

**DBX**<sup>®</sup>

A Trusted Standard in Bone Grafting

Represented by  
**KOLOSIS**<sup>™</sup>  
INNOVATION THAT ELEVATES

**mtf**biologics<sup>®</sup>

## DBX<sup>®</sup>: The Name You Trust in DBM— And for Good Reason

For decades, DBX has been a trusted name in DBM, earning its reputation through years of proven performance in both preclinical animal models and in clinical studies.<sup>1-4</sup> This legacy of success is built on MTF Biologics' premium DBM formulation, which combines high-quality donor tissue with a scientifically optimized sodium hyaluronate carrier.

**>95%**

**bone content  
by volume**

DBX Putty Formulation

## Inductivity You Can Rely On: Every Lot Confirmed

The osteoinductive potential of DBX is consistently validated, thanks to rigorous lot-by-lot testing conducted by MTF Biologics to confirm osteoinductive potential. Given the inherent variability in donor tissue, this testing ensures every graft meets the highest clinical standards, providing confidence in the bone growth potential of DBX.

MTF's proprietary methods used to preserve the native matrix structure and bone forming proteins have been validated through in vivo models for osteoinductivity, such as ectopic implantation in athymic mice, and validated in vitro assays. This robust approach ensures the preservation and availability of key growth factors, including:



### BMP-2

Differentiation of MSCs into osteoprogenitor cells, chondrocytes and osteoblasts



### BMP-7

Differentiation of osteoprogenitor cells into osteoblasts



### IGF-1

Promotes proliferation and differentiation of osteoprogenitor cells



### TGF- $\beta$

Pleiotropic growth factor responsible for stimulation of undifferentiated MSCs



### VEGF

Promotes migration and proliferation of osteoblasts. Promotes angiogenesis

## Clinical Confidence Backed by Evidence

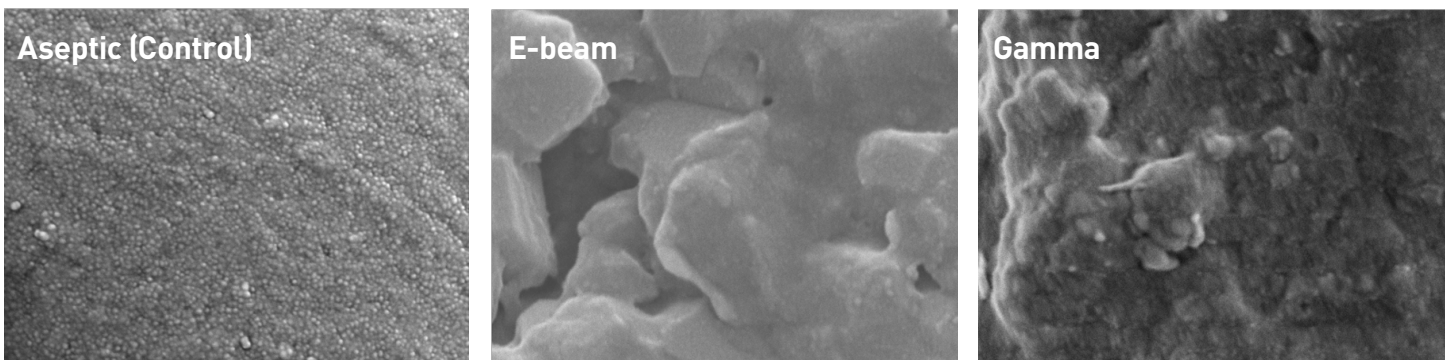
DBX stands as a leader with over two decades of clinical experience and extensive published clinical data, and scientific data<sup>1-4, 6-8</sup> reflecting a steadfast commitment to advancing the science of bone grafting. With studies demonstrating its effectiveness in spinal fusion and trauma applications, DBX has earned its place as a benchmark for published outcomes.

When you choose DBX, you're choosing a graft backed by decades of research and trusted by surgeons worldwide.



