

Teratoma Formation Analysis

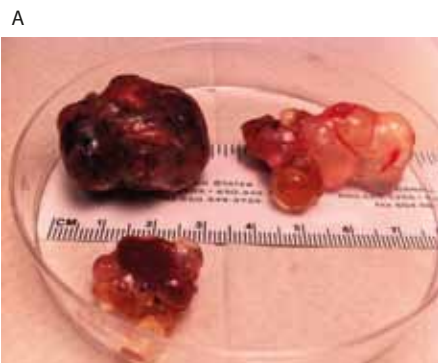
Applied StemCell offers an all-inclusive Teratoma Formation Analysis Service for the characterization of pluripotent human and mouse ES/iPS cells. Publication-quality images and a summary report including a list of identified tissues will be provided.

HIGHLIGHTS

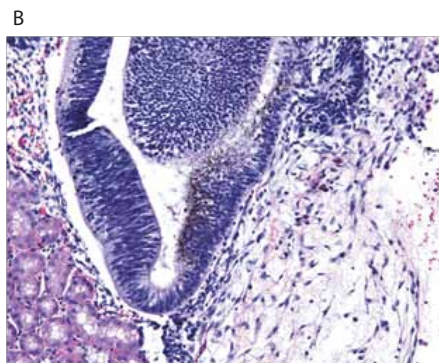
Cost effective: Fast turnaround time in as short as four weeks requiring only 0.5 million cells per injection site.

Efficient: We perform both kidney and subcutaneous injections with >90% success rate of teratoma formation.

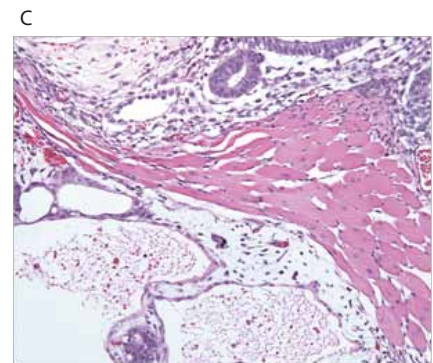
ASC-6008 Teratoma Formation Analysis \$2,900 / Cell line



A. Gross picture of teratomas formed in SCID mouse after injection of hESCs. Top: Tumors formed in left and right testes. Bottom: Tumor formed in kidney capsule.



B. Histology image of a teratoma. Shown in this picture are neurons and pigment cells, which represent the ectoderm.



C. Striated muscle cells differentiated from pluripotent cells, representing the mesoderm.

References:

F.-J. Müller, J. Goldmann, P. Löser, J. F. Loring, *Cell stem cell*. 6, 412-4 (2010)
N. Maherali, K. Hochedlinger, *Cell stem cell*. 3, 595-605 (2008)

ESC/iPSC Characterization Kit

Our Embryonic Stem Cell / induced Pluripotent Stem Cell (ESC/iPSC) Characterization Kits provide a convenient tool to confirm the pluripotency of human or mouse ES/iPS cell lines. We compiled a panel of antibodies against well-established ES/iPS cell-specific pluripotency markers as well as reagents to perform alkaline phosphatase activity assays.

HIGHLIGHTS

All-in-one: Each kit includes a panel of pluripotency biomarkers.

