Alvetex™ Scaffold 24 Well Insert

The Alvetex 24 Well Insert enables long term 3D culture. Cells can receive media nutrients from above and below the membrane. Comprised of an Alvetex well insert containing Alvetex Scaffold (the insert is designed to hang in a well of a 12 well plate or a 24 well plate).

- **Alvetex is a highly porous polystyrene scaffold designed for 3D cell culture**
  Cells grown in Alvetex possess a natural tissue-like structure that enables them to function in a more physiologically relevant manner. Alvetex 3D cell culture enables cells maintain their *in vivo* morphology, behavior and responsiveness within an *in vitro* model system.
- **Alvetex is a unique cellular environment**
  Manufactured to the highest standards of consistency each disc is engineered to a thickness of just 200 µm with pore sizes of 36-40 µm (Alvetex Scaffold). No cell is ever further than 100 µm from the nutrient source enabling easily exchange of nutrients, gases and waste products by passive diffusion across short distances.
- **Maintain natural cell shape and morphology**
  In conventional 2D cell culture, cells come into contact with the flat surface of the culture vessel (e.g. Petri dish, flask or multi-well plate). In this unnatural environment cells become flattened against the substrate. In this abnormally thin structure there has been significant re-modelling of the internal cellular components. The entire cytoskeleton is remodeled and organelles such as the nucleus are flattened.
- **Alvetex has been designed for simple and routine use**
  It uses conventional cell culture plasticware. Therefore any cell biologist can get into Alvetex 3D cell culture.
    - No specialist equipment is required
    - No changes to media and optimized cell feeding protocols
    - Compatible with the majority of down stream analytical techniques.

Say goodbye to risks of foreign unknown materials such as proteins or cytokines of animal origin — unlike conventional materials used in cell culture Alvetex is made from polystyrene and is completely inert.

Available in varying formats and sizes.

Specifications

Product Name: Alvetex Scaffold 24 Well Insert

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Catalog Numbers:

- AMS.AVP012-12
- AMS.AVP012-48
- AMS.AVP012-96

Pack Contents:

Well inserts containing Alvetex Scaffold, designed for hanging in multi-well plates:

- AMS.AVP012-12 — 12 × 24 well inserts
- AMS.AVP012-48 — 48 × 24 well inserts
- AMS.AVP012-96 — 96 × 24 well inserts

Well inserts are sterile blister packed in units of 12 within a 12 well plate.

Storage and Stability: Store at room temperature, there is no expiry or shelf life for Alvetex Scaffold. The plate or inserts are sterile and ready for use as long as the packaging seal remains intact.

Quality Control: Sterilized by gamma irradiation and remain sterile until the blister packs are opened.

Notice To Purchaser: This product is for research use only, not for therapeutic or diagnostic purposes. It is not allowed to sell this product to a third party or use it for commercial purposes without our permission.

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Choosing the right Alvetex format based on assay type

The table below can guide your choice of the most suitable Alvetex format for your assay.

Types of assay	Alvetex Scaffold						Alvetex Strata	
	6 well inserts	12 well inserts	24 well inserts	12 well plates	24 well plates	96 well plates	6 well inserts	12 well inserts
Viability/Proliferation/ Metabolic Activity Assays	+++	+++	+++	+++	+++	+++	+++	+++
Toxicity Assays	+++	+++	+++	+++	+++	+++	+++	+++
Gene Expression assays (qPCR/microarray)	+++	+++	+++	+++	+++	+++	+++	+++
Protein Expression assays (e.g. western blot)	+++	+++	+++	+++	+++	+++	+++	+++
Air-liquid Interface assays	+++	+++	+++	n/a	n/a	n/a	+++	+++
Cell Signalling assays	+++	+++	+++	+++	+++	+++	+++	+++
Permeability assays	+++	+++	+++	n/a	n/a	n/a	+++	+++
Transfection assays	+++	+++	+++	+	+	+	+++	+++
Co-culture assays	+++	+++	+++	++	++	++	+++[C]	+++[C]
Invasion assays	+++	+++	+++	+	+	+	++[C]	++[C]
Migration assays	+++	+++	+++	+	+	+	++[C]	++[C]
Histology	+++	+++	+++	++	++	++	+++	+++
Immunostaining (IHC/IF)	+++	+++	+++	++	++	++	+++	+++
Confocal microscopy	+++	+++	+++	++	++	++	++	++
Live cell imaging[A]	+++	+++	+++	++	++	++	++	++
Ex vivo tissue maintenance	+++	+++	+++	++	++	++	+++	+++
Live cell retrieval[B]	++	++	++	++	++	++	++	++

Suggested guidelines for the use of Alvetex formats for cell applications and assays:

+++	= most suitable
++	= suitable
+	= least suitable
n/a	= not applicable

Ranking is based on Alvetex disc format suitability, the likely cell yields and therefore signal generation, and whether exogenously added chemicals and/or cells can be contained to only one side of the membrane.

A. The growth of cells cannot be followed by traditional light microscopy as in 2D, but as with ex vivo tissues, 3D structures have to be evaluated using histology or confocal microscopy. Alternatively cell proliferation can be monitored using a viability assay such as the MTT.

B. The exact number of cells retrieved from Alvetex varies with the invasiveness of the cell line cultured, e.g. epithelial vs. fibroblastic. Although the three-dimensional structure of Alvetex precludes all 100% of the cells from being routinely retrieved, calls can be retrieved in adequate numbers for quantitative downstream processes, e.g. flow cytometry.

C. When designing co-culture, invasion or migration set-ups for Alvetex Strata, please keep in mind that some cell lines (e.g. epithelial) have a tendency to multilayer on top of the substrate rather then invade into it.

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