



# Information sheet

beadMATRIX are ready-to-use, animal component-free, pre-coated microcarriers for the in vitro culture of high-quality mesenchymal stromal cells (MSCs). beadMATRIX is ideally suited for use in shaker flasks, shaker bags, stirred tank or vertical wheel bioreactors. In combination with controlled and closed bioreactor systems, beadMATRIX enables regulated manufacturing processes for industrial scale production of MSCs. The product family for MSCs includes the isoMATRIX, myMATRIX MSC, and the beadMATRIX, and facilitates MSC manufacturing with consistency across scales.

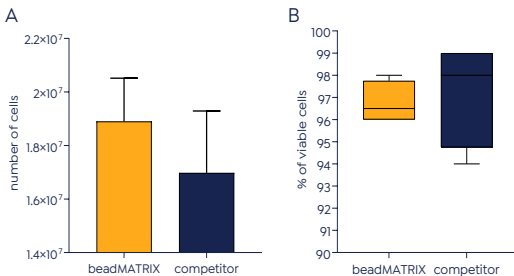


Figure 1. Bone marrow-derived mesenchymal stromal cells (MSCs) grown in a serum-free 3D culture setup using beadMATRIX or a competitor product. Cell expansion with beadMATRIX resulted in an increased yield (A) of highly viable MSCs (B).

## KEY FEATURES

- Up to 25% accelerated cell proliferation compared to leading brand competitor
- Serum-free & Xeno-free 3D culture
- Compliant with pharma grade requirements

## beadMATRIX expansion maintains MSC characteristics

- MSC-specific CD-marker expression
- Trilineage differentiation potential
- Immunomodulatory potential
- Angiogenic activity

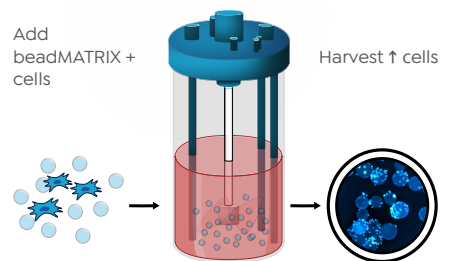


Figure 2. beadMATRIX is designed for the use in closed and controlled culture devices, e.g., stirred-tank bioreactor. Simply combine media, MSCs and microcarriers, and run your processes.



# Large-scale production of MSC with consistency across scales

## isoMATRIX | myMATRIX MSC | beadMATRIX

### Product specification

Bead Material	Cross-linked polystyrene
Coating	Biofunctional polymer
Surface Charge	Slight cationic charge
Relative density range	1.022 – 1.03 g/cm <sup>3</sup>
Bead size	179 μm ± 10% (see Figure 3)
Specific surface area	330 cm <sup>2</sup> /g
No. of beads per gram	3.3 × 10 <sup>5</sup>
Appearance	Dry, white to off-white powder
Safety	Free of Endotoxins/Animal components/BSE/TSE
Application	Sterile product, ready-to-use
Certification	ISO9001, pharma grade
Quality standards	Manufactured in clean room ISO14644-1 class 5
Available formats	10g and 100g / upon request

denovoMATRIX is operating under ISO9001. beadMATRIX microcarriers are manufactured and processed in clean room environment according to ISO14644-1 class 5. Compliance with pharma grade quality standards is ensured by animal component- and serum-free raw materials.

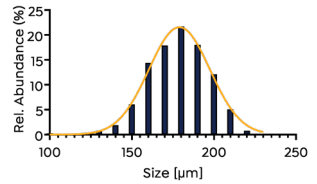


Figure 3. Frequency distribution of beadMATRIX. Average bead size: 179 μm

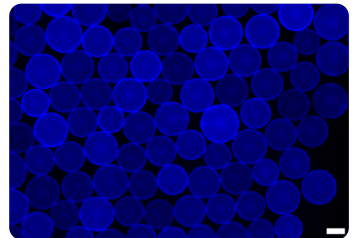


Figure 4. beadMATRIX. Scale bar: 100 μm



Figure 5. beadMATRIX product.

### Our services



We offer our expertise in biomaterial development, cell expansion and cell analysis to enhance your R&D projects. Customer-specific modifications and requirements are available upon request. Contact us for more information about our service and licensing offer.



We qualified beadMATRIX in bioreactor experiments. [Read more >](#)

#### About denovoMATRIX

denovoMATRIX develops and manufactures biomatrix coatings that enable the culture of a wide variety of primary cells, stem cells and established cell lines. In vivo, cells are surrounded by extracellular matrix (ECM), which modulates adhesion, differentiation, migration, phenotype, tissue organization and structure. Our coatings recapitulate key functions of the natural ECM, making cell culture easy, robust, and biologically relevant.

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For more information about beadMATRIX and our other products, visit [www.denovomatrix.com](http://www.denovomatrix.com)

denovoMATRIX receives support from