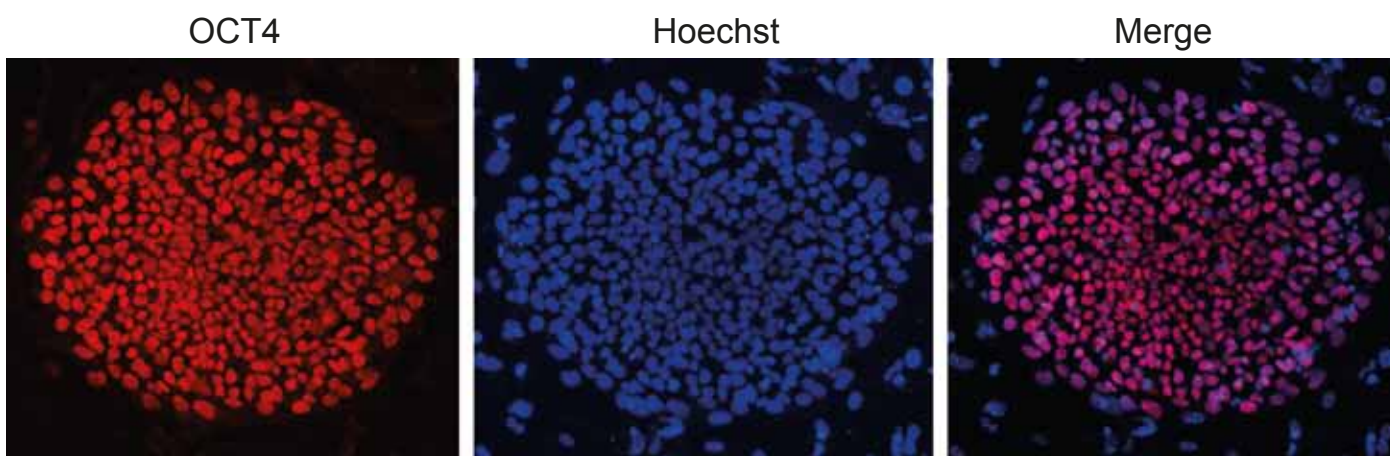
Human: Antibodies against OCT4, SOX2, SSEA3, TRA-1-60, TRA-1-81
Alkaline Phosphatase activity assay

Mouse: Antibodies against Oct4, Sox2, Ssea1
Alkaline Phosphatase activity assay

Flexible: Secondary antibodies with different colors available upon request.

Convenient: The ready-to-use kit contains all buffers and solutions needed to perform immunocytochemical and enzyme activity analysis.

ASK-3005	Mouse ESC/iPSC Characterization Kit (20 reactions)	\$399
ASK-3006	Human ESC/iPSC Characterization Kit (20 reactions)	\$579



Human ES cells expressing OCT4

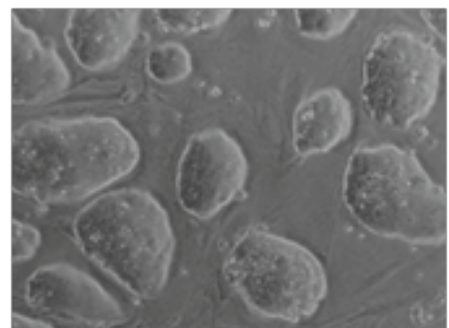
ES/iPS Cell Services

Stringent molecular and functional assays to evaluate pluripotency criteria and to rule out genetic aberrations are commonly required for publication of a newly generated ES or iPS cell line. We offer all services needed for a complete characterization of your pluripotent cell lines.

Mouse Embryonic Stem Cell Derivation

Our scientists have successfully derived over 80 new mouse embryonic stem cell lines, including those from gene targeted embryos.

ASC-6001 \$2900 / line



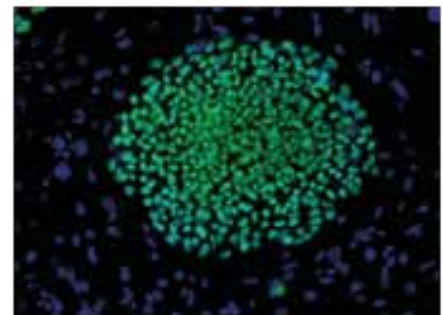
Stem Cell Derivation

Pluripotency characterization

Pluripotent cell lines are characterized by the expression of marker genes which can be visualized by immunocytochemistry. We do the staining procedure for you and provide you with high-definition publication-grade images.

Mouse ES/iPS cell pluripotency characterization

ASC-6006 \$599 / line



Pluripotency characterization

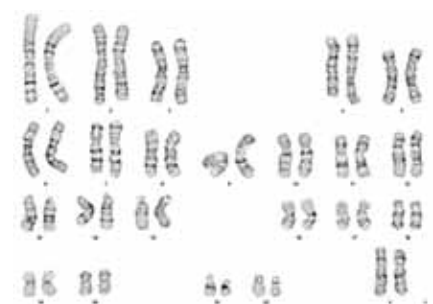
Karyotyping

Prolonged culture of pluripotent cell lines can result in genetic abnormalities, most commonly in aneuploidy. This gain of chromosomes can be easily detected by G-banding of metaphase spreads. We analyze at least 40 cells and provide you with images for your publication.

