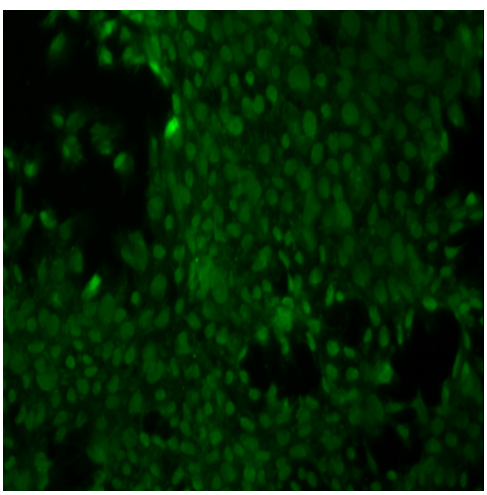
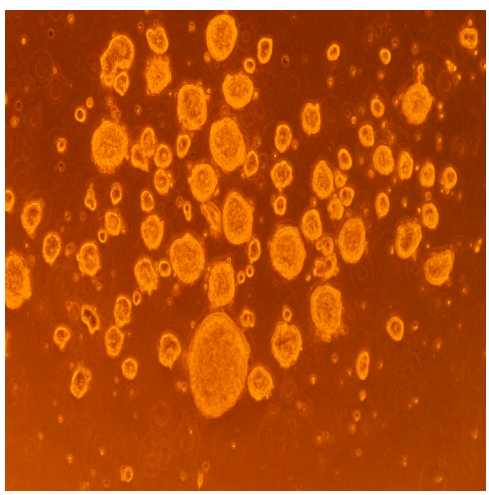
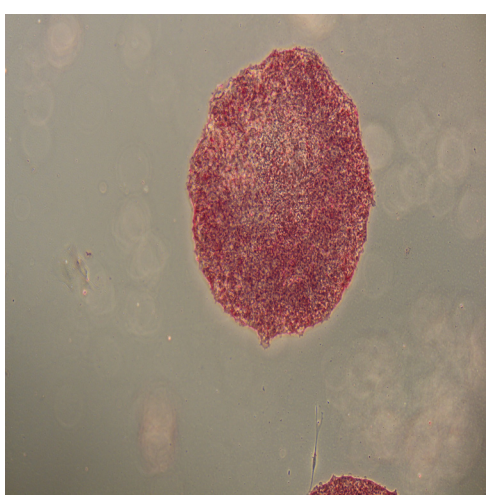
Cellular Engineering Technologies, Inc.

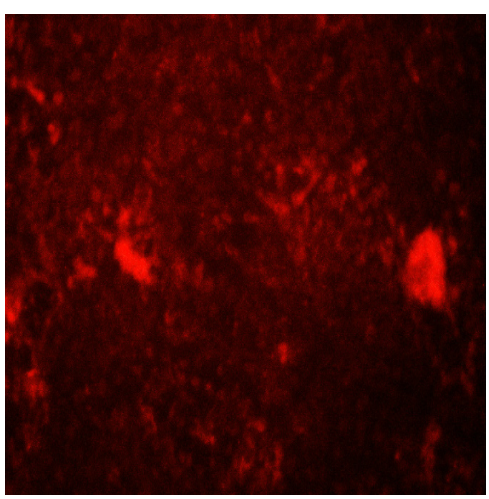
Human iPS Cell Products & Services

Catalog 2019



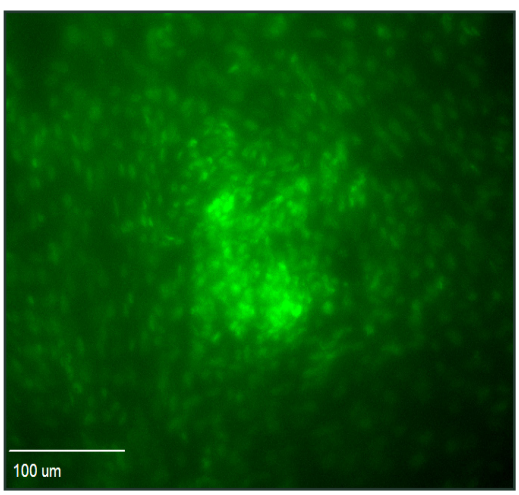


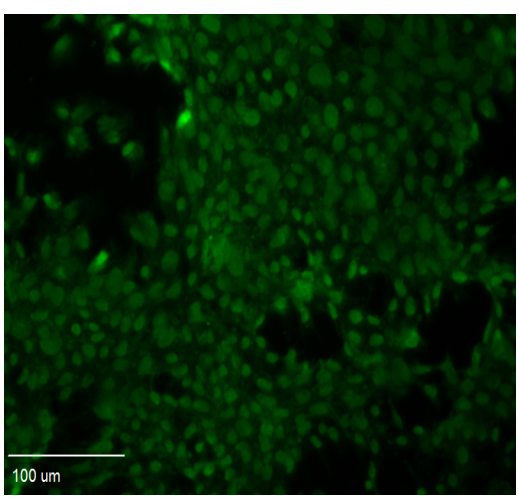




Human Induced Pluripotent Stem (iPS) Cell Characteristics

Human iPS cells are created by expressing modified Yamanaka iPS genes, (Oct-4, Sox-2, KIF-4 and c-Myc free) in various target cells using CET's proprietary gene delivery method and reprogramming and growth tissue culture media. iPS cells retain embryonic stem cell like characteristics and express Nanog, Oct-4, SSEA-4, TRA-1-60, alkaline phosphatase staining. These cells are useful for tissue differentiation of all three germ layers, including the ectoderm, endoderm, and the mesoderm. Some examples of tissue differentiation applications include conversion into pancreatic islet cells, hepatocyte like cells, cardiomyocytes, and neuronal like cells.





