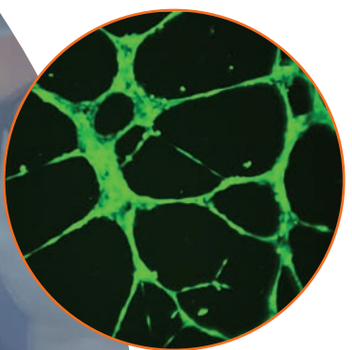
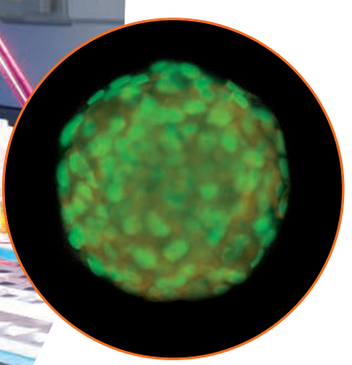
CULTREX® BASEMENT MEMBRANE EXTRACT & SPECIALTY PROTEINS



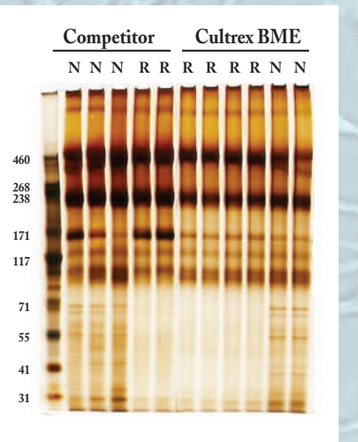


TREVIGEN®

BME PRODUCTS

Cultrex® Basement Membrane Extract

Trevigen Cultrex® Basement Membrane Extract is developed and manufactured to the highest standards in the industry. Lot-to-lot product consistency is second to none. Performance and contamination testing is thorough and comprehensive. Now, in our continuing effort to develop the best product for evolving research's needs, we offer choices in BME formulations: Cultrex® BME, Cultrex® BME Type 2, and Cultrex® BME Type 3, in order to more closely cater to your cell's preferred microenvironment. Find out which Cultrex® BME formulation is optimal for your cells. *Contact Trevigen today to order your samples.*



R: reduced growth factor,
N: non-reduced growth factor

BASEMENT MEMBRANE EXTRACT (BME)

Trevigen produces Cultrex® BME and Extracellular Matrix Component Proteins to exacting standards. All PathClear® products are tested for the absence of LDEV twice: as a raw material (by MAP test and PCR) and as a final material (by PCR). In addition, PathClear® testing on the final product includes mycoplasma and 30 other pathogens and viruses. Cultrex® Basement Membrane Extracts have the lowest level of endotoxins by competitive comparison. The specification is equal to or less than 8 EU and most lots produced are actually less than 5 EU.

Shared Specifications:
- Endotoxin (LPS) Concentration: ≤ 8 EU/ml
- Source: Murine Engelbreth-Holm-Swarm (EHS) tumor
- Storage Buffer: Dulbecco's Modified Eagle's medium containing 10 µg/ml gentamycin sulfate +/- phenol red.
- Storage/Stability: Product is stable for a minimum of 3 months from date of shipment when stored at -20°C in a manual defrost freezer. **For optimal stability, store at -80°C in aliquots. Keep frozen; repeated freeze-thaws will destroy product integrity.**

Functional Assays:
- Tube Formation Assay: Basement Membrane Extract type promotes differentiation of human umbilical vein endothelial cells (HUVEC) into capillary-like structures.
- 3-D Culture: Basement Membrane Extract type promotes differentiation of a human epithelial cell line derived from mammary gland (MCF-10A) and human prostate (PC-3) into acinar structures.

Standard Sterility Testing:
- Endotoxin Concentration: ≤ 8 EU/ml by LAL assay.
- No bacterial or fungal growth detected after incubation at 37°C for 14 days following USP XXIV Chapter 71 sterility test.
- No mycoplasma contamination detected by PCR.

