Cell Culture and Tissue Regeneration

Stem Cells (human pluripotent stem cell (hPSC) line expansion and differentiation)
A fully defined and scalable 3D culture system for human pluripotent stem cell expansion and differentiation.
Lei Y, Schaffer DV.

Stem Cells (corneal limbal), review
Towards the use of hydrogels in the treatment of limbal stem cell deficiency
Bernice Wright, Shengli Mi, Che J. Connon
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Cell Culture (kidney cyst formation)
Mxi1 influences cyst formation in three-dimensional cell culture.
YJ Yook, KH Yoo, SA Song, MJ Seo, JY Ko, BH Kim, EJ Lee, E Chang, YM Woo, and JH Park
BMB Rep, Mar 2012; 45(3): 189-93.
PMID: 22449707

ROS Cell-Based Assay
Determination of Chronic Inflammatory States in Cancer Patients Using Assay of Reactive Oxygen Species
Production by Neutrophils
Yoko Suzuki, Satoshi Ohno, Ryuji Okuyama, Atsushi Aruga, Masakazu Yamamoto, Shigeki Miura, Hiroshi Yoshioka, Yuichi Mori, And Katsuhiko Suzuki
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ROS Cell-Based Assay
Effect of Green Tea Extract on Reactive Oxygen Species Produced by Neutrophils from Cancer Patients
Katsuhiko Suzuki, Satoshi Ohno, Yoko Suzuki, Yumiko Ohno, Ryuji Okuyama, Atsushi Aruga, Masakazu Yamamoto, Ken-O Ishihara, Tsutomu Nozaki, Shigeki Miura, Hiroshi Yoshioka, And Yuichi Mori
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Stem Cell Culture, Regenerative Medicine
Application of a Thermo-Reversible Gelation Polymer, Mebiol Gel, for Stem Cell Culture and Regenerative Medicine
Kataoka K and Huh N’
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FGF signaling directs a center-to-pole expansion of tubulogenesis in mouse testis differentiation.
Hiramatsu R, Harikae K, Tsunekawa N, Kurohmaru M, Matsuo I, Kanai Y.
PMID: 20040496

Stem Cells (corneal limbal)
Ex vivo cultivation of corneal limbal epithelial cells in a thermoreversible polymer (Mebiol Gel) and their transplantation in rabbits: an animal model.
G Sitalakshmi, B Sudha, HN Madhavan, S Vinay, S Krishnakumar, Y Mori, H Yoshioka, and S Abraham
PMID: 18724830
Stem Cell (corneal limbal)
Limbal Stem Cells: Application in Ocular Biomedicine Review Article
Geeta K. Vemuganti, Anees Fatima, Soundarya Lakshmi Madhira, Surendra Basti, Virender S. Sangwan
International Review of Cell and Molecular Biology, Volume 275, 2009, Pages 133-181
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Virus infection/replication system
3D cultured immortalized human hepatocytes useful to develop drugs for blood-borne HCV
Hussein Hassan Aly, Kunitada Shimotohno, Makoto Hijikata
Biochemical and Biophysical Research Communications, Volume 379, Issue 2, 6 February 2009, Pages 330-334
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Embryo Explant Culture
Antagonism between Smad1 and Smad2 signaling determines the site of distal visceral endoderm formation in the mouse embryo.
Yamamoto M, Beppu H, Takaoka K, Meno C, Li E, Miyazono K, Hamada H.
PMID:19153222

Hepatocyte Transplantation
Intraperitoneal Transplantation Of Hepatocytes Embedded In Thermoreversible Gelation Polymer (Mebiol Gel) In Acute Liver Failure Rat Model
N. Parveen, A.A. Khan, S. Baskar, M.A. Habeeb, P. Ravindra Babu, A. Samuel, Y. Hiroshi, M. Yuichi, C.M. Habibullah
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Stem Cells (mesenchymal)
Chordrogenic differentiation of human mesenchymal stem cells from umbilical cord blood in chemically synthesized thermoreversible polymer.
Kao, I, et al.