iPS Media

iPS Cell Growth Media Kit
CET.IPS.GMK-500

500mL, $175.00

CET's iPS Growth Media is a universal, defined media for iPS cell systems. This media has been formulated and validated to grow on Vitronectin XF, Geltrex, and Matrigel, providing a more defined, cost effective and reproducible growth condition. CET's iPS Growth Media has been uniquely formulated to minimize cell differentiation, promote robust growth, and prevent cell death. This media is a complete growth media and does not require any additional reagents. The addition of CET's iPS Growth Media Supplement (provided in the kit) enhances the efficiency of human iPS cell formation. CET's media is serum-free and xeno-free. The media is shipped on gel packs. The growth supplement is shipped on dry ice.

Components:
iPS Growth Media 500mL
iPS Growth Supplement 7mL

iPS Cell Passing Solution
CET.IPS.PASS-100

100mL, $50.00

CET's iPS Passing Solution enables the gentle detachment of colonies for routine passaging of human pluripotent stem cell cultures. The reagents allow efficient dissociation of cell colonies while maintaining maximum viability. This solution has been developed for use with our iPS Cell Growth Media and iPS Growth Media Supplement. Media is shipped on gel packs.

iPS Freeze Medium Kit
CET.IPS.FZ-200

200mL, $160.00

CET's iPS Freezing Medium Kit contains iPS Freeze Medium A and IPS Freeze Medium B, which are required for proper cryopreservation of iPS cells. CET's iPS Freeze Mediums provide a safe environment for cells during, freezing, storage, and thawing processes. This kit is designed to preserve cells in low temperature environments. Improper freezing and thawing of iPS cells will lead to a marked loss in cell viability and potential loss of cell lines. Media is shipped on gel packs.

Components:
iPS Freezing Medium A 100mL
iPS Freezing Medium B 100mL

iPS Reprogramming Media Kit
CET.IPS.RPM-250

250mL, $150.00

CET's iPS Reprogramming Media supports the reprogramming of human induced pluripotent stem cells. This media is formulated for the formation of induced pluripotent stem cell colonies. Media is shipped on gel packs. Supplement is shipped on dry ice.

Components:
iPS Reprogramming Base Media 250 mL
iPS Reprogramming Supplement 250µL

Advantages of CET's iPS Cell Reprogramming Media

CET's iPS Cell Reprogramming Media is very robust and has several advantages over competitors' media. CET's iPS Cell Reprogramming Media works equally well with multiple substrate coatings like Matrigel, vitronectin, laminin, and Geltrex. This media is Xeno-free and converts targets cells into pluripotent colonies faster than other media on the market. CET's iPS cell reprogramming media works equally well with adherent cells and circulating mononuclear cells. This media is also substantially less expensive.

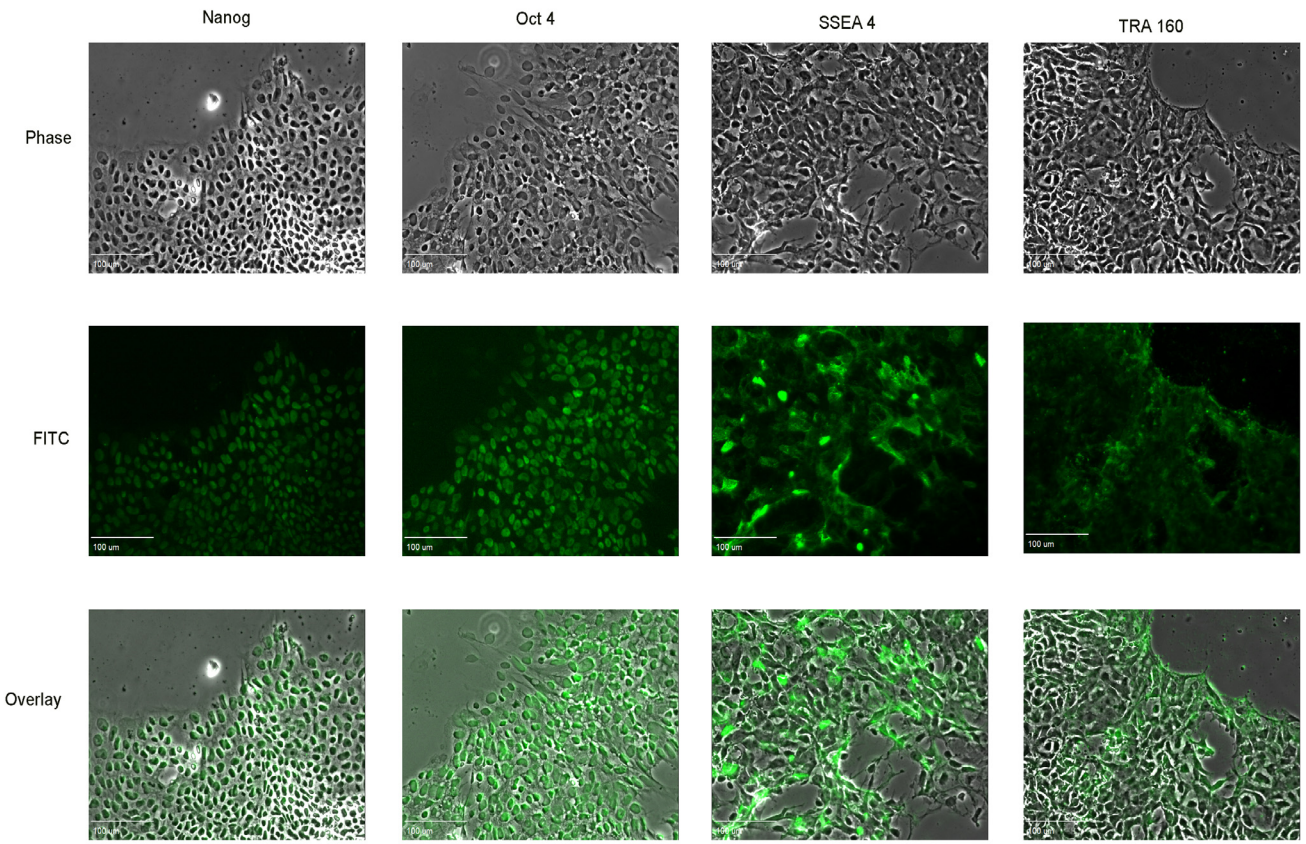
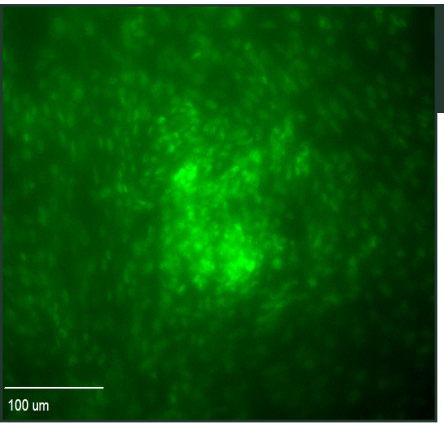