PathClear® Sterility Testing (Mouse):
- Endotoxin Concentration: ≤ 8 EU/ml by LAL assay.
- No bacterial or fungal growth detected after incubation at 37°C for 14 days following USP XXIV Chapter 71 sterility test.
- No mycoplasma contamination detected by PCR.
- Negative by PCR test for: mycoplasma, 17 bacterial and virus strains typically included in mouse antibody production (MAP) testing including lactate dehydrogenase elevating virus (LDEV), plus 13 additional murine infectious agents, for a total of 31 organisms and viruses.

PathClear® Sterility Testing (Human):
- Endotoxin Concentration: ≤ 8 EU/ml by LAL assay.
- No bacterial or fungal growth detected after incubation at 37°C for 14 days following USP XXIV Chapter 71 sterility test.
- No mycoplasma contamination detected by PCR.
- Negative by PCR test for: eight human pathogenic viruses including Hepatitis A, B and C, HIV 1 and 2, Hantaan, Seoul, and Sin Nombre.

In addition to sterility testing, all human derived materials must be negative by PCR test for eight human pathogens including HIV 1, and 2 and Hepatitis A, B and C.

Our BME and ECM component products are also functionally tested using cell types and protocols accepted by the research community as exhibiting the sensitivity and stringency to rigorously challenge the product.

The Cultrex® product testing for function and purity is performed for each lot of product manufactured.

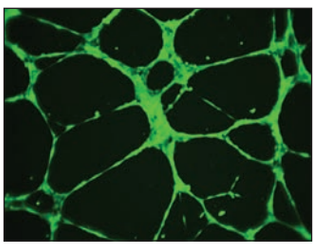
*Phenol Red vials are included in shipments for free only by request.

Type*	Concent. mg/ml	Tensile Strength	Buffer	Catalog No.	Size
Cultrex® Basement Membrane Extract, PathClear®					
Regular	15 mg/ml	Medium	DMEM	3432-001-01	1 ml
Regular				3432-005-01	5 ml
Regular				3432-010-01	2 x 5 ml
Reduced Growth Factor				3433-001-01	1 ml
Reduced Growth Factor				3433-005-01	5 ml
Reduced Growth Factor				3433-010-01	2 x 5 ml
Cultrex® Basement Membrane Extract, Type 2, PathClear®					
Regular	15 mg/ml	High	DMEM	3532-001-02	1 ml
Regular				3532-005-02	5 ml
Regular				3532-010-02	2 x 5 ml
Reduced Growth Factor				3533-001-02	1 ml
Reduced Growth Factor				3533-005-02	5 ml
Reduced Growth Factor				3533-010-02	2 x 5 ml
Cultrex® Basement Membrane Extract, Type 3, PathClear®					
Regular	15 mg/ml	High	RPMI1640	3632-001-02	1 ml
Regular				3632-005-02	5 ml
Regular				3632-010-02	2 x 5 ml
Cultrex® 3-D Culture Matrix™ Basement Membrane Extract, PathClear®					
Reduced Growth Factor	15 mg/ml	Medium	DMEM	3445-001-01	1 ml
Reduced Growth Factor				3445-005-01	5 ml
Reduced Growth Factor				3445-010-01	2 x 5 ml
Cultrex® Stem Cell Qualified Basement Membrane Extract, PathClear®					
Reduced Growth Factor	15 mg/ml	Medium	DMEM	3434-001-02	1 ml
Reduced Growth Factor				3434-005-02	5 ml
Human				3415-001-03	1 ml

All Cultrex® BME is now certified PathClear® for no additional cost

Cultrex® BME (Original)

Cultrex® BME (Original) is made following the original protocol by H. Kleinman and G. Martin, and is functionally qualified with the tube formation assay.



Human Umbilical Vein Endothelial Cells (HUVEC) were cultured on gelled PathClear® RGF BME for four hours at 37°C and 5% CO_2 in Endothelial Growth Medium 2 (EGM2) and then labeled with 2 µM Calcein AM. Images were taken on a fluorescent microscope equipped with a 10X objective.