Hepatocyte Culture
Serum-derived hepatitis C virus infectivity in interferon regulatory factor-7-suppressed human primary hepatocytes
Hussein H. Aly, Koichi Watashi, Makoto Hijikata, Hiroyasu Kaneko, Yasutugu Takada, Hiroto Egawa, Shinji Uemoto, Kunitada Shimotohno
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Stem Cell (Corneal Limbal)
Cultivation of human corneal limbal stem cells in Mebiol gel--A thermo-reversible gelation polymer.
B Sudha, HN Madhavan, G Sitalakshmi, J Malathi, S Krishnakumar, Y Mori, H Yoshioka, and S Abraham
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Tissue Engineering (Bone)
In vitro culture of chondrocytes in a novel thermoreversible gelation polymer scaffold containing growth factors.
Yasuda A, Kojima K, Tinsley KW, Yoshioka H, Mori Y, Vacanti CA.
PMID: 16771637

Stem Cells (epithelial)
Isolation of epithelial stem cells from dermis by a three-dimensional culture system.

**Stem Cells (Corneal Limbal)**
Comparative Study on Growth Characteristics of Cadaveric Human Corneal Limbal Stem Cells in Mebiol Gel (a Synthetic Polymer) and on Human Amniotic Membrane. H.N. Madhavan, B. Sudha1, G. Sitalakshmi, S. KrishnaKumar, Y. Mori, H. Yoshioka and S. Abraham. Invest Ophthalmol Vis Sci 2006;47: E-Abstract 3033. 3033—B186

**Tissue Regeneration (Liver)**

**Virus Reproduction and Drug Screening**

**Embryo Culture**

**Evaluation of Cell Line Growth in Mebiol Gel**

**Stem Cell Culture and Differentiation**

**Liver Regeneration**
**Spheroid Culture (Cancer)**
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PMID: 8908335

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**Mebiol® Gel Non-Cell Culture Applications**

**NEW** Protein Crystallization Scaffold

**Scaffold for DNA Electrophoresis and Recovery**
Separation and recovery of DNA fragments by electrophoresis through a thermoreversible hydrogel composed of poly(ethylene oxide) and poly(propylene oxide).
Yoshioka H, Mori Y, Shimizu M.
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**Cell sorting switch**
On-Chip Cell Sorting System Using Laser-Induced Heating of a Thermoreversible Gelation Polymer to Control Flow
PMID: 16448041

**Cell sorting switch**
On-chip cell sorting system using laser-induced heating of a thermoreversible gelation polymer to control flow.
PMID: 16448041

**Cell sorting switch**
Microfluidic cell sorter with flow switching triggered by a sol–gel transition of a thermo-reversible gelation polymer.
Kazuto Ozaki, Hirokazu Sugino, Yoshitaka Shirasaki, Tokihiko Aoki, Takahiro Arakawa, Takashi Funatsu, Shuichi
DNA molecular Sorting
Microfluidic active sorting of DNA molecules labeled with single quantum dots using flow switching by a hydrogel sol–gel transition
Mai Haneoka, Yoshitaka Shirasaki, Hirokazu Sugino, Tokihiko Aoki, Takahiro Arakawa, Kazuto Ozaki, Dong Hyun Yoon, Noriyuki Ishii, Ryo Iizuka, Shuichi Shoji, Takashi Funatsu
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Novel drug delivery system using thermoreversible gelation polymer for malignant glioma.
Arai T, Joki T, Akiyama M, Agawa M, Mori Y, Yoshioka H, Abe T.
PMID: 16292493

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Alternatives to Animal Testing and Experimentation
Wakui et al. in vitro Thermoreversible Gel Disc Quantitative Assay of Rat Angiogenesis.
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Mebiol® Gel Physical Properties

Physical Properties
A synthetic hydrogel with thermoreversible gelation. II. : Effect of added salts.
H. Yoshioka, M. Mikami, Y. Mori, and E. Tsuchida.
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Thermoreversible gelation on heating and on cooling of an aqueous gelatin-poly(N-isopropylacrylamide) conjugate.
H. Yoshioka, Y. Mori, S. Tsukikawa, and S. Kubota,

Physical Properties
A Synthetic hydrogel with thermoreversible gelation. I. Preparation and rheological properties
H. Yoshioka, M. Mikami and Y. Mori.
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Preparation of Poly (N-Isopropylacrylamide)-b-Poly(Ethylene Glycol) and Calorimetric Analysis of its Aqueous Solution,
H. Yoshioka, M. Mikami and Y. Mori,
http://www.tandfonline.com/doi/abs/10.1080/10601329409349721#.UvFLB9KE1NQ

Physical Properties
A synthetic hydrogel with thermoreversible gelation. III. : An NMR study of the Sol-Gel transition.
H. Yoshioka, Y. Mori and James A. Cushman.