ASC-6003-C (Chromosome Counting) \$300 / line

ASC-6003-GM (G-banding/mouse) \$650 / line

ASC-6003-GH (G-banding/human) \$700 / line



G-banding / Karyotyping

Sex determination

Is it a boy or a girl? We will give you the answer.

ASC-6004 \$200 / line

Service

Characterization

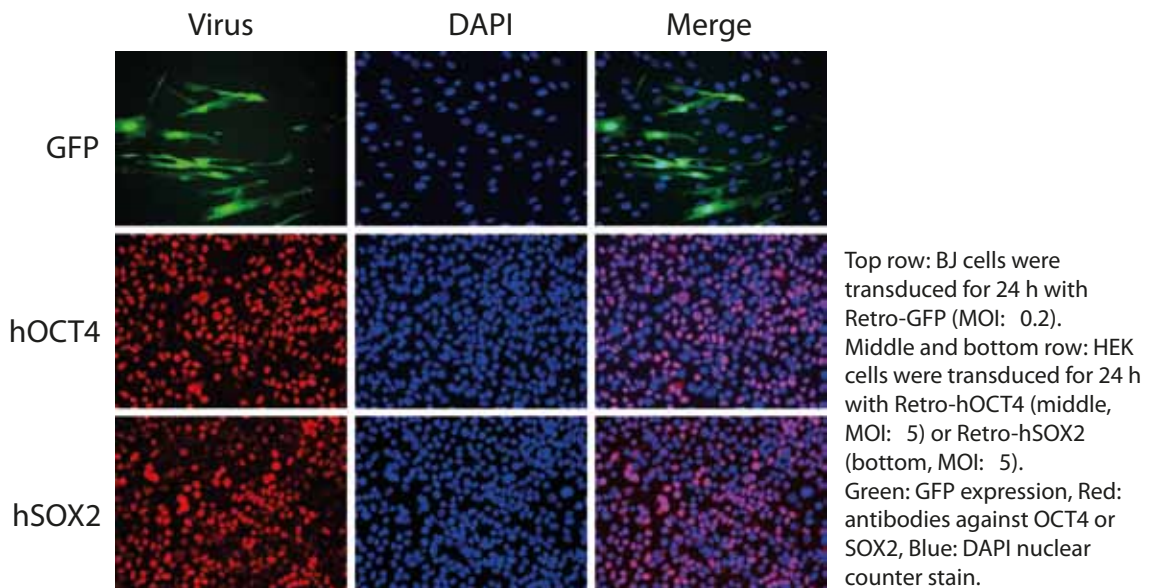
iPS Cell Generation Kit

Somatic cells can be reprogrammed to induced pluripotent stem cells (iPSC) by introducing reprogramming factors. Viral transduction is still the most efficient reprogramming method to date. Our Retrovirus iPSC Cell Generation Kit is ready to use – just thaw the vials and add the content to your cells. We prefer using retrovirus as they tend to silence better than lentivirus.

Kit Components:


- 1. Four ready-to-use retroviral reprogramming factors**
Full-length human genes: OCT4, SOX2, KLF4, LMYC
- 2. Retro-GFP** Quantify transduction efficiency for your specific cells
- 3. Polybrene** Enhance your transduction efficiency
- 4. Basal hiPS cell medium** Just add supplements and FGF2
- 5. Feeder cells** Pick your reprogrammed colonies and plate them on our ready-to-use mouse embryonic fibroblasts

ASK-3011 iPS Cell Generation Kit (up to 4 reactions) \$1200



Individual Retrovirus (packaged, 1ml, \$230 each) are also available:
 ASR-2000 GFP ASR-2001 hLMYC
 ASR-2002 hKLF4 ASR-2003 hOCT4
 ASR-2004 hSOX2

Reference: K. Takahashi et al., Cell. 131, 861-72 (2007)