Figure Legend: The following panel depicts a montage of immunofluorescence images of cord blood derived multipotent stem cells converted into iPS cells. An iPS cell colony is probed with a FITC-conjugated antibody against Nanog, Oct-4, SSEA-4 or TRA-160. The first row are representative phase images of an iPS cell colony; the second row represents the same image field expressing the FITC-labeled pluripotent protein; and the third row represents an overlay of the phase image with the FITC image. Cultured cells were grown on laminin-521 coated glass surfaces. As shown Nanog and Oct-4 are proteins localized to the cell nucleus, while TRA-160 and SSEA-4 are surface proteins. The images are captured at 200x magnification.

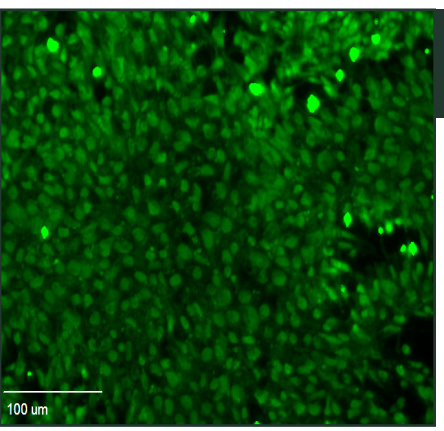
iPS Differentiation Media



iPS Cardiomyocyte Differentiation Media
CET.DIFF.CMM-100

100mL, $250.00

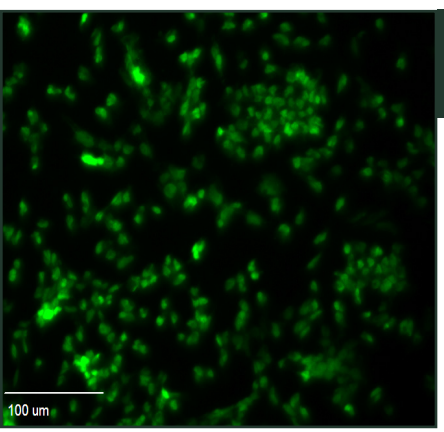
CET's Cardiomyocyte (CM) Differentiation Media is designed to convert human iPSC into beating cardiomyocytes. CET can only guarantee beating cardiomyocytes using CET IPS lines (available separately). CET's CM Differentiation Media protocol is a multi-step process that is reliable and economical. By following our protocol, foci of beating cardiomyocytes can be generated. These can then be enriched using either flow cytometry or metabolic selection (e.g. glucose deprivation and use of sodium lactate). Media is shipped with gel packs.



iPS Definitive Endoderm Differentiation Media
CET.DIFF.DEM-250

250mL, $100.00

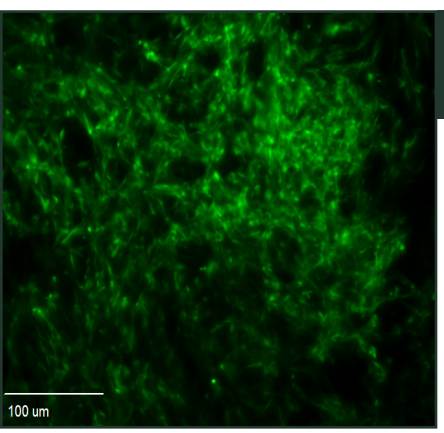
CET's Definitive Endoderm (DE) Differentiation Media is designed to convert human iPSC into definitive endoderm. Unlike competing media, CET's DE Differentiaton Media protocol is a one-step process that is quick, reliable, economical and consistent. By following our protocol, greater than 97% of plated iPSC convert into DE within 4 days. Conversion into DE allows the investigator to create cells from the liver, thymus, pancreas, thyroid, lung and intestines. Media is shipped with gel packs.



