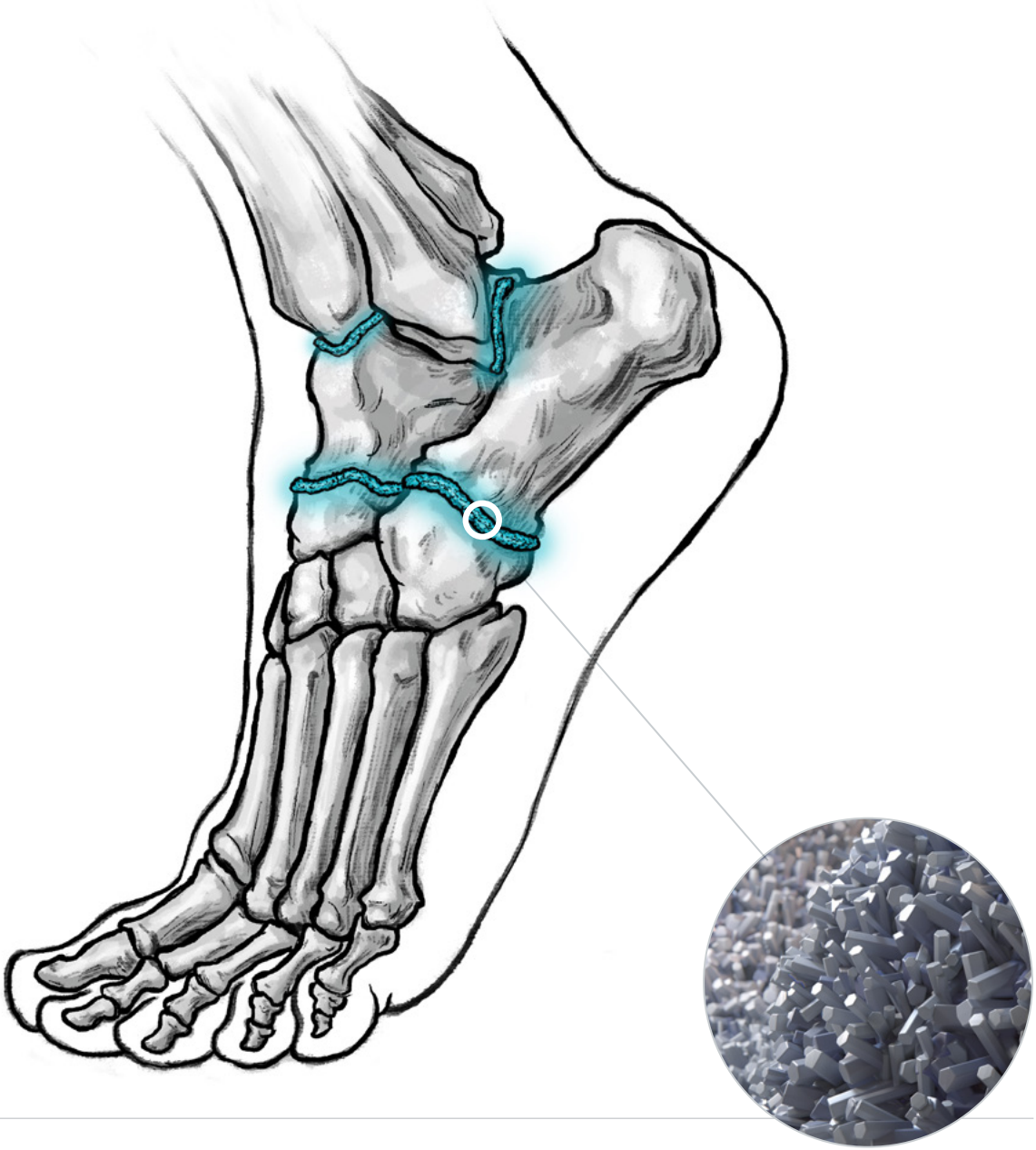
Looking to grow bone in the **foot & ankle?**

Meet **MagnetOs**™



Powered by **NeedleGrip**™ surface technology to harness the immune system and stimulate bone growth

