

## COMPLETE CELL CULTURING SOLUTIONS FOR iPSCs

ATCC brings to the research community complete cell culturing solutions for induced pluripotent stem cells (iPSCs). ATCC iPSCs are derived from healthy donors, including ethnic and gender diverse sets, as well as individuals with genetic diseases, including Parkinson's disease, Down syndrome, and cystic fibrosis. Each lot of cells is performance tested for viability, pluripotency, differentiation capacity, karyotype, growth potential, and sample purity. All ATCC iPSCs are pre-adapted to an optimized serum-free, feeder-free cell culture environment and are licensed for research use.

iPSCs can be differentiated into a variety of cell types for studies in organ synthesis and damage repair. Using new genome editing tools, mutations or corrected sequences can be introduced, opening the door to mutation rescue investigation.

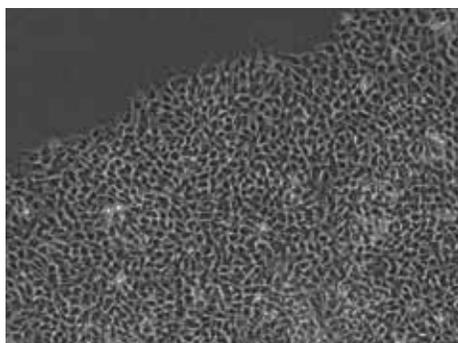
### APPLICATIONS:

- Experimental controls
- Drug discovery/screening
- Gene therapy
- Differentiation
- Target validation
- Transplantation studies
- Organogenesis
- Disease modeling
- Mechanisms of action

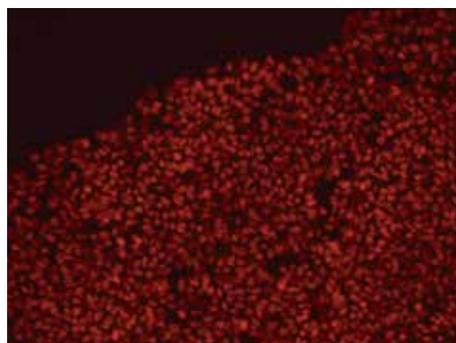
Use this iPSC Solutions Guide to find the cell growth products that you need to establish or sustain your iPSC cultures.

### Assuring pluripotency: ATCC iPSCs and iPSC reagents are thoroughly tested and validated to maintain full potency and an undifferentiated state over an extended culture period

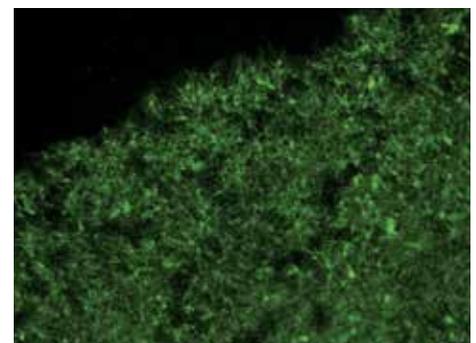
Cells are tested for post-freeze viability, growth, sterility (including mycoplasma), identity by STR analysis, and karyotype by G-banding. Each lot is tested for pluripotency using flow cytometry to analyze the expression of the pluripotent markers Nanog, Tra-1-60, SSEA4, and Tra-1-81. Differentiation potential is tested by embryoid body (EB) formation and subsequent analysis for the three germ layers by qRT-PCR. The number of colonies per vial is >30 after 5 days when seeded as directed.