iPS Mesoderm Differentiation Media
CET.DIFF.MDM-250

250mL, $60.00

CET's Mesoderm (MD) Differentiation Media is designed to convert human iPSC into mesoderm. CET's MD Differentiation Media protocol is a one-step process that is quick, reliable, economical and consistent. By following our protocol, greater than 97% of plated iPSC convert into MD within 4 days. Conversion into MD allows the investigator to create cells from the heart, skeletal muscle, smooth muscle, hemangioblasts, kidney and mesenchymal cells. Media is shipped with gel packs.



iPS Neural Progenitor Cell Differentiation Media
CET.DIFF.NPCM-250

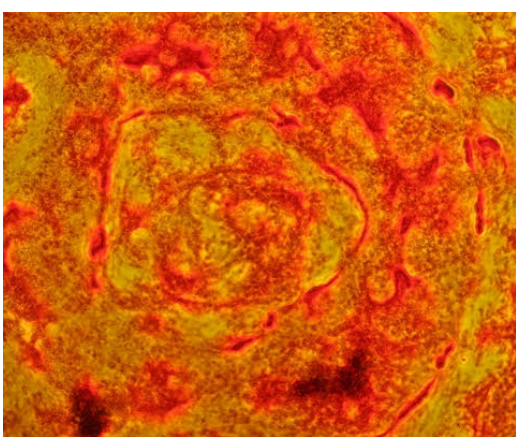
250mL, $125.00

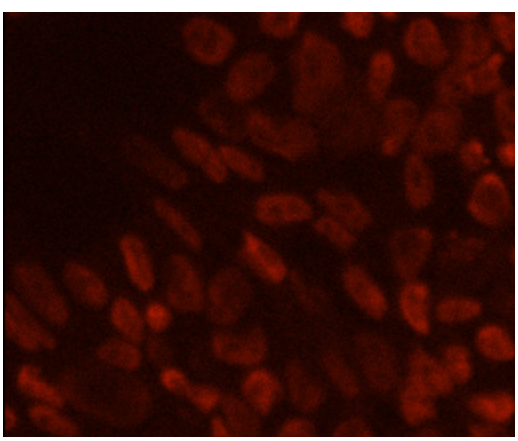
CET's Neural Progenitor Cell (NPC) Differentiation Media is designed to convert human iPSC into Neural Progenitor Cells. CET's NPC Differentiation Media protocol is a one-step process that is quick, reliable, economical and consistent. By following our protocol, greater than 97% of plated iPSC convert into NPC within 6 days. NPC can then be terminally differentiated into a variety of neurons. Media is shipped with gel packs.

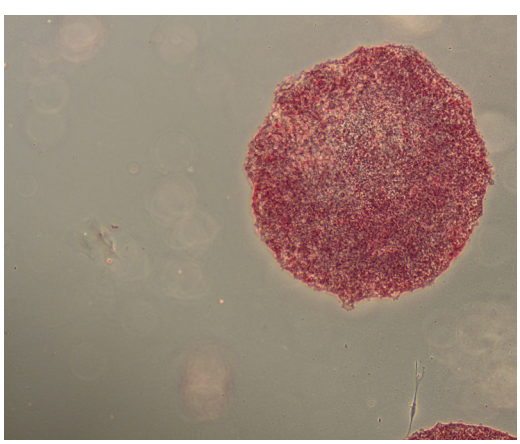
iPS Cell Lines

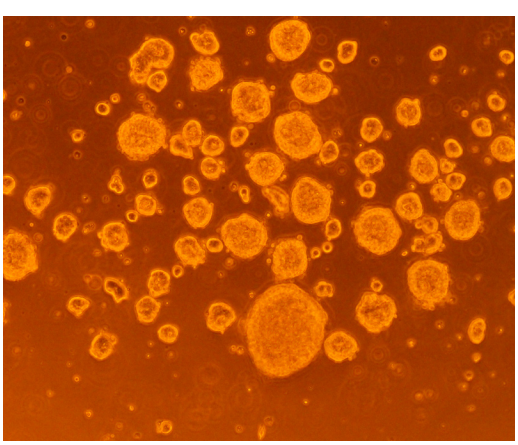
CET offers several iPS cells for research purposes. CET has developed proprietary technology that decreases the time and cost significantly and increases the efficiency and purity of iPS cellular reprogramming. iPS cell lines have been developed using an episomal gene construct version that contains modified Yamanaka factors with different protein structures. The reprogramming process is free of c-Myc to significantly eliminate oncogenic influences that affect native cellular responses to physiological and pharmacological stimuli.

Cell growth and viability of all our iPS cells are judged to be fully pluripotent based on colony morphology, alkaline phosphatase staining, and antibody testing for expressed pluripotent and embryonic stem cell surface biomarkers. Some cell lines have been validated for teratoma formation as well. Cells are grown under feeder-free conditions and routinely grown in CET's iPS Growth Media. Cells are free of Mycoplasma. iPS colonies exhibit classical morphology and growth.

