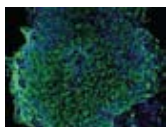


Key products for embryonic stem cell (ESC) culture

STEMPRO® hESC SFM

Cat. no. A10007-01 (1 kit)



Most-validated serum- and feeder-free medium—tested on over 15 human ESC (hESC) lines and one monkey ESC line:

- Maintains hESC pluripotency and normal morphology/karyotype over long term passaging (>80 passages)
- Maintains hESC differentiation capability
- Each lot is cGMP produced & performance qualified using PCR
- No or little adaptation required from feeder-based or conditioned medium cultures

STEMPRO® EZPassage™

Disposable Stem Cell Passaging Tool
Cat. no. 23181-010 (1 box, 10 units)



Cuts hESC colonies into uniform pieces for optimal passaging:

- Most recommended disposable hESC passaging tool
- Sterile
- Faster than existing mechanical and enzymatic transfer methods—takes under 1 minute to passage a 6-well plate
- More gentle on cells than enzymatic passaging
- Little or no up-front training required

BG01V/hOG Cells

Variant hESC hOct4-GFP Reporter Cells
Cat. no. R7799-105 (1 vial, ~2 × 10⁶ cells)



Visualize pluripotency using this variant hESC hOct4-GFP reporter cell line:

- Monitor hESC pluripotency without sacrificing cells and use as a reporter of the culture's response to external stimuli, including media composition and stress
- Provides visual readout—express GFP when pluripotent and lose GFP expression upon differentiation
- A great tool for hESC culture training

StemPro® EZChek™

Human Tri-Lineage Multiplex PCR Kit
Cat. no. 23191-050 (1 kit, 100 rxns)

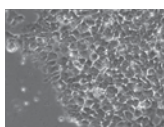


A multiplex PCR Kit for hESC characterization:

- Detects markers for the undifferentiated state and all three embryonic lineages in one PCR reaction using a convenient multiplex RT-PCR assay
- Requires smaller sample volumes than traditional characterization methods
- Contains all the reagents necessary to quickly isolate RNA, make cDNA and perform PCR to detect the expression of differentiation markers

Geltrex™

Reduced Growth Factor Basement Membrane Matrix
Cat. no. 12760-021 (5 ml)



Designed for use with STEMPRO® hESC SFM as a matrix to support hESC growth:

- High lot-to-lot protein concentration (12–18 mg/ml)
- Reduced growth factor content
- Functional testing on each lot
- A 3D matrix that mimics *in vivo* conditions; superior to 2D cell culture

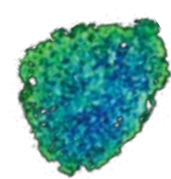
KnockOut™ Serum Replacement (KSR)

The Gold Standard for hESC culture
Cat. no. 10828-028 (500 ml)



Serum-free formulation designed to replace FBS in ESC culture:

- Cited in over 200 publications
- Can replace FBS for growth and maintenance of undifferentiated ESCs, ESC cryopreservation, blastocyst injection, electroporation/cationic lipid transfection, drug selection, isolation of new ESC lines, embryoid body formation, and *in vitro* differentiation



KnockOut™ DMEM(KO-DMEM)

Cat. no. 10829-018 (500 ml)

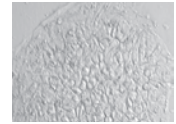


Reduced-osmolality basal medium designed to improve ESC morphology:

- Better mimics the natural environment of embryonic tissue
- Used together, KO-DMEM and KSR significantly reduce ESC differentiation compared to ESC-qualified FBS and traditional DMEM

KnockOut™ DMEM/F-12 (KO-DMEM/F-12)

Cat. no. 12660-012 (500 ml)



Reduced-osmolality basal medium designed to improve hESC growth and morphology:

- hESCs grown in KO-DMEM/F-12 exhibit accelerated growth, normal morphology/karyotype, pluripotency and little to no spontaneous differentiation
- hESC grown in KO-DMEM/F-12 have equivalent morphology to manually passaged hESCs, even after enzymatic passaging

Culture media and salt solutions

D-PBS without calcium and magnesium or phenol red 14190-144 (500 ml)	DMEM contains 4,500 mg/l D-glucose, without L-glutamine and sodium pyruvate 11960-044 (500 ml)	Fetal Bovine Serum, ES cell-qualified (US) 16141-061 (100 ml) 16141-079 (500 ml)	Fetal Bovine Serum, ES cell-qualified (USDA) 10439-016 (100 ml) 10439-024 (500 ml)
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Culture reagents

B-27 Serum-Free Supplement (50x) 17504-044 (10 ml)	Collagenase Type IV 17104-019 (1 g)	Dispase 17105-041 (5 g)	N-2 Supplement (100x) 17502-048 (5 ml)
Insulin-Transferrin-Selenium-G Supplement (100x) 41400-045 (10 ml)	Geneticin® Selective Antibiotic 10131-035 (20 ml) 10131-027 (100 ml)	Antibiotic-antimycotic (100x) 15240-062 (100 ml)	GlutaMAX™-I Supplement (stable form of L-glutamine) 35050-061 (100 ml)
MEM non-essential amino acids solution 10 mM (100x) 11140-050 (100 ml)	Lipofectamine™ 2000 Transfection Reagent 11668-027 (0.75 ml)	Lipofectamine™ 2000 CD Transfection Reagent (animal origin-free) 12566-014 (1 ml)	TrypLE™ Select (1x) (animal origin-free) 12563-011 (100 ml)

Growth factors

FGF-BASIC (full length) REC HU PHG0264 (10 µg)	FGF-8b REC HU PHG0274 (10 µg)	Noggin REC HU PHC1506 (20 µg)	Activin A REC HU PHG9014 (5 µg)
Cripto REC HU PHC8014 (10 µg)	Sonic Hedgehog (25-198) REC MS PMC2094 (10 µg)	Stem cell factor (SCF/C-KIT) REC HU PHC2115 (10 µg)	Insulin-like growth factor-I (IGF-I) REC HU PHG9074 (10 µg)
NAT HU FIBRONECTIN PHE0023 (1 mg)	Natural Mouse Laminin 23017-015 (1 mg)	BMP-2 REC HU PHC7094 (10 µg)	Wnt-1 REC HU PHC1804 (10 µg)

Antibodies

SSEA-1 41-1200	SSEA-3 41-4400	SSEA-4 41-4000	Tra-1-60 41-1000
Tra-1-81 41-1100	Sonic Hedgehog (Shh) 435800	CD9 AHS0907	E-Cadherin (Clone: ECCD-2) 13-1900

Invitrogen provides more than 1,200 products and services tailored to stem cell research, spanning isolation, characterization, expansion, and differentiation. For a complete review of Invitrogen stem cell technologies and services, visit www.invitrogen.com/stemcell.