Cultrex® Type 2 BME

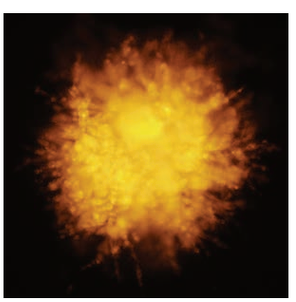
BME 2 provides a proprietary formulation that is higher in tensile strength when compared to our original BME. It has been shown to work well for growing organoids and xenografts.

Cultrex® Type 3 BME

BME 3 is physiologically aligned with the in vivo tumor microenvironment and has been shown to work for xenografts and other in vivo applications. This matrix also has increased tensile strength, as well as lower pH.

3-D Culture Matrix™

3-D Culture is a cell culture method that provides cells with the necessary structure and signaling cues to direct reconstruction of the architecture. This method provides physiologically predictive in vitro models for evaluating development and disease.



Stem Cell Qualified Cultrex® BME

Cultrex® Stem Cell Qualified Human Basement Membrane Extract (BME) has been shown to provide an effective feeder-free surface for the attachment and maintenance of human embryonic stem cells (hESCs) and induced pluripotent stem cells (iPSCs) in an undifferentiated state.

Original BME

Description	Size	Catalog No.
Cultrex® BME PathClear®	1 ml	3432-001-01
Cultrex® BME PathClear®	5 ml	3432-005-01
Cultrex® BME PathClear®	2 x 5 ml	3432-010-01
Cultrex® BME Reduced Growth Factor PathClear®	1 ml	3433-001-01
Cultrex® BME Reduced Growth Factor PathClear®	5 ml	3433-005-01
Cultrex® BME Reduced Growth Factor PathClear®	2 x 5 ml	3433-010-01

Type 2 BME

Description	Size	Catalog No.
Cultrex® BME Type 2, PathClear®	1 ml	3532-001-02
Cultrex® BME Type 2, PathClear®	5 ml	3532-005-02
Cultrex® BME Type 2, PathClear®	2 x 5 ml	3532-010-02
Cultrex® BME Reduced Growth Factor Type 2, PathClear®	1 ml	3533-001-02
Cultrex® BME Reduced Growth Factor Type 2, PathClear®	5 ml	3533-005-02
Cultrex® BME Reduced Growth Factor Type 2, PathClear®	2 x 5 ml	3533-010-02

Type 3 BME

Description	Size	Catalog No.
Cultrex® BME Type 3, PathClear®	1 ml	3632-001-02
Cultrex® BME Type 3, PathClear®	5 ml	3632-005-02
Cultrex® BME Type 3, PathClear®	2 x 5 ml	3632-010-02

3-D BME

Description	Size	Catalog No.
Cultrex® 3-D Culture Matrix™ BME Reduced Growth Factor PathClear®	1 ml	3445-001-01
Cultrex® 3-D Culture Matrix™ BME Reduced Growth Factor PathClear®	5 ml	3445-005-01
Cultrex® 3-D Culture Matrix™ BME Reduced Growth Factor PathClear®	2 x 5 ml	3445-010-01
Cultrex® 3-D Culture Matrix™ BME Spheriod Formation Matrix PathClear®	600 µl	3500-096-01
Cultrex® 3-D Culture Matrix™ BME Spheriod Invasion Matrix PathClear®	6 ml	3500-096-03

Stem Cell Qualified BME

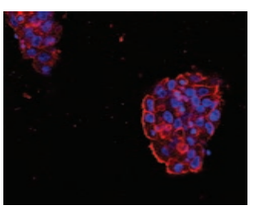
Description	Size	Catalog No.
Cultrex® Stem Cell Qualified BME Reduced Growth Factor PathClear®	1 ml	3434-001-02
Cultrex® Stem Cell Qualified BME Reduced Growth Factor PathClear®	5 ml	3434-005-02
Cultrex® Stem Cell Qualified BME Human, PathClear®	1 ml	3415-001-03

All standard BME types and our specialty BME matrices are available in trial sizes for your testing convenience. BME lots can be reserved for your research requirements.