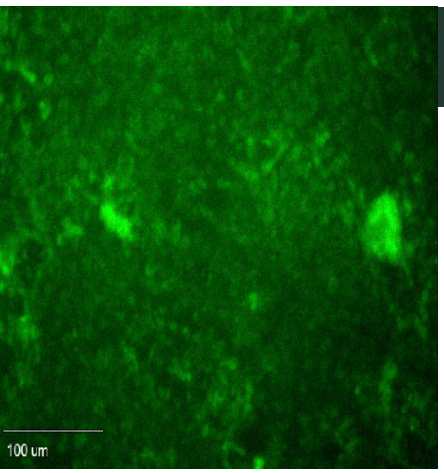








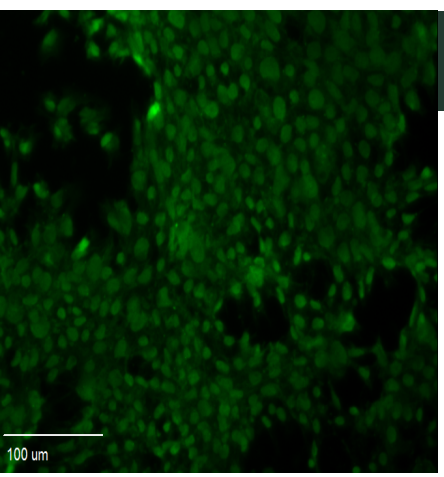
iPS Cell Lines



Human Foreskin Fibroblast
CET.IPS.FFHFF-500

500,000 cells, $695.00

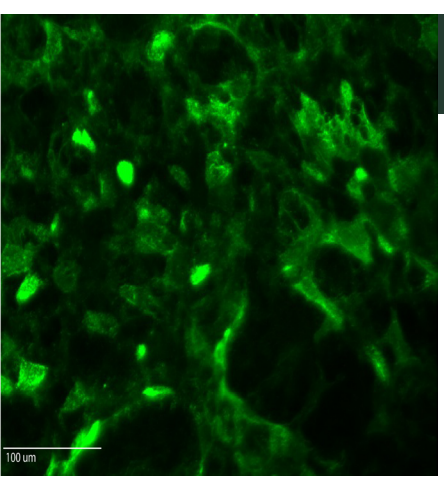
This iPS cell line was created using a normal human foreskin fibroblast. The iPS cell line was created using an episomal reprogramming containing a proprietary mix of vectors (containing Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). The cell line was validated for pluripotency based on colony morphology, alkaline phosphatase expression, and expression of SSEA-4. Cells are free of Mycoplasma. iPS colonies exhibit classical morphology and growth. Cell line is shipped with dry ice.



Human Adipose Mesenchymal Stem Cell
CET.IPS.FFAD-500

500,000 cells, $695.00

This iPS cell line was created using a normal adipose-derived mesenchymal stem cell (Ad-MSC). The iPS cell line was created using an episomal reprogramming containing a proprietary mix of vectors (containing Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). The cell line was validated for pluripotency based on colony morphology, alkaline phosphatase expression and expression of SSEA-4. Cells are free of Mycoplasma. iPS colonies exhibit classical morphology and growth. Cell line is shipped with dry ice.

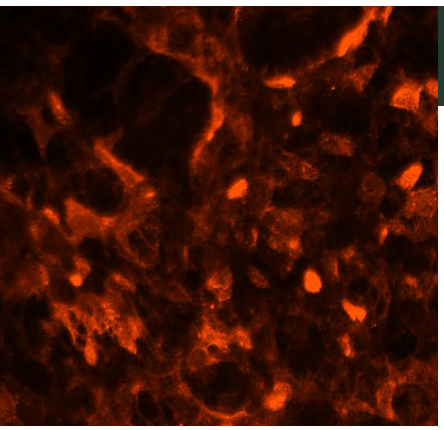


Human Multipotent Stem Cell
CET.IPS.FFMP-500

500,000 cells, $695.00

This target cell is a rare and adherent cell found in human umbilical cord blood that has a lower level of MHC Class II expression. The iPS cell line created from these target cells is robust, pluripotent, and easy to manage using CET's growth media. The iPS cell line was created using an episomal proprietary mix of vectors (containing Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). The cell line was validated for pluripotency based on colony morphology, alkaline phosphatase expression, and expression of SSEA-4. Cells are free of Mycoplasma. iPS colonies exhibit classical morphology and growth. Cell line is shipped with dry ice.

