	•		•							•						
CD338 (ABCG2)	8888	5D3	•					•	•						•						
Notch1	5785	mN1A	•	•		•		•	•						•						
WASP (Wiskott-Aldrich Syndrome Protein)	6887	polyclonal		•		•		•													
<b>Mouse</b>																					
CD31 (PECAM1)	0311	390	•	•	•		•	•	•	•			•		•			•			
CD34 (Mucosalin)	0341	RAM34	•	•				•	•				•					•	•	•	
CD44	0441	IM7	•	•	•	•	•	•	•	•	•		•		•			•		•	•
CD90 (Thy-1)	0901	G7	•	•			•	•													
CD93 (C1qRp)	5892	AA4.1	•	•				•	•				•		•			•			
CD105 (Endoglin)	1051	MJ7/18	•	•	•	•		•	•	•					•						
CD106 (VCAM-1)	1061	429	•	•	•		•	•	•				•						•		
CD117 (c-Kit)	1171	2B8	•		•			•	•				•					•		•	•
CD150 (SLAM)	1502	mShad150	•												•			•			
CD184 (CXCR4)	9991	2B11	•	•		•	•	•					•		•			•			
CD201 (EPCR)	2012	eBio1560	•	•			•	•	•						•						
Endomucin	5851	eBioV.7C7	•	•	•	•		•											•		
Flk-1 (VEGF-R2)	5821	Avas12a1	•	•		•		•	•						•			•		•	
Notch1	5785	mN1A	•	•		•		•	•						•						
Sca-1 (Ly-6A/E)	5981	D7	•		•	•		•	•	•			•		•			•		•	
Wiskott-Aldrich Syndrome Protein (WASP)	6887	polyclonal		•		•		•													

 Please visit [eBioscience.com](http://eBioscience.com) as new stem cell products are launched regularly.

## Recombinant Proteins for HSC Culture

Human			
Description	Product Code *	Affinity Purified	Carrier-Free
BMP-2	8507	•	
EGF	8988	•	
Flt-3L	8358	•	•
G-CSF	8979	•	
GM-CSF	8339	•	•
HGF	8439	•	•
IGF-2	8505	•	
IL-6	8069	•	•
IL-7	8079	•	•
M-CSF	8985	•	
PDGF-BB	8501	•	
SCF	8349	•	•
TGFβ	8348	•	•
VEGF	8359	•	•
Mouse			
Description	Product Code *	Affinity Purified	Carrier-Free
G-CSF	8971	•	
EGF	8984	•	
GM-CSF	8331	•	•
HGF	8431	•	•
IL-3	8031	•	•
IL-6	8061	•	•
IL-7	8071	•	•
M-CSF	8983	•	
PDGF-AA	8989	•	
SCF	8341	•	•
VEGF	8351	•	•



Please visit [eBioscience.com](http://eBioscience.com) as new stem cell products are launched regularly.



**Cancer Stem Cell Key Products:**

- Anti-Human CD133 (cat. 1338)
- Anti-Human EpCAM (cat. 9326)
- Anti-Human CD24 (cat. 0247)
- Anti-Human CD96 (cat. 0969)