SPECIALTY PROTEINS

Description	Size	Catalog No.
Cultrex® Mouse Laminin I	1 mg	3400-010-01
Cultrex® Mouse Laminin I, PathClear®	1 mg	3400-010-02
Cultrex® Collagen I (Bovine)	1 ml	3442-005-01
Cultrex® Collagen I (Bovine)	50 mg	3442-050-01
Cultrex® Rat Collagen I	1 ml	3440-005-01
Cultrex® Rat Collagen I	20 ml	3440-100-01
Cultrex® Rat Collagen I, Lower Viscosity	1 ml; 3 mg/ml	3443-003-01
Cultrex® Rat Collagen I, Lower Viscosity	35 ml; 3 mg/ml	3443-003-01
Cultrex® Mouse Collagen IV	1 mg	3410-010-01
Cultrex® 3-D Culture Matrix Laminin I	30 mg	3446-005-01
Cultrex® 3-D Culture Matrix Rat Collagen I	20 ml	3447-020-01
Cultrex® Human Vitronectin, PathClear®	50 µg	3421-001-01
Cultrex® Human Vitronectin, Nucleic Acids Reduced, PathClear®	50 µg	3422-001-01
Cultrex® Human Fibronectin, PathClear®	1 mg	3420-001-01

Description	Size	Catalog No.
Cultrex® Mouse Laminin I, PathClear®	1 mg	3400-010-02
Cultrex® Stem Cell Qualified Human Fibronectin, PathClear®	1 mg	3420-001-03
Cultrex® Fibronectin (Bovine)	1 mg	3416-001-01
Cultrex® Vitronectin (Bovine)	50 µg	3417-001-01
Cultrex® Poly-D-Lysine	100 ml	3439-100-01
Cultrex® Poly-L-Lysine	100 ml	3438-100-01
Cultrex® Spheroid Formation Matrix	600 µl	3500-096-01
Cultrex® Spheroid Invasion Matrix	6 ml	3500-096-03



MCF10A cells grown in collagen I gel and stained with hoechst and anti-β-catenin antibody to visualize cell boundaries. Image courtesy of J. Partanen & J. Klefstrom, University of Helsinki. Partanen, J.I., Mäkelä, T.P. and Klefstrom, J. 2007. Suppression of oncogenic properties of c-Myc by LKB1-controlled epithelial organization. PNAS 104: 14694 - 14699.

CITATIONS

Innate immune suppression enables frequent transfection with RNA encoding reprogramming proteins ***PathClear® BME***

Angel M, Yanik MF
PLoS ONE 5(7): e11756. doi:10.1371/journal.pone.0011756.

Metastatic growth from dormant cells induced by a Col-I-enriched fibrotic environment ***BME***

Dalit Barkan, Lara H. El Touny, Aleksandra M. Michalowski, Jane Ann Smith, Isabel Chu, Anne Sally Davis, Joshua D. Webster, Shelley Hoover, R. Mark Simpson, Jack Gauldie, and Jeffrey E. Green
Cancer Res., July 2010; 70: 5706 - 5716.

PDGF-CC blockade inhibits pathological angiogenesis by acting on multiple cellular and molecular targets ***BME***

Xu Hou, Anil Kumar, Chunsik Lee, Bin Wang, Pachiappan Arjunan, Lijin Dong, Arvydas Maminishkis, Zhongshu Tang, Yang Li, Fan Zhang, Shi-Zhuang Zhang, Piotr Wardega, Sagarika Chakrabarty, Baoying Liu, Zhijian Wu, Peter Colosi, Robert N. Fariss, Johan Lennartsson, Robert Nussenblatt, J. Silvio Gutkind, Yihai Cao, and Xuri Li
PNAS, July 2010; 107: 12216 - 12221.

