MIMETIX
CELLS IN 3D

· True 3D cell culture · Easy to use · Reproducible performance

Mimetix® multiwell plates

Image 1: Mimetix scaffold in a 12-well plate (removable)

Image 2: Mimetix scaffold in a 6-well plate (hanging inserts)

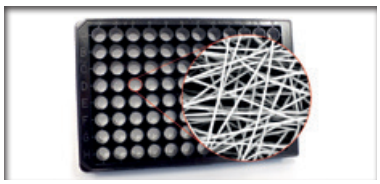

Image 3: Mimetix scaffold in a 96-well plate (fixed)

Image 4: Mimetix scaffold in a 384-well plate (fixed)

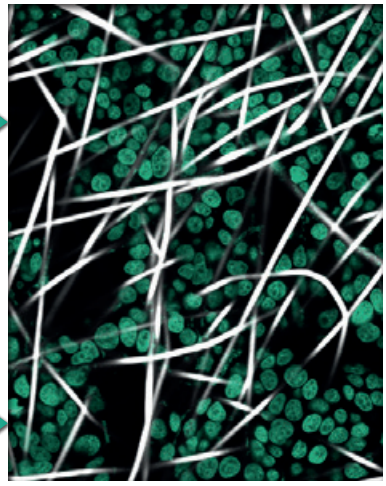

Image 5: Cells growing in the Mimetix scaffold

Mimetix scaffolds mimic the extracellular matrix by providing an ideal architectural environment to support the growth of cells in 3D. They are created by electrospinning the medical-grade polymer poly(L-lactide) (PLLA) into microfibres, which are highly consistent with regard to fibre diameter and pore size, resulting in excellent reproducibility of cell-based assays. The scaffold depth of 50 µm is thick enough to provide the benefits of 3D cell morphology and behaviour, yet thin enough for microscopic imaging.

Benefits of Mimetix multiwell plates in 3D assays

- True 3D environment
- High consistency for reproducible cell-based assays
- Ready-to-use, sterile, standard-size plates are compatible with industry-standard automated handling and imaging equipment
- Minimal protocol adaption to switch from 2D to 3D
- Material does not degrade or alter over the course of an experiment
- Thin scaffold provides benefits of 3D cell morphology and behaviour, yet allows microscopic imaging

Our Company: The Electrospinning Company was established to develop products utilising the world-class electrospinning platform technology at the Rutherford Appleton Laboratory in Oxfordshire. We develop and manufacture scaffolds from a range of synthetic, biocompatible polymers for use in tissue engineering, regenerative medicine and drug discovery within a Class VII cleanroom and ISO 13485 certification.

Why use 3D models in drug discovery?

Cells grown in a 3D micro-environment look and behave more like cells in human tissues than those cultured in 2D. They are in contact with other cells and produce extracellular matrix, which influences tissue-specific gene expression, cell growth and the uptake and metabolism of drugs. 3D cell-based *in vitro* assays can provide more realistic data on the efficacy of drug candidates against tumour cells or their toxicity, potentially reducing the risk of failure in expensive clinical trials.

Mimetix aligned scaffold

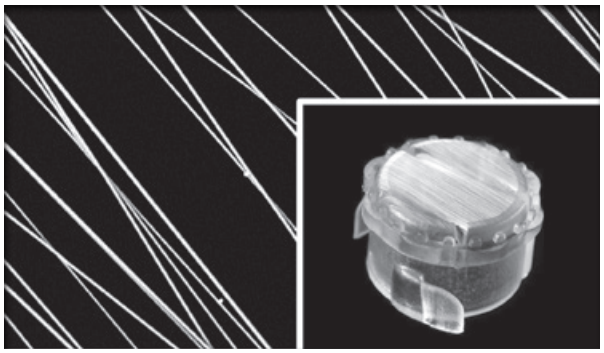

Image 6: Mimetix aligned scaffold mounted on a 12-well cell crown insert

The Mimetix aligned fibre scaffold is an easy-to-use tool for the culture of cells which are influenced by topographical features. The aligned fibres provide a physical structure for the culture of cell from tissues such as the central nervous system, skeletal muscle and heart, where cellular orientation has been shown to play a significant role in the respective tissue functions, and aims to induce these functions *in vitro*.

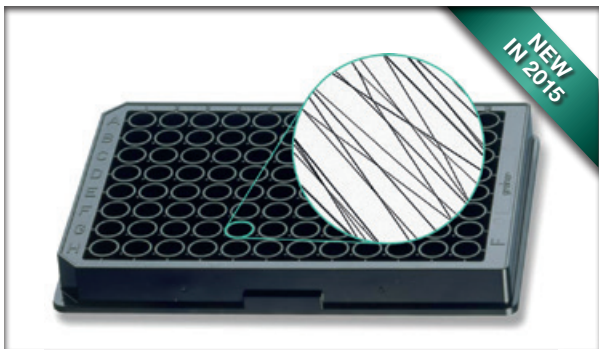

Image 7: Mimetix aligned in a 96-well plate

Various parameters, such as the fibre diameter, fibre density, mechanical properties and surface features can be optimised for different cell types.

We currently offer 12-well and 6-well plates with removable aligned fibre inserts and a 96-well plate for higher throughput applications. The 96-well plate variant utilises the same frame and optical clarity base as used in other Mimetix products.

What makes us unique?

- All materials are fabricated in a Class VII cleanroom using state-of-the-art electrospinning equipment.
- Our proprietary know-how in manufacturing methods and polymer chemistry enables precise control over important fibre parameters, such as diameter and surface texture, resulting in excellent batch-to-batch reproducibility.
- Every scaffold batch is checked under a scanning electron microscope and supplied with a Certificate of Analysis as part of our Quality Control process (ISO 13485).
- The highly consistent, reproducible scaffolds are suitable for cell culture, cell-based assays and laboratory research, but are also ultimately transferable for use in clinical applications.

ELECTROSPINNING COMPANY

Contact us: For more information on our products, to order samples and to discuss collaborative projects.

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