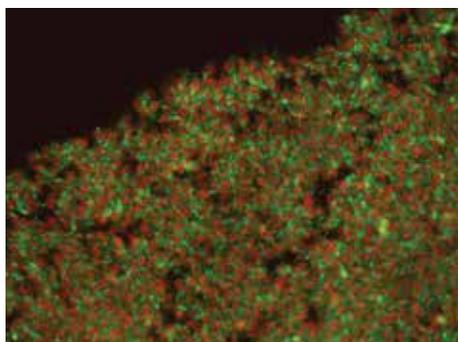
Phase



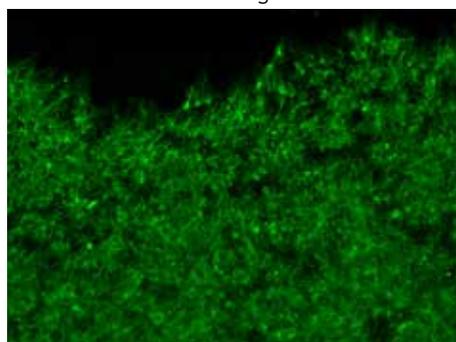
Nanog



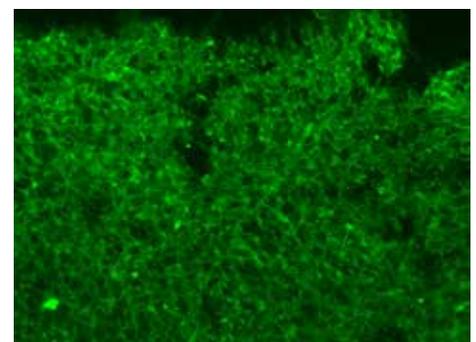
Tra-1-60



Nanog + Tra-1-60



SSEA4



Tra-1-81

**Figure 1.** Immunocytochemistry of iPSCs stained with Nanog, Tra-1-60, SSEA4, and Tra-1-81 antibodies (10x).

## ATCC STEM CELL CULTURE GUIDE AND iPSC RESEARCH TOOLS

The ATCC Stem Cell Culture Guide is a comprehensive resource for culturing any of the ATCC Stem Cell Offerings. Find more information on Stem Cell culture techniques, quality control, and characterization of ATCC iPSCs at [www.atcc.org/guides](http://www.atcc.org/guides). ATCC also has a variety of applications materials related to using iPSCs, including webinars, poster presentations, and protocols, which can be accessed on our website at [www.atcc.org/ipsc](http://www.atcc.org/ipsc).

### iPSCs

ATCC provides numerous examples of iPSC lines designed to support physiologically relevant, *in vitro* research in regenerative medicine. High viability, low passage iPSCs are pre-adapted to serum-free, feeder-free, and xeno-free culture conditions.

ATCC® No.	Designation	Reprogramming Method	Tissue of Origin	Disease	Ethnicity	Gender
ACS-1003™	ATCC-DYP0730	Episomal	Foreskin	Down syndrome	Caucasian	Male
ACS-1004™	ATCC-DYP0250	Episomal	Dermal fibroblast	Cystic fibrosis; homozygous for the Delta 508 mutation in the CFTR gene	Unknown	Male
ACS-1007™	ATCC-HYR0103	Retroviral	Liver	Normal	Hispanic	Male
ACS-1011™	ATCC-DYR0100	Retroviral	Foreskin	Normal	Unknown	Male
ACS-1012™	ATCC-DYR0530	Retroviral	Skin Dermal fibroblast	Parkinson's disease, asthma, depression	Caucasian	Male
ACS-1013™	ATCC-DYS0530	Sendai viral	Skin Dermal fibroblast	Parkinson's disease, asthma, depression	Caucasian	Male
ACS-1014™	ATCC-DYP0530	Episomal	Skin Dermal fibroblast	Parkinson's disease, asthma, depression	Caucasian	Male
ACS-1019™	ATCC-DYS0100	Sendai viral	Foreskin	Normal	Unknown	Male
ACS-1020™	ATCC-HYS0103	Sendai viral	Liver	Normal	Hispanic	Male
ACS-1021™	ATCC-CYS0105	Sendai viral	Heart	Normal	Unknown	Male
ACS-1023™	KYOU-DXR0109B	Retroviral	Dermal fibroblast	Normal	Caucasian	Female

### ETHNIC AND GENDER DIVERSE iPSCs

In response to the need for equivalents of various ethnic and gender groups for standard controls, disease modeling, as well as drug discovery and development, ATCC offers male and female CD34+ iPSCs from African American, Asian, Caucasian, and Hispanic individuals. These zero-footprint iPSCs are highly characterized and have been extensively tested to confirm their undifferentiated state.

ATCC® No.	Designation	Reprogramming Method	Tissue of Origin	Disease	Ethnicity	Gender
ACS-1024™	ATCC-BYS0110	Sendai viral	Bone marrow CD34+	Normal	African American	Male
ACS-1025™	ATCC-BYS0111	Sendai viral	Bone marrow CD34+	Normal	Hispanic	Male
ACS-1026™	ATCC-BYS0112	Sendai viral	Bone marrow CD34+	Normal	Non-Hispanic white	Male
ACS-1027™	ATCC-BYS0113	Sendai viral	Bone marrow CD34+	Normal	Asian	Male
ACS-1028™	ATCC-BXS0114	Sendai viral	Bone marrow CD34+	Normal	African American	Female
ACS-1029™	ATCC-BXS0115	Sendai viral	Bone marrow CD34+	Normal	Hispanic	Female
ACS-1030™	ATCC-BXS0116	Sendai viral	Bone marrow CD34+	Normal	Non-Hispanic White	Female
ACS-1031™	ATCC-BXS0117	Sendai viral	Bone marrow CD34+	Normal	Asian	Female

### STARTER KITS FOR iPSC CULTURE

Just getting started? ATCC provides a pre-configured kit that makes it easy and cost effective to begin your work with iPSCs. This xeno-free kit has been optimized to support both feeder-dependent and feeder-free iPSC cultures.

ATCC® No.	Name	Description
ACS-3044-K	Feeder-free, Serum-free Culture System	This kit supplies CellMatrix™ Basement Membrane Gel and cell culture components to support a serum-free, feeder-free cell culture environment, including Pluripotent Stem Cell SFM XF/FF, Stem Cell Dissociation Reagent, ROCK Inhibitor Y27632, Stem Cell Freezing Media, DMEM: F12 Medium, and D-PBS.