Platelet-derived growth factor-DD targeting arrests pathological angiogenesis by modulating Glycogen Synthase Kinase-3β Phosphorylation ***BME***

Anil Kumar, Xu Hou, Chunsik Lee, Yang Li, Arvydas Maminishkis, Zhongshu Tang, Fan Zhang, Harald F. Langer, Pachiappan Arjunan, Lijin Dong, Zhijian Wu, Linda Y. Zhu, Lianchun Wang, Wang Min, Peter Colosi, Triantafyllos Chavakis, and Xuri Li
J. Biol. Chem., May 2010; 285: 15500 - 15510.

CITATIONS

Induction of nitric oxide by erythropoietin is mediated by the β common receptor and requires interaction with VEGF receptor 2 ***BME***

Larysa Sautina, Yuri Sautin, Elaine Beem, Zhuo Zhou, Anna Schuler, Jennafer Brennan, Sergey I. Zharikov, YanPeng Diao, Jorg Bungert, and Mark S. Segal
Blood, Jan 2010; 115: 896 - 905.

Fibroblast hepatocyte growth factor promotes invasion of human mammary ductal carcinoma in situ ***BME***

Christopher Jedeszko, Bernadette C. Victor, Izabela Podgorski, and Bonnie F. Sloane
Cancer Res., Dec 2009; 69: 9148 - 9155.

Antiphosphatidylserine antibody combined with irradiation damages tumor blood vessels and induces tumor immunity in a rat model of glioblastoma ***BME***

Jin He, YiYin, Troy A. Luster, Linda Watkins, and Philip E. Thorpe
Clin. Cancer Res., Nov 2009; 15: 6871 - 6880.

Hypoxia-inducible factor-1-mediated regulation of Semaphorin 4D affects tumor growth and vascularity ***BME***

Qiangming Sun, Hua Zhou, Nada O. Binmadi, and John R. Basile
J. Biol. Chem., Nov 2009; 284: 32066 - 32074.

Regulation of transgenes in three-dimensional cultures of primary mouse mammary cells demonstrates oncogene dependence and identifies cells that survive deinduction ***3-D BME***

Martin Jechlinger, Katrina Podsypanina, and Harold Varmus
Genes & Dev., July 2009; 23: 1677 - 1688.

Activation of NF-B signaling by inhibitor of NF-B Kinase β increases aggressiveness of ovarian cancer ***Cell Invasion Assay***

Lidia Hernandez, Sarah C. Hsu, Ben Davidson, Michael J. Birrer, Elise C. Kohn, and Christina M. Annunziata
Cancer Res., May 2010; 70: 4005 - 4014.

Hyperoxia disrupts vascular endothelial growth factor-nitric oxide signaling and decreases growth of endothelial colony-forming cells from preterm infants ***Collagen I***

Hideshi Fujinaga, Christopher D. Baker, Sharon L. Ryan, Neil E. Markham, Gregory J. Seedorf, Vivek Balasubramaniam, and Steven H. Abman
Am. J. Physiol. Lung cell Mol. Physiol., Dec 2009; 297: L1160 - L1169.

The human cathelicidin LL-37 preferentially promotes apoptosis of infected airway epithelium ***Collagen IV***

Peter G. Barlow, Paula E. Beaumont, Celine Cosseau, Annie Mackellar, Thomas S. Wilkinson, Robert E.W. Hancock, Chris Haslett, John R. Govan, A. John Simpson, and Donald J. Davidson
Am. J. Respir. Cell Mol. Biol., Jan 2010; 10.1165/rcmb.2009-0250OC.

IN VITRO DIFFERENTIATION

Cultrex® BME (Original)