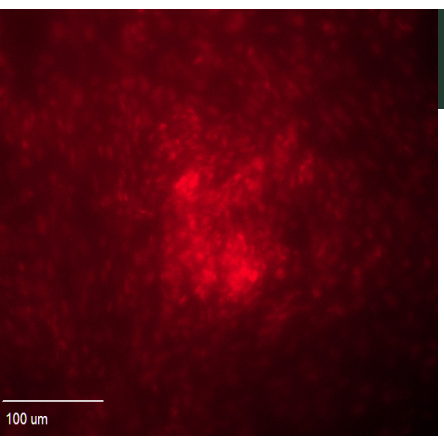
iPS Cell Lines



Human Amniotic Membrane Mesenchymal Stem Cell

CET.IPS.FFAM-500 **500,000 cells, $695.00**

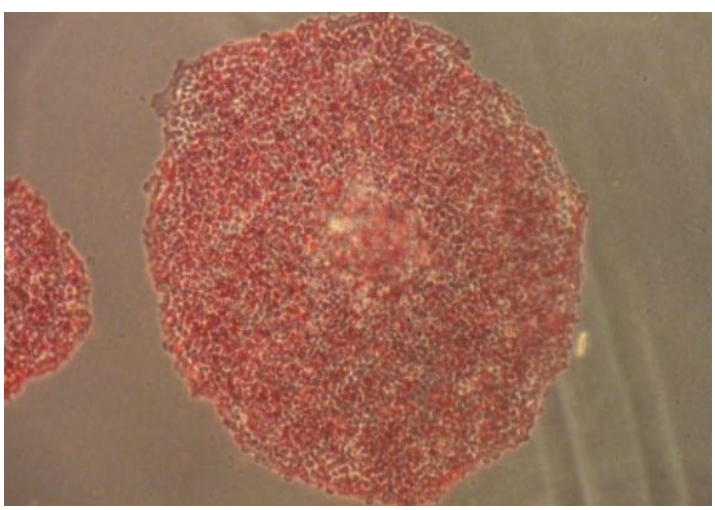
This iPS cell line was created using a normal amniotic-derived mesenchymal stem cell (Am-MSC). The iPS cell line was created using an episomal proprietary mix of vectors (containing Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). The cell line was validated for pluripotency based on colony morphology, alkaline phosphatase expression, and expression of SSEA-4. Cells are free of Mycoplasma. iPS colonies exhibit classical morphology and growth. Cell line is shipped with dry ice.

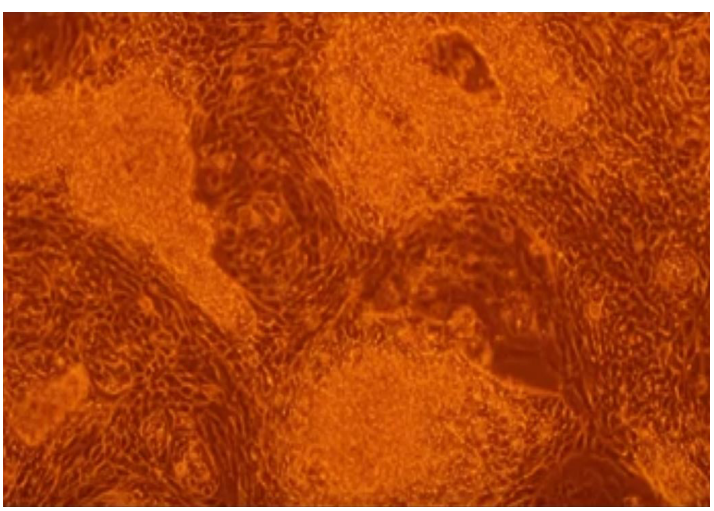


Human CD34+ Cord Blood Stem Cell

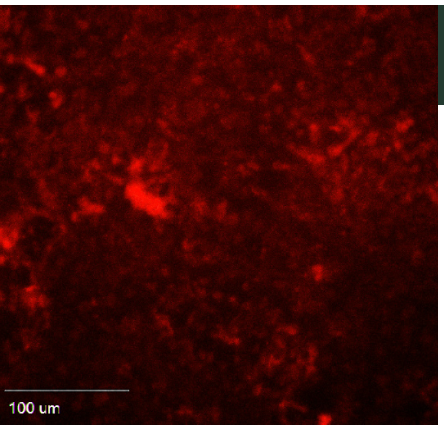
CET.IPS.FFCD34-500 **500,000 cells, $695.00**

This is a hematopoietic stem cell found in cord blood. Like the Multipotent iPS line, this iPS cell line is robust, pluripotent, and easy to manage. The iPS cell line was created using an episomal proprietary mix of vectors (containing Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). The cell line was validated for pluripotency based on colony morphology, alkaline phosphatase expression, and expression of SSEA-4. Cells are free of Mycoplasma. iPS colonies exhibit classical morphology and growth. Cell line is shipped with dry ice.





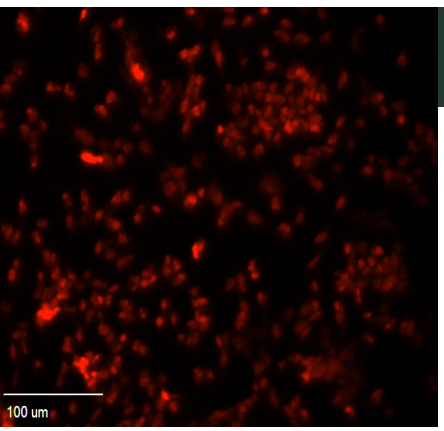
iPS Disease Specific Cell Lines



Alzheimer-Presenillin-1 Mutation

CET.IPS.FFALZ-500 **500,000 cells, $695.00**

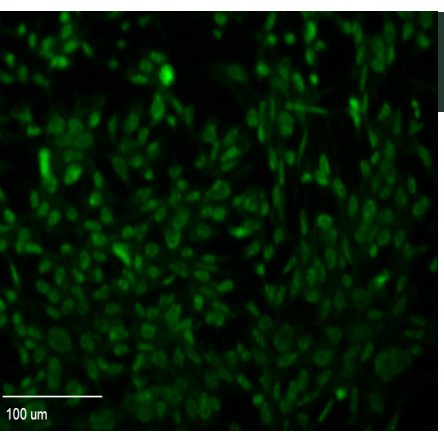
This iPS cell line was made from fibroblast cell line from the Coriell Repository (AG07768). iPS reprogramming was accomplished using an episomal proprietary mix of vectors (containing Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). Now deceased, the donor was affected with Alzheimer's disease. Onset of the disease occurred at age 45. The submitter updated this diagnosis on 3/2009. The skin biopsy was taken ante-mortem from the forearm. Culture was initiated on 8/17/84 using explants of minced skin. The cell morphology is fibroblast-like. Culture was frozen at PDL 5. Cell line is shipped with dry ice.