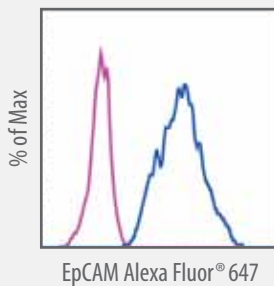
# Cancer Stem Cells

The principles of stem cell biology have been used to shed light on the etiology of various malignancies. In 1997, John Dick et al demonstrated that acute myeloid leukemia (AML) was not maintained by the bulk tumor, but rather by rare “cancer stem cells” (CSC) with a CD34<sup>+</sup>CD38<sup>lo</sup> phenotype. Since then this concept has been used to demonstrate the existence of rare cancer stem cells responsible for tumor propagation in other cancers including CD44<sup>+</sup>CD133<sup>+</sup>α2β1<sup>+</sup> prostate CSC, CD133<sup>+</sup> CNS CSC and CD44<sup>+</sup>EpCam<sup>+</sup>CD24<sup>+</sup> pancreatic CSC. The CSC model of tumor development states that tumors, like normal adult tissues, contain a subset of cells that both self renew and give rise to differentiated progeny. As in other tissues, the stem cells are a minority of the tumor, and are the only cells that can maintain tumor growth indefinitely. The remaining cells, though actively proliferating and making up the majority of the cells in the tumor, are differentiating and destined for cell-death. The self renewal properties of CSCs are thus responsible for maintaining tumor growth. The identification of markers that allow the isolation of CSCs from tumor tissues will allow us to develop an understanding of several important biological properties of CSCs. Current cancer therapies are largely unsuccessful for complete tumor eradication. The CSC concept promises to shed greater light on the reasons for this and the true origin of a cancer tumor.

**(Left) Anti-Human EpCAM (TROP-1):**

Staining of A549 human lung carcinoma cells with Alexa Fluor® 647 Mouse IgG1, K Iso Cntrl (pink histogram) (cat. 51-4714) or Alexa Fluor® 647 anti-human EpCAM (blue histogram) (cat. 51-9326). Total viable cells were used for analysis.

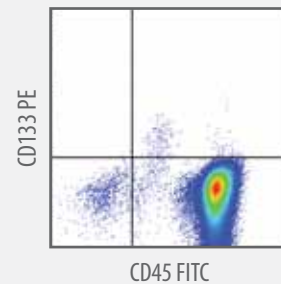
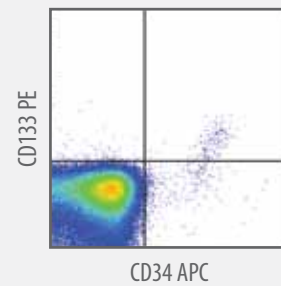
Anti-Human EpCAM



**(Right) Anti-Human CD133:**

Staining of normal human peripheral blood mononuclear cells with PE anti-human CD133 (cat. 12-1339) and either APC anti-human CD34 (top) (cat. 17-1349) or FITC anti-human CD45 (bottom) (cat. 11-0459). Cells in the lymphocyte gate were used for analysis.