CELLS/EXPLANT	RESPONSE	REFERENCE/ PROTOCOLS
Cell lines		
Prostate*	Acinar formation, glands	Webber, M.M. et al. 1997. Acinar differentiation by non-malignant immortalized human prostatic epithelial cells and it's loss by malignant cells. *Carcinogenesis* 18:1225-1231.
Salivary*	Acinar formation, amylase production	Royce, L.. et al. 1993. Human neoplastic submandibular intercalated duct cells express and acinar phenotype when cultured on a basement membrane matrix. *Differentiation*. 52:247-255.
Mammary epithelial*	Duct and lumina formation, increased casein	Seely, K.A. & Aggeler, J. 1991. Modulation of milk protein synthesis through alteration of the cytoskeleton in mouse mammary epithelial cells cultured on a reconstituted basement membrane. *J. Cell Physiol*. 146:117-130.
MDCK* Cells	Polarized cyst	Rahinkkala, M. et al 2001. Effects of SRC Kinnse and TGF beta I on the differentiation and morphogenesis of MDCK cells grown in three-dimensional collagen and matrigel environments. *J. Pathol*. 195:391-400.
Pancreas Cells	Acinar differentiation	Arias, A.E. & Bendayan, M. 1993. Differentiation of pancreatic acinar cells into duct-like cells Invitro. *Lab Invest*. 69:518-530.
Schwann cells*	Differentiation	
Intestinal cells*	Differentiation	Sanderson, T.R. et al. 1996. Human fetal enterocytes in vitro: modulation of phenotype by extracellular matrix. *Proc. Natl. Acad. Sci.* 1996 93:7717-7722.
Bone cells	Canaliculi formation	Vukiceric, S. et al. 1990. Differentiation of Canalicular cell processes in bone cells by basement membrane matrix components: regulation by discrete domains of laminin. *Cell*. 63:437-445.
Blastocyst stem cells	Immature glandular & tubular structures	Philip, D. et al. 2005. Complex extracellular matrices promote tissue-specific stem cell differentiation. *Stem Cells*. 23:288-296.
Primary cells		
Sertoli Cells	Columnar epithelium	Papadopoulos, V. & Dym, M. 1994. Sertoli Cell differentiation on the basement membrane is mediated by C-fos proto oncogene. *Pro. Natl. Acad. Sci.* USA 91:7027-7031.
Hepatocytes*	Morphology maintained, albumen production	Friedman, S.L. et al. Maintenance of differentiated phenotype of cultured rat lipocytes by basement membrane matrix. *J. Biol. Chem*. 264:10756-10762.
Chondrocytes	Cartilage formation	Bradham, D.M. et al. 1995. Mesenchgmal cell chondrogenesis is stimulated by basement membrane matrix and inhibited by age associated factors. *Matrix Biol*. 14:561-571.
Endothelial cells*	Capillary tubes with lumen	Morale, D.E. et al. 1995. Estrogen promotes angiogenic activity in human umbilical vein endothelial cells in vitro and in a murine model. *Circulation* 91:755-763.
Endometrial cells	Columnar epithelium, glands	Strunck, E. et al. 2001. Expression of 1-3- phosphoserine phosphatase is regulated by reconstituted basement membrane. *Biochem. Biophys. Res Common*. 281:747-753.
Oviduct epithelium	Tubes with ciliated cells	Joshi, M.S. 1991. Growth and Differentiation of the cultured secretory cells of the cow oviduct on reconstituted basement membrane. *J. Exp. Zool*. 260:229-238.
Murine Prostate Stem Cell	Form spheroids and prostate tubular structures	Xin, L. et al. 2007. Self-renewal and multilineage differentiation in vitro from murine prostate stem cells. *Stem Cells*. 25:2760-2769.
Tissue explants	Outgrowth	Newby, D. 2005. Villous explant culture: Characterization and evaluation of a model to study trophoblast invasion. *Hypertens. Pregnancy*. 2005 24:75-91.
Neural crest	Outgrowth	Bilozur, M.E. & Hay, E.D. 1988. Neural crest migration in 3D Extracellular matrix utilizes laminin, fibronectin, or collagen. *Dev. Biol*. 125:19-33.
Dorsal root ganglia explants	Outgrowth with myelin production	Carey, D.J. et al. 1986. Schwann cell myelination: induction by exogenous basement membrane-like extracellular matrix. *J. Cell Biol*. 1986 102:2254-2263.
Immature follicles	Hair growth	Harvlickova, B. et al. 2004. Towards optimization of an organotypic Assay system that imitates hair follide like epithelial mescenchymal interactions. *Br. J. Dermazol*. 2004 151:753-765.
Aortic rings	Vessel outgrowth	Malinoa, K.M. et al. 1999. Indentification of laminin alpha 1 and beta 1 chain peptides action for endothelial cell adhesion, tube formation and aortic sprouting. *FASEB*. 1999. 13:53-62.
Ookinetes (zygote)	Sporogonic development of malaria parasite	Warburg, A. & Miller, L.H. 1992. Sporogenic development of malaria parasite in vitro. *Science*. 255:448-450.