Gaucher Type 1

CET.IPS.FFGAU-500 **500,000 cells, $695.00**

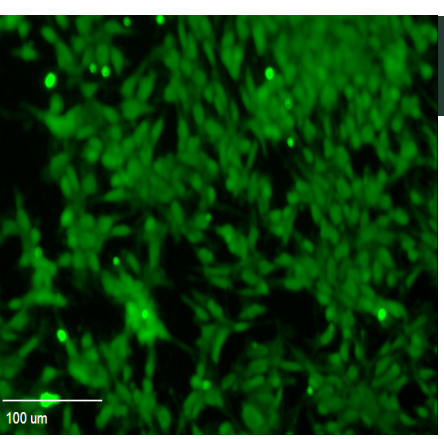
This iPS cell line was made from fibroblast cell line from the Coriell Repository (GM04394). iPS reprogramming was accomplished using an episomal proprietary mix of vectors (Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). Cell line is shipped with dry ice.



Cystic Fibrosis

CET.IPS.FFCYSFIB-500 **500,000 cells, $695.00**

This iPS cell line was made from fibroblast cell line from the Coriell Repository (GM00770). iPS reprogramming was accomplished using an episomal proprietary mix of vectors (Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). Cell line is shipped with dry ice.

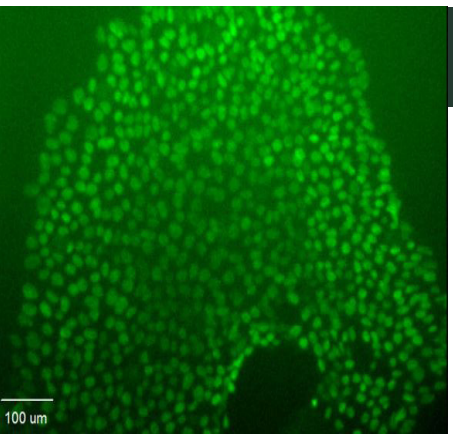


Cystinosis

CET.IPS.FFCYST-500 **500,000 cells, $695.00**

This iPS cell line was made from fibroblast cell line from the Coriell Repository (GM17886). iPS reprogramming was accomplished using an episomal proprietary mix of vectors (Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). Cell line is shipped with dry ice.

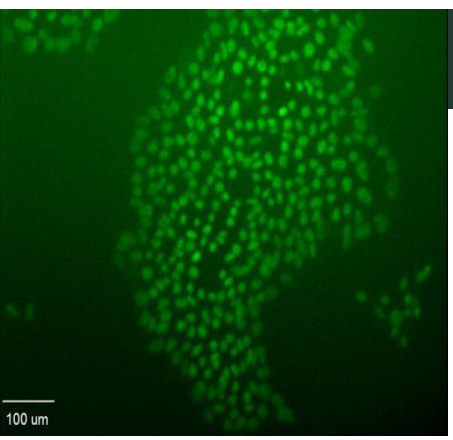
iPS Disease Specific Cell Lines



Niemann Pick Type C- Male Donor

CET.IPS.FFNPC-01 **500,000 cells, $695.00**

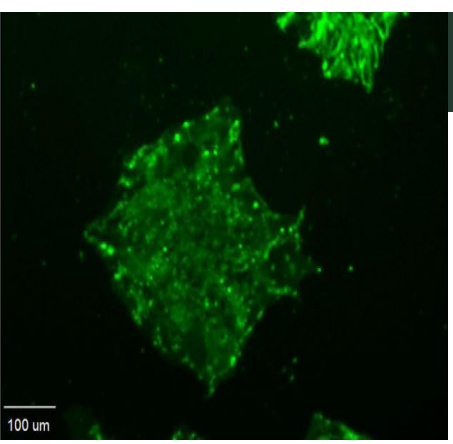
iPS reprogramming was accomplished using an episomal proprietary mix of vectors (Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). Target cell was obtained from an 11 year old Caucasian male with NPC1 mutation. The patient was clinically affected with splenomegaly and supranuclear palsy and subsequently received intravenous and intrathecal cyclodextrin. Other subsequent clinical features included uncoordinated movements and seizures. Cell line is shipped with dry ice.



Niemann Pick Type C- Female Donor

CET.IPS.FFNPC-02 **500,000 cells, $695.00**

iPS reprogramming was accomplished using an episomal expression system containing a proprietary mix of vectors (Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). The target cell was obtained from an 8 year Caucasian female and sibling to CET.IPS. FFNPC-01. This patient had evidence of splenomegaly without neurological symptoms at time of presentation and subsequently received intravenous and intrathecal cyclodextrin. Cell line is shipped with dry ice.



Alpha 1 Anti-Trypsin Deficiency

CET.IPS.FFALP1-500 **500,000 cells, $695.00**

iPS reprogramming was accomplished using an episomal proprietary mix of vectors (Oct-4, Sox-2, Klf-4 along with p53 Anti-sense, EBNA-1). Target cell was obtained from a 57 year old female. Cell line is shipped with dry ice.