Fast & Site-Specific Transgenic Service

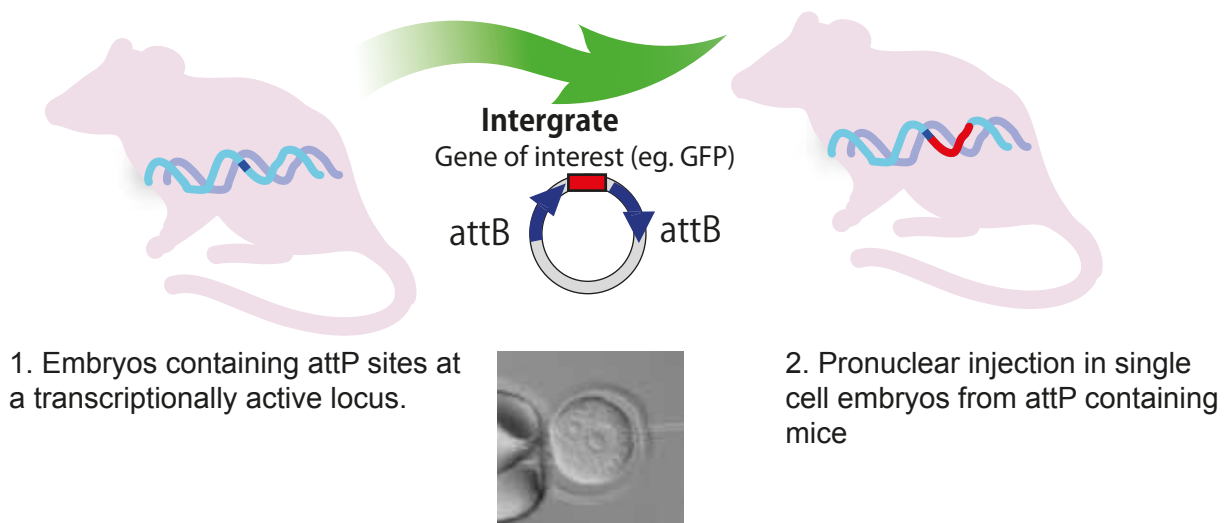
Do you need a transgenic / knock-in mouse model? Applied StemCell can create site-specific transgenic mice for you with a turnaround time as fast as 3 months. Using our novel TARGATT™ system, a gene of interest can be specifically inserted at a well-characterized, transcriptionally active locus in the mouse genome with guaranteed transgene expression. Tissue specific and / or ubiquitous expression options are available.

	TARGATT™ System	Traditional Methods
Site-Specific	Yes	No
Transgene Expression	Yes	Variable or Silenced
Stable Expression	Yes	Variable or Silenced
Transgene Copy Number	One copy	Multiple Copies
Turnaround Time	3 Months	6 Months
Cost from DNA to Mouse	Inquire	>\$15,000

Reference: Tasic B. et al. Site-specific integrase-mediated transgenesis in mice via pronuclear injection. Proc Natl Acad Sci USA (2011) [Epub ahead of print]



TARGATT™ System



TARGATT™ Fast & Site-Specific Transgenic Service (full service) :
Please contact us for details and pricing.

Mouse

Gene Modification

Fast! Transgenic Mice
TARGATT™ Embryos & Transgenic Kit

If you prefer making your site-specific transgenic mice in your own lab, you can purchase our **TARGATT™** Embryo and Transgenic Kit.

AST-0001	TARGATT™ H11 Embryos (Fresh, 50 Embryos)	\$2,650
AST-0002	TARGATT™ H11 Embryos (Frozen, 50 Embryos)	\$2,950
AST-0003	TARGATT™ Rosa26 Embryos (Fresh, 50 Embryos)	\$2,650
AST-0004	TARGATT™ Rosa26 Embryos (Frozen, 50 Embryos)	\$2,950
AST-1001	TARGATT™ Transgenic Kit (5 rounds of microinjections)	\$869
AST-1002	TARGATT™ Transgenic Kit (2 rounds of microinjections)	\$399

MTA is required upon ordering.

Kit

Gene Modification

Knock-out/in Mice

Our Transgenic Service for the generation of genetically modified mice includes the design of the gene targeting vector, ES cell targeting, and blastocyst injection or tetraploid complementation.

Cost effective: Applied StemCell uses tetraploid complementation technology in combination with our proprietary mESC lines to generate gene targeted mice completely derived from injected ES cells, thus eliminating the time-consuming breeding process and saving at least 3 to 5 months compared to traditional blastocyst injection methods.

High Quality: Our scientists have extensive experiences in gene targeting and genetic mouse models.