** denotes activity with both primary cells and cell lines.*

FAQS

1. How should Basement Membrane Extract (BME) be stored and handled?

BME should be stored at or below –20°C in a manual defrost freezer. Preparation of working aliquots is recommended. BME should be thawed overnight on ice at 4°C (refrigeration). Long term storage at 4°C is not recommended due to temperature fluctuations. Freeze/thaw cycles and gel-liquid phase transitions can compromise product integrity. BME gels at room temperature therefore must always be handled on ice. All materials should be chilled.

2. Can BME be diluted?

Yes, dilute BME in tissue culture media at physiological pH at 4°C. BME will form a gel when diluted to 10 mg/ml; however, further dilutions may require optimization.

3. How does Cultrex® BME promote cell differentiation?

All epithelial and endothelial cells are in contact with a basement membrane matrix on at least one of their surfaces. By providing them with their natural matrix in vitro, as a substrate for the cells that provides biological cues, the cells can assume a more physiological morphology (i.e. correct shape) and begin expression of cell lineage specific proteins. Two-dimensional plastic substrates, in combination with serum-containing media, cause cells to flatten, proliferate and de-differentiate.

4. How does Cultrex® BME promote tumor growth?

Tumor cells and fragments of biopsy specimens grow well in vivo when implanted with Cultrex® BME. Typically less than 5% of biopsy specimens will grow when implanted directly. In our experience better than 95% of the tested specimens grew. The HC20+™ in vivo specifically promotes growth due to biological signals coming from the matrix components (i.e. laminin, collagen IV, etc) and the growth and angiogenic factors present in the matrix. When the proteases from tumor cells degrade the Cultrex® BME, the bioactive fragments of the matrix components and growth factors act directly on the tumor cells and also recruit nearby vessels to begin angiogenesis.

5. What kind of tumor cells/biopsy specimens grow in vivo?

All cell lines and tumor biopsy specimens (usually cut into small fragments) have been found to grow in vivo when implanted with Cultrex® BME. These include melanoma, intestinal, prostate, breast, lung, renal and liver cancers as well as even 3T3 cells.

6. How will non-tumorigenic cells/tissues grow or differentiate when implanted in vivo in Cultrex® BME?

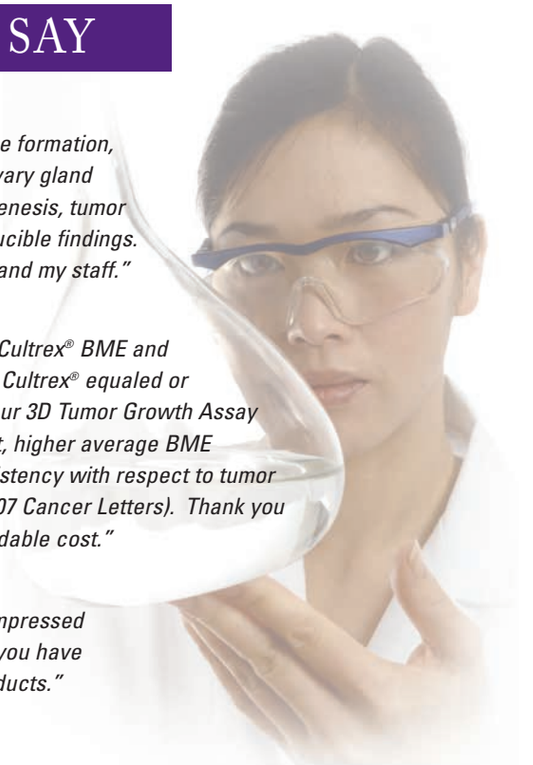
Non transformed cells mixed with Cultrex® BME and implanted in vivo have been found to continue to survive and remain differentiated but generally do not grow. No normal tissues have been found to transform under these conditions. For example, Sertoli cells survive at least a week and retain their cord-like structures. We again encourage investigators to try different cell types and let us know their results.