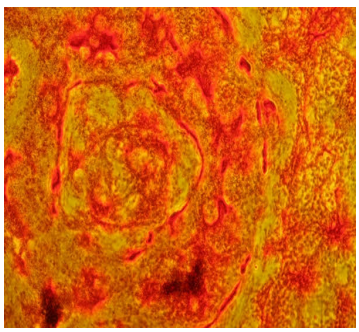
iPS Reprogramming Kits

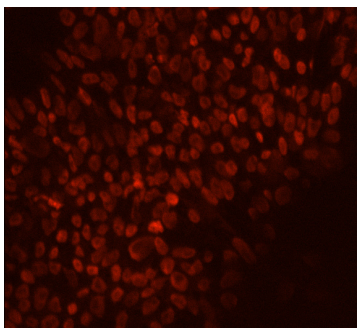
CET has created an episomal plasmid mix where individual reprogramming factors (RF's) are placed in EBNA-1 containing vectors containing a CMV promoter with appropriate poly A sequences. This allows for high levels of expression for RF's such as Oct-4, Sox-2 and Klf-4, while avoiding the oncogenic potential of genes such as c-Myc. Along with these Yamanaka factors, the kit contains a p53 anti-sense element, which is necessary for preventing apoptosis in cells that are in the process of reprogramming, along with a Red Fluorescent Protein Reporter tag to determine transfection efficiency and episomal silencing. CET's episomal kit has numerous advantages over using either mRNA or Sendai Virus based reprogramming methodologies. These include: 1) A single transfection step. 2) Inherent clearance of exogenous episomal DNA during cell division compared to repeated passaging required using Sendai Virus. 3) No introduction of viral DNA and subsequent viral protein expression. 4) Cost. No need to repeatedly transfect unlike mRNA or use agents such as interferon blockers. 5) Simplicity and versatility. CET's Reprogramming kit can reprogram virtually any nucleated target cell, whether adherent or suspension.

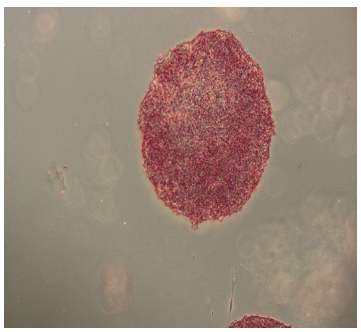
iPS Episomal Reprogramming Kit

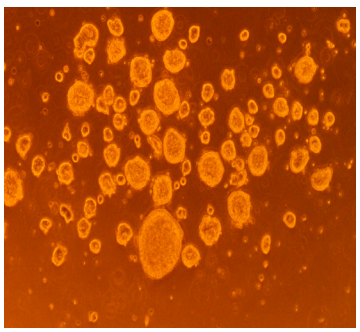
CET.IPS.ERK-01 **1 Kit, $576.00**

CET's Episomal Reprogramming Kit contains a proprietary mix of vectors necessary to reprogram target cells into induced pluripotent stem cells (iPSC). These vectors include the Yamanaka factors (Oct-4, Sox-2, Klf-4) along with p53 Anti-sense, EBNA-1, and Red Fluorescent Protein. Vectors are optimized, pre-mixed and ready for transfection. Each kit contains sufficient material for conducting 5 reprogramming experiments. Product is shipped with dry ice.









iPS Cell Services

iPS Cell Reprogramming Service

Footprint-Free, Feeder-Free, Virus-Free

CET provides iPS Reprogramming Services, where the customer mostly only provides the target cells and we will reprogram disease-specific iPS cells for you. We guarantee that our iPS cells are footprint-free, feeder-free, and virus-free. The overall process takes about 2-3 months.

If you cannot provide the target cells with a particular disease, we can recruit the patient for you. Please review the service below for more details.

Clinical Contract Research Services

CET provides a full spectrum of clinical contact research services to create patient and disease-specific iPS cells for industry, academia, government, and non-profit to pursue their specific research needs. Writing approved Institutional Review Board (IRB) consent forms, recruiting patients, and obtaining the necessary tissue samples can be daunting tasks. The process could take from 6 months to a year just for an IRB approval. Outsourcing this clinical work to CET will save you time and money.

CET has the capabilities to provide a full spectrum clinical contact research services. If the disease you want happens to be someone in our network, we can obtain a blood or tissue sample with detailed clinical annotated information that is de-identified. If you know a specific patient in mind, we can facilitate the entire process for you.

We have universal Institutional Review Board approval consent forms in order to obtain blood or tissue to reprogram target cells into iPS cells. You never have to take the time to write up a consent form and wait for it to be reviewed and approved.

Pricing:

Please contact us through out website for either service. For our IPS Cell Reprogramming Service, fill out our IPS Cell Reprogramming form to receive a quote. For our Clinical Contract Research Service, fill out the Custom Stem Cell Service to receive a quote. Pricing will vary and depend on disease type and how easily we can access the patient.

If you want further information on pricing and time of completion, please email us at orders@celleng-tech.com or call us at (319) 665-3000. We are confident that you will be pleased with the quality of your reprogrammed IPS cell lines.

Purchasing

Interested in our products and services? Visit our website at www.celleng-tech.com to begin your order. For services, please go to the correct service webpage and fill out the correct contact form.

For our human somatic stem cell products and service, please review our Human Somatic Stem Cell Products and Services catalog.

Contact Us

Feel free to contact CET with any questions, and our staff would be glad to assist you in any way possible. CET offers free technical support for all of our products and services during normal business hours. Please note our new contact information below.

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