Tetraploid complementation

or



Chimera from blastocyst injection

- Gene targeting vector construction
- ES cell targeting
- Cre/FLP recombination
- Germline transmission by tetraploid complementation
- Chimera production by blastocyst injection

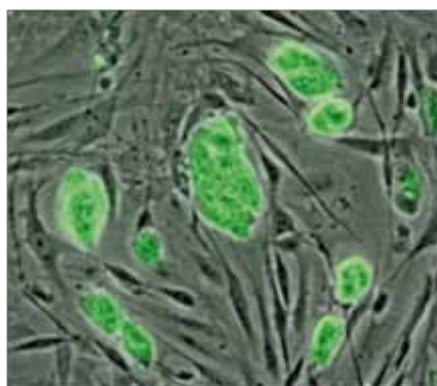
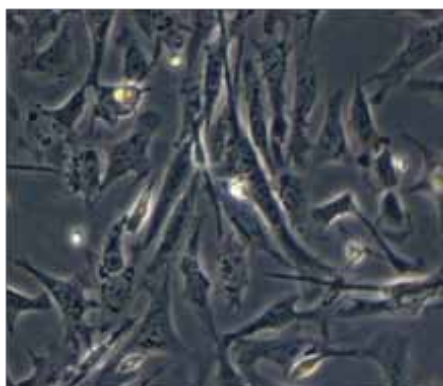
Mouse

Gene Modification

MEF Cells (Mouse Embryonic Fibroblasts)

Applied StemCell provides high quality Mouse Embryonic Fibroblast (MEF) cells as feeder layers for ES/iPS cell cultures. We have a broad selection of MEF products including neomycin resistant, DR4 (resistant to neomycin, hygromycin, puromycin and 6-thioguanine), and CF-1 MEF cells. In addition, we provide MEF cells that are untreated at P2 or treated (irradiated or Mitomycin-C treated) at P3. Each batch of MEF products passes high quality control standards, is tested for its ability to support undifferentiated ES/iPS cell growth, and is mycoplasma free.

DR4 P2 untreated	ASF-1001	1x10 ⁶ cells	\$180
DR4 P3 irradiated	ASF-1013	4x10 ⁶ cells	\$120
	ASF-1015	2x10 ⁶ cells	\$70
CF-1 P2 untreated	ASF-1201	1x10 ⁶ cells	\$90
CF-1 P3 irradiated	ASF-1213	4x10 ⁶ cells	\$45
	ASF-1215	2x10 ⁶ cells	\$35
CF-1 P3 mitomycin-C treated	ASF-1223	4x10 ⁶ cells	\$45
	ASF-1225	2x10 ⁶ cells	\$35
Neo resistant P2 untreated	ASF-1101	1x10 ⁶ cells	\$90
Neo resistant P3 irradiated	ASF-1113	4x10 ⁶ cells	\$45
	ASF-1115	2x10 ⁶ cells	\$35



Germline Transmission Tested ESC-Sure™ Fetal Bovine Serum (FBS)

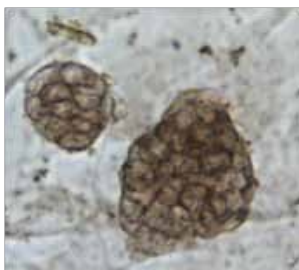
Are you culturing mouse ES cells for knock-out/in mice? Our ESC-Sure™ Fetal Bovine Serum (FBS) is the only serum product on the market that is tested for germline transmission of mouse ES cells. Why not save your time by taking advantage of tested serum?

Germline transmission tested!
Ready to use (no heat inactivation needed)
Toxin free

Mycoplasma free
Virus free
Competitive pricing

Each batch of our ESC-Sure™ FBS is put through a series of quality assurance tests: ESCs are cultured in ESC-Sure™ FBS-containing medium for more than 5 passages and then tested for normal morphology, karyotype, pluripotency and germline transmission via tetraploid blastocyst injection. Moreover, ESC-Sure™ FBS is quality tested after several freeze/thaw cycles.

mESCs in ESC-Sure™ FBS maintain normal morphology and pluripotency



Alkaline phosphatase



Germline transmission test by tetraploid complementation



Pup derived from injected mESCs (agouti)

ESC-Sure™ Fetal bovine serum, Germline transmission tested		
ASM-5006	100 ml	\$95.00
ASM-5007	500 ml	\$320.00

ESC/iPSC Culture Media

MEF Conditioned Medium

Conditioned Medium is harvested from cultured MEF cells. It contains growth factors and extracellular matrix proteins secreted into the medium by MEF cells. Human ES and iPS cells are guaranteed to maintain pluripotency in this feeder-free culture system. Applied StemCell's ESC-Sure™ Conditioned Medium is a convenient, high quality medium to support human ES and iPS growth.

