

## CellPlayer™ Angiogenesis LiveKit

Essen BioScience Catalog Number: 4436

### Presentation, Storage and Stability

#### Contents:

The Essen BioScience CellPlayer Angiogenesis LiveKit is composed of a tissue culture plate containing proliferating early passage normal human endothelial cells co-cultured with early passage normal human interstitial cells in a specially formulated culture medium. The kit contains sufficient culture medium to support development of the assay over the required 14 day period. The contents of the kit, when handled according to the established protocol, will result in the formation of angiogenic networks over the course of the 14 day assay. Kit contents are as follows:

#### **Room Temperature Shipment:**

- 1) Sealed 96-well Assay Plate containing NHDF and GFP-HUVEC in co-culture.
- 2) 5 x 25 mL bottles containing Assay Media
- 3) Sterile Plate Lid

#### Storage and stability:

- 1) Upon arrival, the seal on the assay plate containing cells in co-culture should be removed and the plate should be **IMMEDIATELY** transferred to 37 °C. After acclimating to 37 °C, the media should be replaced with fresh assay media containing the desired concentration of growth factor and/or test agent.
- 2) The optimized assay media in this kit should be **REFRIGERATED** at 4 °C until use or the expiration date located on each bottle. The kit contains sufficient culture medium to support development of the assay over the required 14 day period.

### Background and Intended Use

The CellPlayer Angiogenesis LiveKit contains a 96-well tissue culture plate seeded with proliferating early passage normal human endothelial cells co-cultured with early passage normal human interstitial cells in a specially formulated culture medium. When handled according to the Essen BioScience CellPlayer Angiogenesis LiveKit protocol, this co-culture model recapitulates all phases of the *in vivo* angiogenesis process, including cell proliferation, migration, morphogenesis, and anastomosis. Under basal conditions, these cultures exhibit only a low level of capillary-like tubules after 10-14 days, unless stimulated with a growth factor such as VEGF, EGF, or bFGF. Tubule development is believed to closely mimic *in vivo* angiogenesis and is enhanced by known angiogenic stimulators. Measuring anti-angiogenic events requires the presence of a stimulating factor, such as VEGF. Both enhancement and suppression occur in a concentration-dependent manner.





### **Recommended Usage / Quality Control Testing**

The CellPlayer Angiogenesis LiveKit contains a 96-well plate seeded with matched cells and sufficient media required to complete a successful experiment. Our 3 years of experimental development has repeatedly shown that growth factors purchased from different sources can result in highly variable responses. As such, all growth factor supplement and inhibitor kits available for purchase from Essen BioScience, including VEGF, bFGF, EGF, and suramin have been rigorously quality controlled to ensure maximal tube formation and/or inhibition if used as described. When used in conjunction with the IncuCyte-FLR, the resulting effect of growth factors and test agents on tube formation can be measured using the Essen BioScience automated angiogenesis algorithm. The data generated with this algorithm can be used to assess angiogenic potential via tube length, branch point, and tube area metrics.

Extensive testing of the CellPlayer Angiogenesis LiveKit is performed to ensure a significant level of growth factor-mediated tube formation compared to the untreated control. Utilizing historical data generated across multiple experiments at Essen BioScience, we typically observe average tube length levels of  $9.0 \pm 1.4$  mm/mm<sup>2</sup> (Mean  $\pm$  SD) when using VEGF at 4ng/ml. Addition of 100 $\mu$ M suramin will inhibit VEGF-mediated tube formation by > 90%. Careful adherence to the LiveKit protocol will minimize unwanted edge effects, enabling the use of the entire 96-well plate for test agent investigation. Further, a parallel plate containing cells from the same parental vials of NHDF and HUVEC will be tested at Essen BioScience to ensure assay performance and quality. Our strict assay criteria enable high-quality assessment of a test agents' pro- or anti-angiogenic potential in an *in vitro* setting.

### **Related Products**

- Cat.# 4452 CellPlayer Angiogenesis CryoKit
- Cat.# 4453 CellPlayer Cryo-preserved GFP-HUVEC
- Cat.# 4437 CellPlayer VEGF/Suramin Supplement Kit
- Cat.# 4438 CellPlayer bFGF/Suramin Supplement Kit
- Cat.# 4439 CellPlayer EGF/Suramin Supplement Kit
- Cat.# 4409 CellPlayer Angiogenesis Assay Media 100 mL
- Cat # 4410 CellPlayer Angiogenesis Assay Media 500 mL

For additional information including a simplified description of the protocol and an extensive application note, please visit our webpage at <http://essenbioscience.com/productsAppAngiogenesis.html>.

For a detailed protocol including use of the CellPlayer™ Angiogenesis LiveKit, as well as additional information, please contact Essen BioScience at: [sales@essenbio.com](mailto:sales@essenbio.com).

**For research use only. Not for therapeutic or diagnostic use.**

