Corning® Matrigel® Matrix High Concentration

For *in vivo* angiogenesis studies and augmentation of tumor growth

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Corning Matrigel Matrix

Corning Matrigel matrix is a solubilized basement membrane preparation extracted from Engelbreth-Holm-Swarm (EHS) mouse sarcoma, a tumor rich in ECM proteins. Its major component is laminin, followed by collagen IV, heparan sulfate proteoglycans, and entactin.[1] Corning Matrigel matrix also contains TGF-beta, epidermal growth factor, insulin-like growth factor, fibroblast growth factor, tissue plasminogen activator,[2,3] and other growth factors which occur naturally in the EHS tumor. Corning Matrigel matrix is effective for the attachment and differentiation of both normal and transformed anchorage-dependent epithelial and other cell types.

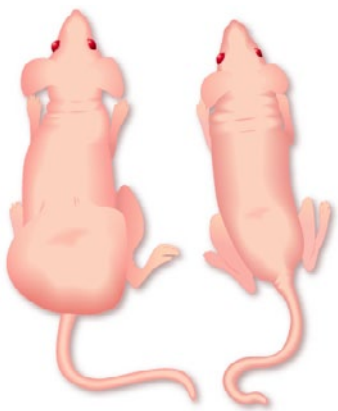
Corning Matrigel Matrix High Concentration (HC)

Corning Matrigel matrix HC is suited for *in vivo* applications where a high protein concentration augments growth of tumors. The high protein concentration also allows the Corning Matrigel matrix plug to maintain its integrity after subcutaneous injection into mice. This keeps the injected tumor cells and/or angiogenic compounds localized for *in situ* analysis and/or future excision. The HC formulation can also be used as an alternative to standard Corning Matrigel matrix by diluting to the appropriate concentration.

Applications

In Vivo Angiogenesis Studies

Corning Matrigel matrix HC can be used to assess *in vivo* angiogenic activity of different compounds by subcutaneous injection into mice (Corning Matrigel Plug Assay). The plug assay is performed by first mixing Corning Matrigel matrix with a cell suspension and/or bioactive factors. Upon implantation, the mixture solidifies to form a plug. The plugs are subsequently removed and analyzed for the formation of blood vessels.[4-6] Corning Matrigel matrix has also been used to induce choroidal neovascularization in the eyes of Sprague-Dawley rats, providing an animal model for testing potential therapies for age-related macular degeneration.[7]



Augmentation of Tumor Growth

Successful propagation of neoplastic primary cells or cell lines in immuno-deficient mice is often very difficult, yet necessary to provide an *in vivo* model for cancer research. A culture system generating malignant cells in quantities sufficient for genetic/biochemical studies and for assessing tumor susceptibility to drugs is desirable. Corning Matrigel matrix HC has been shown to promote successful transplantation of many human tumor cells including prostate, breast, small-cell lung, colon, adrenal carcinomas, melanomas, and lymphoblastic leukemia cells.[5-13] Co-injection of Corning Matrigel matrix HC can also augment the growth of non-human tumors in mice.[11,14]

Interestingly, a number of studies have incorporated the reconstituted Corning Matrigel extracellular matrix in their mammary transplantation assays, with a view to creating an improved microenvironment for the implantation of stem cells. Examples include the transplantation of unsorted mammary cells, in which as few as 100 cells could reconstitute an entire mammary gland,[15] and the transplantation of sorted epithelial subpopulations embedded in Corning Matrigel matrix.[16,17] This matrix has also been shown to enhance tumor growth rates *in vivo*.[8]

Quality Control

Tested for its ability to promote neurite outgrowth of chick dorsal root ganglia cells and the ability to gel quickly and maintain this form with culture medium for a period of 14 days at 37°C. Also tested and found negative for bacteria, fungi, and mycoplasma, as well as for LDEV/LDHV using Mouse Antibody Production (MAP) and PCR analysis. In addition, we also screen mouse colonies and the tumor source for other viruses. Tested for endotoxin by LAL assay.

Corning® Matrigel® Matrix High Concentration Ordering Information

Cat. No.	Description	Quanity (mL)
354248	**Standard**	10
354262	**Phenol-red free**	10
354263	**Growth Factor Reduced**	10

Source: EHS mouse tumor.

Typical protein concentrations for Corning Matrigel matrix are between 8 to 11 mg/mL. The typical range for Corning Matrigel matrix HC is 18 to 22 mg/mL. A lot-specific product specification sheet with the exact protein concentration is included with each shipment of Corning Matrigel matrix.

References

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