Anti-Human CD133



## Cancer Stem Cell Markers

	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>1c</sup>	eFluor™ 650 <sup>1c</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
<b>Human</b>																					
CD7	0079	eBio124-1D1	•					•	•						•			•		•	
CD10	0106	eBioCB-CALLA	•					•	•				•		•		•				
CD18 (Integrin β2)	0187	CLB-LFA-1/1	•					•					•	•							
CD19	0199	HIB19	•	•			•	•	•	•			•	•	•	•	•	•	•	•	
CD20	0209	2H7	•	•				•	•		•			•	•	•	•		•	•	
CD24	0247	eBio5N3	•					•	•				•		•						
CD27	0279	O323	•					•	•		•			•		•			•	•	
CD29 (Integrin β1)	0299	TS2/16	•	•	•		•	•					•		•						
CD31 (PECAM1)	0319	WM-59	•	•				•	•				•		•			•			
CD33	0338	WM-53	•	•	•			•					•		•	•	•			•	
CD34 (Mucosalin)	0349	4H11	•			•	•	•					•		•		•		•		
CD38	0389	HIT2	•	•				•	•				•		•		•		•	•	
CD44	0441	IM7	•	•	•	•	•	•	•	•			•		•	•	•	•	•	•	
CD49b (Integrin α2)	0498	eBioY418	•				•	•					•								
CD49f (Integrin α6)	0495	eBioGoH3	•	•	•			•	•						•						
CD74	0749	LN2	•	•	•			•	•				•								
CD90 (Thy-1)	0909	eBio5E10	•	•	•	•		•	•				•		•	•		•			
CD96 (Tactile)	0969	NK92.39	•												•						
CD105 (Endoglin)	1057	5N6	•				•	•							•				•		
CD117 (c-Kit)	1179	YB5.B8	•	•	•			•	•						•				•		
CD123 (IL-3Ra)	1239	6H6	•	•				•	•	•			•		•	•	•	•			
CD133 (Prominin-1)	1338	TMP4	•					•	•						•				•		
CD138 (Syndecan-1)	1389	DL-101	•	•				•					•		•						
CD184 (CXCR4)	9999	12G5	•				•	•							•		•				
CD324 (E-Cadherin)	3249	DECMA-1	•	•	•	•	•	•											•		
CD338 (ABCG2)	8888	5D3	•					•	•				•								
EpCAM (TROP-1)	9326	1B7	•	•	•	•		•							•				•		
Nestin	9843	10C2		•		•		•													
Notch1	5785	mN1A	•	•		•		•	•						•						
Podoplanin	9381	NZ-13	•	•	•	•		•							•						
SSEA-1	8813	eBioMC-480	•	•	•			•	•					•	•				•		
SSEA-3	8833	eBioMC-631	•	•				•	•					•	•						
SSEA-4	8843	eBioMC-813-70	•	•				•	•					•	•						
STRO-1	TBD	eBioStro-1	•	•				•											•		
TRA-1-60	8863	TRA-1-60	•	•	•	•		•	•						•						
<b>Mouse</b>																					
CD18 (Integrin β2)	0181	M18/2	•	•	•	•	•	•	•				•		•						
CD19	0193	eBio1D3	•	•	•		•	•	•	•			•		•	•	•	•	•	•	
CD20	0201	ALS12	•			•		•							•						
CD24	0242	M1/69	•	•		•	•	•	•	•			•		•	•					
CD27	0271	LG.7F9	•		•		•	•	•				•		•				•		
CD29 (Integrin β1)	0291	eBioHmB1-1	•	•	•		•	•	•						•		•		•		
CD31 (PECAM1)	0311	390	•	•	•		•	•	•	•			•		•		•		•		
CD34 (Mucosalin)	0341	RAM34	•	•				•	•				•		•			•	•	•	
CD38	0381	90	•	•			•	•	•				•		•			•	•	•	
CD44	0441	IM7	•	•	•	•	•	•	•	•			•		•	•	•	•	•	•	
CD49b (Integrin α2)	0491	HMa2	•	•			•	•	•				•								
CD49f (Integrin α6)	0495	eBioGoH3	•	•	•			•	•						•						
CD90 (Thy-1)	0901	G7	•	•			•	•													
CD105 (Endoglin)	1051	MJ7/18	•	•	•	•		•	•	•					•						
CD117 (c-Kit)	1171	2B8	•		•			•	•				•		•		•		•	•	
CD123 (IL-3Ra)	1231	5B11	•					•	•				•		•				•		
CD133 (Prominin-1)	1331	13A4	•	•	•	•		•	•				•	•	•			•			

\* To view the **full listing of product formats**, please enter the product code into the search field of our website [www.eBioscience.com](http://www.eBioscience.com)

Cancer Stem Cell (cont.)	Product Code *	Clone	Application					Purified	Biotin	eFluor™ 450	eFluor™ 605 <sup>HC</sup>	eFluor™ 650 <sup>HC</sup>	FITC	Alexa Fluor® 488	PE	PerCP-Cy5.5	PE-Cy7	APC	Alexa Fluor® 647	Alexa Fluor® 700	APC-eFluor™ 780
			FC	IHC	IP	WB	FA														
Mouse (cont.)																					
CD166 (Alcam)	1661	eBioALC48	•	•			•							•							
CD184 (CXCR4)	9991	2B11	•	•		•	•						•	•				•			
CD324 (E-Cadherin)	3249	DECMA-1	•	•	•	•	•											•			
EpCAM (TROP-1)	5791	G8.8	•	•	•		•							•							
Notch1	5785	mN1A	•			•	•	•						•							
Podoplanin	5381	eBio8.1.1	•	•	•	•	•						•								
SSEA-1	8813	eBioMC-480	•	•	•		•	•					•	•				•			
SSEA-3	8833	eBioMC-631	•	•			•	•					•	•							

# OTHER PRODUCTS

## Functional Dyes


eBioscience now offers functional dyes for the analysis of cellular viability and proliferation, apoptosis, and for the measurement of intracellular Ca<sup>2+</sup> levels.