ASM-5008 100 ml \$120

ESC-Sure™ Serum and Feeder Free Medium (SFFM)

ESC-Sure™ SFFM is optimized for human ES/iPS cell culture in a serum- and feeder-free system. SFFM is ready-to-use and supports and maintains pluripotency of hES/iPS cells.

ASM-5010 100 ml \$99

ESC-Sure™ mESC Mate

ESC-Sure™ mESC Mate contains all the growth factors and supplements required for mESC culture. To make complete medium for mESC culture, simply add the ESC-Sure™ mESC Mate to DMEM. Our quality testing ensures consistent culture conditions and a long shelf life of 6 months.

ASM-5011 100 ml \$200

ESC-Sure™ Basal Medium

ESC-Sure™ Basal Medium is optimized and tested for mouse and human ES and iPS cell culture.

DMEM medium

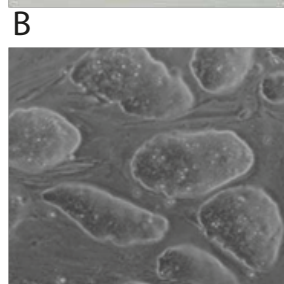
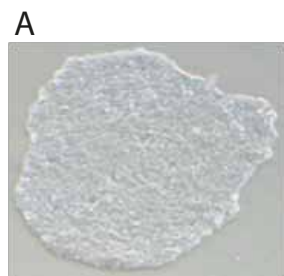
ASM-5001 DMEM for Mouse ESC 450 ml x 10 bottles \$180

ASM-5002 DMEM/F12 for Human ESC 400 ml x 10 bottles \$210

Related Products

ASM-5003 Mouse ESC Freezing Medium 50 ml \$65

ASM-5004 Human ESC Freezing Medium 50 ml \$68



(A) hESC cultured in ESC-Sure™ SFFM.
(B) mESC cultured in ESC-Sure™ Mate.

