

CellPlayer™ 96-Well Cell Invasion BD Matrigel™ Matrix (GFR):

Biologically Quality-Controlled Basement Membrane Matrix (Growth Factor Reduced) 10 ml

EsSEN BioScience Catalog Number: 4451

Presentation, Storage and Stability

Source:	Engelbreth-Holm-Swarm (EHS) Mouse Tumor
Quantity:	10 ml (lot specific information provided upon shipment)
Formulation:	Dulbecco's Modified Eagle's Medium with 50 µg/ml gentamycin. BD Matrigel Basement Membrane Matrix is compatible with all culture media.
Stability:	Stable for a minimum of 3 months from day of shipment when stored at -20°C
Storage:	KEEP FROZEN

Background

Basement membranes are thin extracellular matrices underlying cells *in vivo*. BD Matrigel Matrix is a solubilized basement membrane preparation extracted from the Engelbreth-Holm-Swarm (EHS) mouse sarcoma, a tumor rich in extracellular matrix proteins. Its major component is laminin, followed by collagen IV, heparan sulfate proteoglycans, and entactin/nidogen. BD Matrigel Matrix also contains TGF-beta, epidermal growth factor, insulin-like growth factor, fibroblast growth factor, tissue plasminogen activator, and other growth factors which occur naturally in the EHS tumor.

BD Matrigel Matrix Growth Factor Reduced was developed for those who require a reconstituted basement membrane preparation purified and characterized to a greater extent than BD Matrigel Matrix. The method used to prepare this product effectively reduced the level of a variety of growth factors except for TGF-beta which may be bound to collagen IV and/or sequestered in a latent form that partitions with the major components in the purification procedure. The major components: laminin, collagen IV and entactin (nidogen) are conserved by the process while the level of heparan sulfate proteoglycan is reduced by 40-50%. The following table shows the values for growth factors in BD Matrigel Matrix compared to a typical lot of BD Matrigel Matrix Growth Factor Reduced.

Parameter	BD Matrigel Matrix	BD Matrigel Matrix Growth Factor Reduced
bFGF (pg/ml)	0 - 0.1	0 - 0.1
EGF (ng/ml)	0.5 - 1.3	< 0.5
IGF-1 (ng/ml)	15.6	5
PDGF (pg/ml)	12	< 5
NGF (ng/ml)	< 0.2	< 0.2
TGF-beta (ng/ml)	2.3	1.7
% Protein that gels	80	83

Please refer to Catalog Number 354230 at <http://www.bdbiosciences.com> for additional information.

Essen Biological Quality Control Testing

BD Matrigel Matrix can be used in combination with the Essen BioScience IncuCyte™ live-cell imaging system and the CellPlayer™ 96-Well Cell Migration/Invasion Assay Kit to study invasion. The extra-cellular matrix available from Essen BioScience consists of biologically quality controlled lots of Matrigel (GFR) obtained from BD Biosciences (Cat.# 354230). Extensive testing at Essen BioScience has shown that not all lots *or* commercial sources of extra-cellular matrix reagents are compatible with the CellPlayer™ 96-Well Cell Invasion Assay. The testing protocol used at Essen BioScience analyzes kinetic data from HT 1080 cells using the IncuCyte™ Migration/Invasion - Relative Wound Density metric to ensure consistent wound closure kinetics from well-to-well. Migrating cells move much faster, and can easily be flagged using kinetic platemap data from the IncuCyte™ (Figure 1A,1B). In addition, each individual well is visually inspected to insure that a spatially homogeneous invasive morphology consistent with the HT1080 cells is observed Figure (1C). Our criteria for approving compatible lots ensures that over 95% of tested wells pass both assessments in at least 192 individual wells collected over 4 separate experiments. Not all matrix components tested have met these strict criteria.

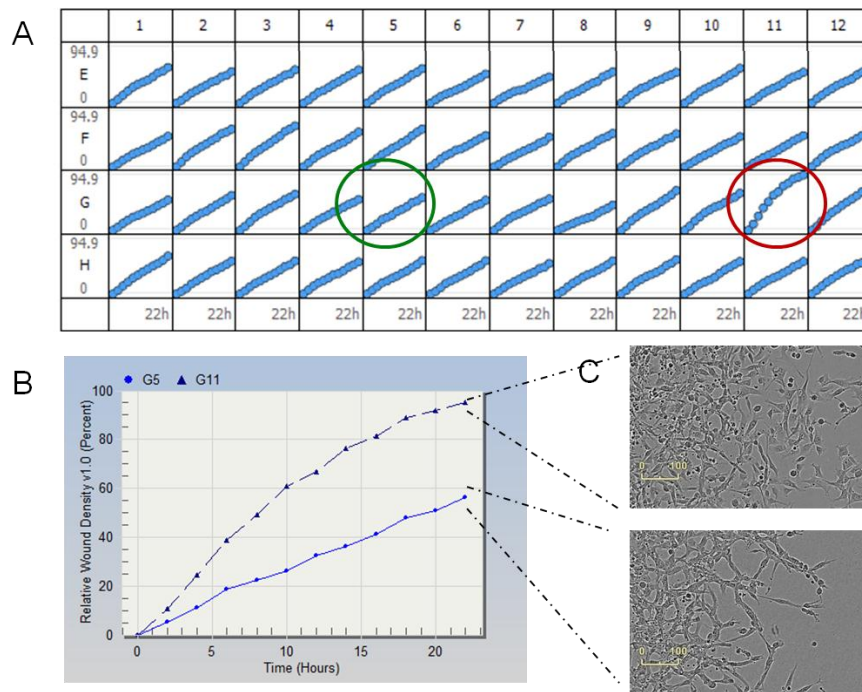


Figure 1: Extracellular Matrix reagent testing at Essen BioScience has revealed lot-to-lot variations as well as differences between commercial sources. Essen BioScience has removed this research variable by offering a line of biologically quality tested reagents. Figure 1A represents an example IncuCyte™ kinetic microplate graph from internal testing using HT 1080 cells. The green circle highlights a well exhibiting a migration rate consistent with an *invasive phenotype*, whereas the red circle denotes a well which is exhibiting a faster *migration phenotype*. Figure 1B is an expanded kinetic trace of both wells. Figure 1C represents the respective well images taken at the 24 hour time point illustrating the obvious differences in morphology. Essen BioScience quality controlled ECM lots undergo extensive testing where both the rate, as well as the morphology of at least 192 individual wells are examined over 4 separate experiments.



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Recommended Use

This reagent can also be used as an extracellular matrix for invasion studies using the Essen BioScience IncuCyte™ live-cell imaging system and the CellPlayer™ 96-Well Cell Migration/Invasion Assay Kit. For additional information including a simplified description of the protocol and an extensive application note, please visit our webpage at <http://essenbioscience.com/productsAppInvasion.html>.

For a detailed protocol including use of the CellPlayer™ 96-Well Cell Migration/Invasion Assay Kit and additional information, please contact Essen BioScience at: sales@essenbio.com.

MSDS Information

MSDS information can be found at:

http://www.bdbiosciences.com/external_files/dl/doc/msds/live/web_enabled/354230-MSDS-USAUSA.pdf

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