Function	Description	Product Code *
Viability	Calcein, AM	65-0853
	Calcein Violet	65-0854
	Calcein Blue	65-0855
Cell Proliferation	CFSE	65-0850
Calcium Sensing	Fura-2, AM	65-0858
	Indo-1, AM	65-0856
Mitochondrial Membrane Depolarization Detection	JC-1	65-0851
	JC-10	65-0852

## Stem Cell ELISA and ELISPOT

eBioscience offers ELISA Ready-SET-Go!™ Sets, Ready-SET-Go!™ Kits (with pre-coated plates) and ELISPOT Ready-SET-Go!™ Sets to assay the expression of key stem cell cytokines and growth factors.

Human	
Description	Product Code *
GM-CSF ELISA Ready-SET-Go! Set	88-6339
IL-6 ELISA Ready-SET-Go! Set	88-7066
IL-6 ELISA Ready-SET-Go! Kit	88-7966
IL-6 ELISPOT Ready-SET-Go!	88-7869
TGFβ1 ELISA Ready-SET-Go! Set	88-7344
TGFβ1 ELISA Ready-SET-Go! Kit	88-7449
TNFα ELISA Ready-SET-Go! Set	88-7346
TNFα ELISA Ready-SET-Go! Kit	88-7347
TNFα ELISPOT Ready-SET-Go!	88-7398
Mouse	
Description	Product Code *
GM-CSF ELISA Ready-SET-Go! Set	88-7334
IL-6 ELISA Ready-SET-Go! Set	88-7064
IL-6 ELISA Ready-SET-Go! Kit	88-7964
IL-6 ELISPOT Ready-SET-Go!	88-7864
TGFβ1 ELISA Ready-SET-Go! Set	88-7344
TGFβ1 ELISA Ready-SET-Go! Kit	88-7449
TNFα ELISA Ready-SET-Go! Set	88-7324
TNFα ELISA Ready-SET-Go! Kit	88-7342
TNFα ELISPOT Ready-SET-Go!	88-7328

 Please visit [eBioscience.com](http://eBioscience.com) as new stem cell products are launched regularly.

# SUPPORT PRODUCTS

## Stem Cell Support Products

eBioscience provides a comprehensive portfolio of support products for stem cell analysis including reagents required for their culture, collection, isolation and characterization.

Human		
Description	Product Code *	Format
7-AAD Viability Staining Solution	6993	--
Accumax™ - Cell Aggregate Dissociation Medium	4666	--
Accutase™ - Enzyme Cell Detachment Medium	4555	--
Annexin V Apoptosis Detection Kit	8005	FITC
	8007	APC
Anti-APC	4170	Biotin
	4170	Purified
Anti-PE	4120	Biotin
	4120	Purified
Anti-BrdU	6071	FITC
	6071	Purified
Anti-mouse CD16/32 - blocks Fc binding	0161	Purified
	0161	Functional Grade™
Brefeldin A Solution	4506	--
CFSE	0850	--
eFluor™ NC Flow Cytometry Staining Buffer	3222	--
Fixation & Permeabilization Kit	8823	--
Flow Cytometry Staining Buffer	4222	--
Foxp3 Fixation/Permeabilization Concentrate	5123	--
Foxp3 Fixation/Permeabilization Diluent	5223	--
Foxp3 Fixation/Permeabilization Concentrate and Diluent	5521	--
Foxp3 Staining Buffer Set	5523	--
	9161	Purified
Human FcγR-Binding Inhibitor	9161	Functional Grade™
	7778	FITC
Human Hematopoietic Lineage Flow Cocktail	7778	FITC
IC Fixation Buffer	8222	--
Monensin Solution	4505	--
Mouse Hematopoietic Lineage Flow Cocktail	7773	eFluor™ 450
Mouse Hematopoietic Lineage Flow Panel	7774	Biotin
Normal Mouse Serum	5544	--
Normal Rat Serum	5555	--
Permeabilization Buffer	8333	--
Propidium Iodide Staining Solution	6990	--
Red Blood Cell Lysis Buffer, 1X	4333	--