7. Which basement membrane protein is best for studying invasion?

For investigating general cell invasion, BME or collagen I coated inserts can be used to look at invasion through connective tissue; this would give the most physiologically significant result for screening compounds or genes that inhibit or promote invasion. For researching specific aspects or mechanisms of cell invasion, the laminin I, collagen IV, and the collagen I kits provide purified proteins to study these specific interactions. The key difference is overall physiological significance vs. specific mechanism of action.

For more FAQs, please visit www.trevigen.com/faqs/faq_sections.php

WHAT CUSTOMERS SAY



Hynda K. Kleinman
Guest, NIH

"We have used Cultrex® in all of our in vitro (endothelial cell tube formation, stem cell differentiation), ex vivo (aortic explant outgrowth, salivary gland organ differentiation), and in vivo assays (subcutaneous angiogenesis, tumor growth promotion) where it has worked well with highly reproducible findings. The fast delivery and availability was highly appreciated by me and my staff."

Brett M. Hall, Ph.D.
Assistant Professor of Pediatrics
The Ohio State University School of Medicine
Investigator, Center for Childhood Cancer
Columbus Children's Research Institute

"After comparing head-to-head Trevigen's Cultrex® BME and BD Biosciences Matrigel™ BME, Trevigen's Cultrex® equaled or exceeded BD's Matrigel™ BME product in our 3D Tumor Growth Assay (TGA). Cultrex® BME has a lower retail cost, higher average BME concentration, and superior lot-to-lot consistency with respect to tumor cell growth in the 3D TGA (Sasser, et al. 2007 Cancer Letters). Thank you for making an excellent product at an affordable cost."

Henry Lopez
President/CSO
MuriGenics, Inc.

"The product is of the highest quality, I'm particularly impressed with the quality assurance program (PathClear® BME) you have in place. We look forward to continued use of your products."

RELATED PRODUCTS

Directed In Vivo Angiogenesis Assays

Description	Size	Catalog No.
DIVAA™ Starter Kit	48 Tests	3450-048-SK
DIVAA™ Activation Kit	48 Tests	3450-048-K
DIVAA™ Inhibition Kit	48 Tests	3450-048-IK
AngioRack™	1 Rack	3450-048-09

Cultrex® 3-D Spheroid Assays

Description	Size	Catalog No.
Cultrex®3-D Spheroid Cell Invasion Assay	96 samples	3500-096-K
Cultrex®3-D Spheroid Fluorometric Proliferation/Viability Assay	96 samples	3510-096-K
Cultrex®3-D Spheroid Colorimetric Proliferation/Viability Assay	96 samples	3511-096-K

Cultrex® 3-D Culture Cell Harvesting Kit

Description	Size	Catalog No.
3-D Culture Cell Harvesting Kit	20 Tests	3448-020-K

Cultrex® 3-D Culture Cell Proliferation Assays

Description	Size	Catalog No.
3-D Culture Cell Proliferation Assay Core Kit	96 Tests	3445-096-CK
3-D Culture BME Cell Proliferation Assay Kit	96 Tests	3445-096-K
3-D Culture Laminin I Cell Proliferation Assay Kit	96 Tests	3446-096-K
3-D Culture Collagen I Cell Proliferation Assay Kit	96 Tests	3447-096-K

ABOUT US

Trevigen, Inc. focuses on the development of products for cancer research, drug discovery, genetic toxicology, regenerative medicine and stem cell work. We offer kits and reagents for the study of **DNA damage & repair, apoptosis, oxidative stress, cancer cell behavior, 3D culture, and stem cells.**

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