## Aseptic Processing: The Key to Allograft Tissue Performance

MTF ensures that DBX is processed with a focus on preserving its biological integrity, avoiding the negative impacts of terminal sterilization with gamma or e-beam irradiation. Research demonstrates that terminal sterilization, while common in the industry, can significantly impair the structural and functional properties of DBMs.<sup>9</sup>



**Figure 1.** Scanning electron microscopy images at 60,000X magnification comparing three donor matched samples: non-irradiated demineralized bone matrix (DBM) (control), e-beam irradiated DBM, and gamma-irradiated DBM.

**Matrix Stability:** Terminal sterilization distorts the surface morphology of the collagen matrix, as observed under SEM imaging. These structural changes can compromise the matrix's ability to support cell attachment and retain osteoinductive factors critical for bone healing.<sup>9</sup>

# Kolosis and MTF Biologics: A Proven Partnership in Bone Grafting

Partnering with MTF Biologics and Kolosis is an ideal choice for surgeons, health systems, and the sales professionals who support them. Together, we deliver best-in-class technologies rooted in MTF's 35+ years of excellence in bone graft science and pioneering advancements. Complementing this legacy, Kolosis brings a pure-play focus on biologics, driving innovation and delivering execution that supports the requirements of modern surgical care.



## Product List

### DBX Putty

Size	Order #
1cc	423401
2.5cc	423402
5cc	423405
10cc	423410

### DBX Mix

Size	Order #
2.5cc	423602
5cc	423605
10cc	423610
20cc	423620

### MTF Biologics Customer Service

1-800-433-6576

Orders: [mtfop@mtf.org](mailto:mtfop@mtf.org)

All other inquiries: [mtfcs@mtf.org](mailto:mtfcs@mtf.org)

### MTF Biologics Reimbursement Support

1-866-369-9290

The Pinnacle Health Group, Inc.

[mtf@thepinnaclehealthgroup.com](mailto:mtf@thepinnaclehealthgroup.com)

### Represented by Kolosis BIO, LLC

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Learn More



<sup>1</sup>Becker VV, Nardone E, McDonnell D, et al. 109. Comparison of Autograft to DBX Demineralized Bone Matrix Putty Combined with Autograft used in Posterolateral Lumbar Fusion. The Spine Journal. July-August 2005; 5(4):S56-S57. cs)

<sup>2</sup>Price CT, Connolly JF, Carantzas AC, Ilyas I. Comparison of Bone Grafts for Posterior Spinal Fusion in Adolescent Idiopathic Scoliosis. Spine. 2003; 8:793-798.

<sup>3</sup>Oakes D, Lee C, Lieberman J. An Evaluation of the Osteoinductive Potential of Human Demineralized Bone Matrices in an Athymic Rat Femoral Defect Model. Clin Orthop Relat Res. 2003; 413:281-90.

<sup>4</sup>Wildemann B, Kadow-Romacker A, Haas NP, Schmidmaier G. Quantification of Various Growth Factors in Different Demineralized Bone Matrix Preparations. 2006. J Biomed Mater Res A. Nov 21.

<sup>5</sup>Data on File (MTF Biologics).

<sup>6</sup>Heard JC et al. The Impact of Demineralized Bone Matrix Characteristics on Pseudarthrosis and Surgical Outcomes After Posterolateral Lumbar Decompression and Fusion. J of Craniovertebral Junction and Spine. 2023; 14(2):194-200.

<sup>7</sup>Vaidya R et al. Interbody Fusion with Allograft and rhBMP-2 Leads to Consistent Fusion but Early Subsidence. The Journal of Bone and Joint Surgery. 2007; 89-B(3):342-45.

<sup>8</sup>Choi Y, Oldenburg FP, Sage L, Johnstone B, Yoo JU. A Bridging Demineralized Bone Implant Facilitates Posterolateral Lumbar Fusion in New Zealand White Rabbits. Spine. 2007; 1:36-41.

<sup>9</sup>Shankar, G., Tabbaa, S., Davidson, E., El Naga, A. (2024, December 11-14) Both Terminal E-beam and Gamma Irradiation Negatively Impact Biological Properties of Demineralized Bone Matrices (Virtual Poster).

Cervical Spine Research Society 52<sup>nd</sup> Annual Meeting, Chicago IL.