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## References:

**Induced pluripotent stem cells: current progress and potential for regenerative medicine.**

Amabile G, Meissner A. Trends Mol Med. 2009 Feb;15(2):59-68. Review.

**The promise of human induced pluripotent stem cells for research and therapy.**

Nishikawa S, Goldstein RA, Nierras CR. Nat Rev Mol Cell Biol. 2008 Sep;9(9):725-9. Review.

**Differentiation of embryonic stem cells to clinically relevant populations: lessons from embryonic development.**

Murry CE, Keller G. Cell. 2008 Feb 22;132(4):661-80. Review.

**Generation and regeneration of cells of the liver and pancreas.**

Zaret KS, Grompe M. Science. 2008 Dec 5;322(5907):1490-4. Review.

**Novel perspectives of neural stem cell differentiation: from neurotransmitters to therapeutics.**

Trujillo CA, Schwindt TT, Martins AH, Alves JM, Mello LE, Ulrich H. Cytometry A. 2009 Jan;75(1):38-53. Review.

**Mesenchymal stem cells as a potential pool for cartilage tissue engineering.**

Csaki C, Schneider PR, Shakibaei M. Ann Anat. 2008 Nov 20;190(5):395-412. Review.

**Embryonic stem cell differentiation: emergence of a new era in biology and medicine.**

Keller G. Genes Dev. 2005 May 15;19(10):1129-55. Review.

**The origins of the identification and isolation of hematopoietic stem cells, and their capability to induce donor-specific transplantation tolerance and treat autoimmune diseases.**

Weissman IL, Shizuru JA. Blood. 2008 Nov 1;112(9):3543-53. Review.


**Cancer stem cell-directed therapies: recent data from the laboratory and clinic.**

Park CY, Tseng D, Weissman IL. Mol Ther. 2009 Feb;17(2):219-30. Review.

**Cancer stem cell markers in common cancers - therapeutic implications.**

Klonisch T, Wiechec E, Hombach-Klonisch S, Ande SR, Wesselborg S, Schulze-Osthoff K, Los M. Trends Mol Med. 2008 Oct;14(10):450-60. Review.

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		Blue (488 nm)	FITC (518 nm)		PE (575 nm)							PE-Cy5 (667 nm)	PerCP-Cy5.5 (695 nm)	PerCP-eFluor® 710	PE-Cy7 (785 nm)
			AF 488 (519 nm)												
		Yellow / Green (532-561 nm)			PE (575 nm)							PE-Cy5 (667 nm)			PE-Cy7 (785 nm)
		Red (635-655 nm)								APC (660 nm)				AF 700 (723 nm)	APC-eFluor® 780
								AF 647 (668 nm)							
								eFluor® 660							
	Proliferation	Blue (488 nm)	CFSE (521 nm)												
		Red (635-655 nm)								CPD eFluor® 670					
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Calcein Violet AM (452 nm)															
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Red (635-655 nm)								FVD eFluor® 660					FVD eFluor® 780		

**Note:** Peak emission for eFluor® dyes is noted in the name. Peak emission for all other dyes is shown in parentheses. Before combining reagents in multicolor experiments, always refer to your specific system configuration.

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