

RFP Human Induced Pluripotent Stem Cells

Catalog Number: IPSC003

Cell Quantity: 500,000 viable cells per vial

Product Format: Cryopreserved (1 mL)

Storage: Liquid nitrogen vapor phase ($< -135^{\circ}\text{C}$)

Shipping: Dry vapor shipper ($\leq -150^{\circ}\text{C}$)

Human Induced Pluripotent Stem (iPS) Cells (Catalog# IPSC001) are generated from adult human somatic cells (e.g., dermal fibroblasts or peripheral blood mononuclear cells) via non-integrating episomal vector delivery of reprogramming factors (OCT4, SOX2, KLF4, MYC) or Sendai virus. These cells exhibit unlimited self-renewal and the capacity to differentiate into all three germ layers: endoderm, mesoderm, and ectoderm.

Each vial contains 500,000 viable, cryopreserved cells, validated for pluripotency, normal karyotype, and mycoplasma negativity.

Expression Markers (Validated)

Pluripotency-Associated Transcription Factors (Intracellular)

Marker	Detection Method	Expected Expression
OCT4 (POU5F1)	ICC / Flow Cytometry	>95% positive
SOX2	ICC / Flow Cytometry	>95% positive

Marker	Detection Method	Expected Expression
NANOG	ICC / Flow Cytometry	>90% positive
KLF4	ICC / Flow Cytometry	>90% positive

Cell Surface Antigens (Live/Extracellular)

Marker	Detection Method	Expected Expression
SSEA-3 (Stage-Specific Embryonic Antigen-3)	Flow Cytometry	>90% positive
SSEA-4	Flow Cytometry	>95% positive
TRA-1-60	Flow Cytometry	>95% positive
TRA-1-81	Flow Cytometry	>95% positive
Podocalyxin	Flow Cytometry	>90% positive

Alkaline Phosphatase (AP)

Marker	Detection Method	Expected Result
ALPL (Alkaline Phosphatase)	Histochemical staining	Strongly positive (red/purple stain)

Negative Markers (Differentiation/Early Lineage)

Marker	Cell Type Marker	Expected Expression
SSEA-1	Differentiated mouse/human cells	<5% positive
CD44	Mesenchymal / differentiated cells	<10% positive
CD24	Epithelial / neural progenitors	Low (<15% positive in undifferentiated state)

Quality Control Data (per batch)

Test	Method	Result
Pluripotency	Flow cytometry (OCT4, SSEA-4, TRA-1-60)	≥90% double-positive
Differentiation potential	Embryoid body formation + qPCR (AFP, Brachyury, TUJ1)	Positive for endo/meso/ecto
Karyotype	G-banding (20 metaphases)	Normal (46,XX or 46,XY)
Mycoplasma	qPCR / broth/agar culture	Negative



Test	Method	Result
Bacterial/fungal sterility	USP 71 method	No growth
Viability post-thaw	Trypan blue exclusion	≥85% viable (30 min post-thaw)

Thawing and Culture Instructions

1. **Pre-coat vessel** with Smooth Coat solution (1 hour at 37°C).
2. **Thaw vial** in 37°C water bath (1–2 min until small ice crystal remains).
3. **Slowly add** 1 mL pre-warmed Stem cell medium to cryovial.
4. **Centrifuge** at 200 × g for 5 min (or plate directly if DMSO-tolerant).
5. **Resuspend pellet** in 1 mL complete medium + 10 µM ROCK inhibitor (Y-27632) for first 24h.
6. **Plate** into 1 well of 6-well plate or 1 × 35 mm dish.
7. **Change medium daily** (without ROCKi after Day 1).

Passage: When colonies are large (~70% confluence), use EDTA passaging (do not dissociate to single cells routinely).

Recommended Media & Reagents

Item	Recommended Product
Basal medium	Stem cell Medium



Item	Recommended Product
ROCK inhibitor	Y-27632 (10 μ M, first 24h only)
Coating matrix	Smooth Coat Solution
Cryopreservation medium	NEURO CELLBANKER

Storage & Stability

- **Arrival:** Thaw and plate immediately, or transfer to liquid nitrogen vapor phase within 24 hours in original packaging.
- **Long-term storage:** Liquid nitrogen vapor tank. **Do not store** at -80°C for more than 1 week.

Safety & Regulatory

- **Biosafety Level:** BSL-2 (human-derived cells, potential for teratoma formation in immunocompromised mice).
- **Sterility:** Tested negative for HIV-1/2, HBV, HCV, and HTLV-1/2 (donor blood sample if available).



- **Intended Use:** For research use only (RUO). Not for diagnostic, therapeutic, or clinical applications.

IMPORTANT: Quality warranty requires use of NeoBioPharma media. Biohazardous material despite negative pathogen testing. Quality claims must be reported within 1 month.