MEF Feeder Cells				Characterization Kit			
ASF-1001	DR4 MEF, P2, untreated	1 vial of 1x10 ⁶ cells	\$180	ASK-3005	mES/iPS Cell Characterization Kit		\$399
ASF-1002	DR4 MEF, P2, untreated	3 vials of 1x10 ⁶ cells	\$490	ASK-3006	hES/iPS Cell Characterization Kit		\$579
ASF-1013	DR4 MEF, P3, irradiated	1 vial of 4 x10 ⁶ cells	\$120	Reprogramming / iPS Cell Generation			
ASF-1014	DR4 MEF, P3, irradiated	5 vials of 4x10 ⁶ cells	\$550	ASK-3011	iPS Cell Generation Kit		\$1200
ASF-1015	DR4 MEF, P3, irradiated	1 vial of 2x10 ⁶ cells	\$70	ASR-2000	GFP	Retrovirus, packaged	1 ml \$230
ASF-1016	DR4 MEF, P3, irradiated	5 vials of 2x10 ⁶ cells	\$325	ASR-2001	hLMYC	Retrovirus, packaged	1 ml \$230
ASF-1101	Neo MEF, P2, untreated	1 vial of 1x10 ⁶ cells	\$90	ASR-2002	hKLF4	Retrovirus, packaged	1 ml \$230
ASF-1102	Neo MEF, P2, untreated	3 vials of 1x10 ⁶ cells	\$255	ASR-2003	hOCT4	Retrovirus, packaged	1 ml \$230
ASF-1113	Neo MEF, P3, irradiated	1 vial of 4x10 ⁶ cells	\$45	ASR-2004	hSOX2	Retrovirus, packaged	1 ml \$230
ASF-1114	Neo MEF, P3, irradiated	5 vials of 4x10 ⁶ cells	\$215	Antibody			
ASF-1115	Neo MEF, P3, irradiated	1 vial of 2x10 ⁶ cells	\$35	ASA-0110	Anti-OCT4 (h)	monoclonal antibody (ready to use)	800 µl \$80
ASF-1116	Neo MEF, P3, irradiated	8 vials of 2x10 ⁶ cells	\$256	ASA-0115	Anti-Oct4 (m)	monoclonal antibody (ready to use)	800 µl \$80
ASF-1201	CF1 MEF, P2, untreated	1 vial of 1x10 ⁶ cells	\$90	ASA-0120	Anti-SOX2 (h)	monoclonal antibody (ready to use)	800 µl \$80
ASF-1202	CF1 MEF, P2, untreated	3 vials of 1x10 ⁶ cells	\$255	ASA-0125	Anti-Sox2 (m)	monoclonal antibody (ready to use)	800 µl \$80
ASF-1213	CF1 MEF, P3, irradiated	1 vial of 4x10 ⁶ cells	\$45	ASA-0135	Anti-Ssea-1 (m)	monoclonal antibody (ready to use)	800 µl \$80
ASF-1214	CF1 MEF, P3, irradiated	5 vials of 4x10 ⁶ cells	\$215	ASA-0140	Anti-SSEA-3 (h)	monoclonal antibody (ready to use)	800 µl \$80
ASF-1215	CF1 MEF, P3, irradiated	1 vial of 2x10 ⁶ cells	\$35	ASA-0160	Anti-TRA-1-60 (h)	monoclonal antibody (ready to use)	800 µl \$80
ASF-1216	CF1 MEF, P3, irradiated	8 vials of 2x10 ⁶ cells	\$256	ASA-0170	Anti-TRA-1-81 (h)	monoclonal antibody (ready to use)	800 µl \$80
ASF-1217	CF1 MEF, P3, irradiated	1 vial of 1x10 ⁶ cells	\$22	TARGATT™ Series			
ASF-1223	CF1 MEF, P3, mitomycin-C treated	1 vial of 4x10 ⁶ cells	\$45	Custom	TARGATT™ Fast and Site-Specific Transgenic Mouse		Inquire
ASF-1224	CF1 MEF, P3, mitomycin-C treated	5 vials of 4x10 ⁶ cells	\$215	AST-0001	TARGATT™ H11 Fresh Embryos	50 embryos	\$2650
ASF-1225	CF1 MEF, P3, mitomycin-C treated	1 vial of 2x10 ⁶ cells	\$35	AST-0002	TARGATT™ H11 Frozen Embryos	50 embryos	\$2950
ASF-1226	CF1 MEF, P3, mitomycin-C treated	8 vials of 2x10 ⁶ cells	\$256	AST-1001	TARGATT™ Transgenic Kit	5 rounds of microinjections	\$869
Media / Serum / Others				AST-1002	TARGATT™ Transgenic Kit	2 rounds of microinjections	\$399
ASM-5001	ESC-Sure™ DMEM Medium for mESC, 450 ml (10 bottles)		\$180	Custom Services			
ASM-5002	ESC-Sure™ DMEM/F12 Medium for hESC 400 ml (10 bottles)		\$210	ASC-6001	Mouse ES Cell Derivation Service		\$2900
ASM-5003	Mouse ES Cell Freezing Medium (2X)	50 ml	\$65	ASC-6003-C	Mouse ES Cell Karyotyping Service (Chromosome Counting)		\$300
ASM-5004	Human ES Cell Freezing Medium (2X)	50 ml	\$68	ASC-6004	Mouse ES Cell Sex Determination Service		\$200
ASM-5006	ESC-Sure™ Fetal Bovine Serum (FBS)	100 ml	\$95	ASC-6005	Mouse ES Cell Karyotyping and Sex Determination Service		\$450
ASM-5007	ESC-Sure™ Fetal Bovine Serum (FBS)	500 ml	\$320	ASC-6006	Mouse ES/iPS Cell Pluripotency Characterization Service		\$599
ASM-5008	ESC-Sure™ Conditioned Medium for hESC/iPSC 100 ml		\$120	ASC-6007	Human ES/iPS Cell Pluripotency Characterization Service		\$799
ASM-5010	ESC-Sure™ Serum & Feeder Free Medium for hESC/iPSC 100 ml		\$99	ASC-6008	Teratoma Formation Analysis		\$2900
ASM-5011	ESC-Sure™ mESC Mate	100 ml	\$200	ASC-6009	mESC/iPSC Germline Transmission Service (blastocyst injection)		Inquire
ASE-9005	C57BL6/129SvJ F1 mESC	~ 1x10 ⁶ cells/vial	\$795	ASC-6010	mESC/iPSC Germline Transmission Service (tetraploid complementation)		Inquire