## INDIVIDUAL REAGENTS FOR iPSC CULTURE

Have your feeder-independent or feeder-dependent cultures started, but are running low on a reagent? ATCC provides individually packaged media, dissociation reagent, supplements, and more.

ATCC® No.	Name	Description
ACS-3002	Pluripotent Stem Cell SFM XF/FF	A defined, xeno-free, serum-free medium optimized for feeder-free culture of human pluripotent stem cells.
ACS-3010	Stem Cell Dissociation Reagent	A neutral protease isolated from <i>Bacillus polymyxa</i> that promotes safe and efficient detachment of human pluripotent stem cells during subcultivation in cell culture.
ACS-3030	ROCK Inhibitor Y27632	ROCK Inhibitor prevents dissociation-induced apoptosis of human pluripotent stem cells, increasing the survival rate and maintaining pluripotency during subcultivation and thawing as well as enhancing the survival rate of stem cells during cryopreservation.
ACS-3035	CellMatrix Basement Membrane Gel	A soluble, growth factor reduced basement membrane extract that supplies a feeder-free surface for the attachment of human pluripotent stem cells.
SCRR-30-2020	ES-qualified FBS	This serum is tested for the ability to support embryonic stem culture and differentiation. Plating efficiency, colony morphology, and the expression of at least five markers of differentiation are determined for undifferentiated cells and cells induced to EB formation through full differentiation.
30-2006	DMEM: F12 Medium	1:1 mix of Dulbecco's Modified Eagle's Medium and Ham's F-12 Medium. Modified to contain 2.5 mM L-glutamine, 15 mM HEPES, 0.5 mM sodium pyruvate, and 1200 mg/L sodium bicarbonate.
30-2115	L-Alanyl-L-Glutamine	200 mM Solution in 0.85% NaCl
30-2116	MEM Nonessential Amino Acid Solution	Contains 100X the non-essential amino acids L-alanine, L-asparagine· H <sub>2</sub> O, L-aspartic acid, L-glutamic acid, glycine, L-proline, and L-serine found in MEM $\alpha$ Medium.
30-2200	D-PBS	D-PBS without calcium chloride or magnesium chloride.

## FEEDER CELLS

If your research doesn't require a xeno-free culture environment, you may consider continuing to use feeder cells to support the growth and maintenance of your iPSCs. ATCC maintains a large collection of gamma-irradiated and mitomycin C-treated Feeder Cells. Or, if you have your own tailored protocol for growth arrest, we provide untreated human and mouse embryonic fibroblasts.

ATCC® No.	Name	Description
CRL-2581™	C166	Mouse embryonic endothelial cell
CRL-2582™	C166-GFP	Mouse embryonic endothelial cell with GFP expression
CRL-2749™	OP9	Mouse embryonic bone marrow stromal cells
PCS-201-011	Dermal Fibroblasts; Normal, Human	Mitomycin C treated neonatal human fibroblast
SCRC-1007™	AFT024	Mouse embryonic liver fibroblast
SCRC-1007.1™	AFT024 IRR	Irradiated mouse embryonic liver fibroblast
SCRC-1008™	MEF (C57BL/6)[MEF-BL/6-1]	Mouse embryonic fibroblast
SCRC-1008.1™	MEF (C57BL/6) IRR	Irradiated mouse embryonic fibroblast
SCRC-1008.2™	MEF (C57BL/6) MITC	Mitomycin C treated mouse embryonic fibroblast
SCRC-1040™	MEF (CF-1)	Mouse embryonic fibroblast
SCRC-1040.1™	MEF (CF-1)IRR	Irradiated mouse embryonic fibroblast
SCRC-1040.2a™	MEF (CF-1) MITC	Mitomycin C treated mouse embryonic fibroblast
SCRC-1045™	MEF (DR4)	Multidrug-resistant mouse fibroblast
SCRC-1041™	HFF-1	Human foreskin fibroblast
SCRC-1041.1™	HFF-1 IRR	Irradiated human foreskin fibroblast
SCRC-1041.2™	HFF-1 MITC	Mitomycin C treated human foreskin fibroblast
SCRC-1049™	SNL76/7	Mouse STO fibroblast with G418 resistance and endogenous expression of LIF
SCRC-1050™	SNL76/7-4	Mouse STO fibroblast with resistance to G418 and puromycin plus endogenous expression of LIF
SCRR-3020™	Mitomycin C	Antineoplastic antibiotic to prepare inactivated feeder cells



10801 University Blvd.  
Manassas, VA 20110

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**PHONE**

800.638.6597  
703.365.2700

**EMAIL**

[salesrep@atcc.org](mailto:salesrep@atcc.org)

**WEB**

[www.atcc.org](http://www.atcc.org)