MAGNETOS™
for predictable fusions

Kuros Biosciences

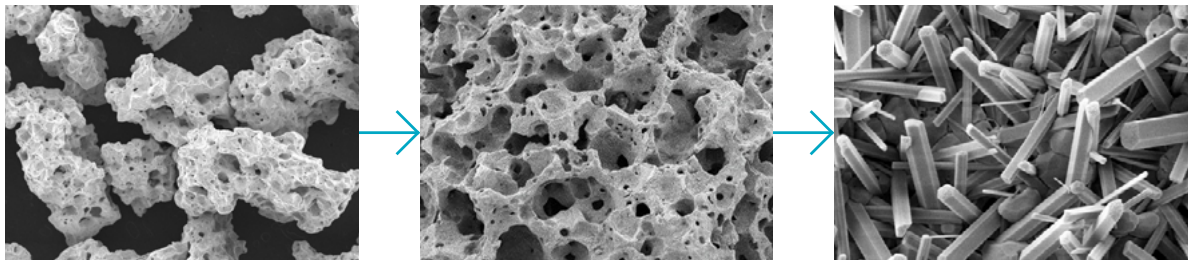
Foot & Ankle

MagnetOs: a bone graft like no other

MagnetOs is ideally suited to foot and ankle surgery. **MagnetOs is osteoinductive, it grows bone on its own** thanks to NeedleGrip – a proprietary submicron surface technology that harnesses the immune system to stimulate bone growth, without added cells or growth factors.[†1-5]

MagnetOs also delivers predictable handling and performance for hindfoot, midfoot and forefoot.[4-6] And it's brought to you by Kuros Biosciences.

Explore how NeedleGrip makes a difference – watch the magnification video at 25x, 50x, and 20,000x.



1mm; 25x magnification *500µm; 50x magnification* *2µm; 20,000x magnification*

Show me the 20,000x magnification

Why MagnetOs for the foot and ankle?

MagnetOs is a novel advanced synthetic bone graft, distinguished by its **supporting evidence, surgical handling, and bone growth mechanism**.[†1-16] But why is this beneficial for foot and ankle fusions?

Proven Level I clinical evidence[*7]

Predictable handling and designed to stay put[4-6]

Powered by NeedleGrip submicron surface technology[†1-5]

The problem

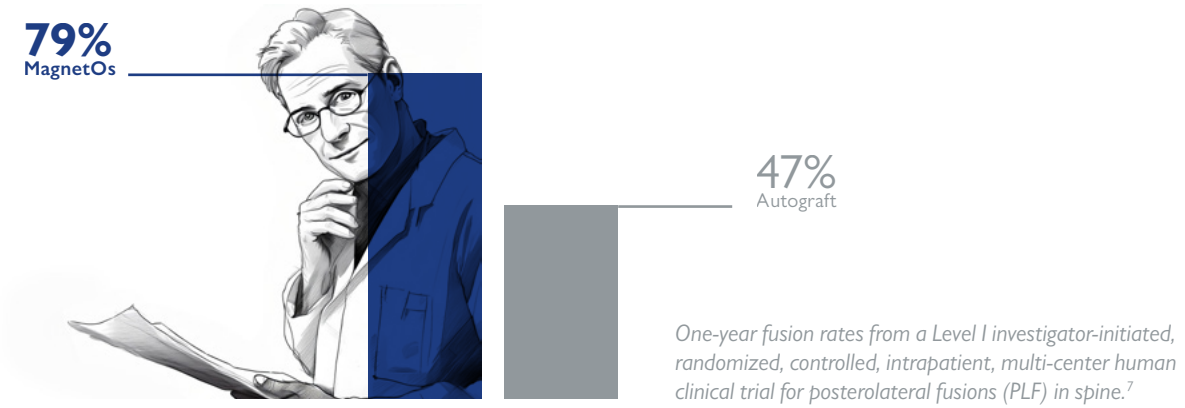
The solution

The outcome

Proven Level I clinical evidence[7]

At Kuros Biosciences we go beyond what's required, as we believe surgeons and patients deserve more. That's why we continue to make significant investments in robust human clinical studies to provide the highest level of evidence and confidence in MagnetOs.

To put that into perspective, MagnetOs is the subject of seven completed or initiated Level I human clinical studies, including one demonstrating nearly double the fusion rate of autograft.[7]



One-year fusion rates from a Level I investigator-initiated, randomized, controlled, intrapatient, multi-center human clinical trial for posterolateral fusions (PLF) in spine.[7]

Where there's smoke, there's fusion

Among active smokers, MagnetOs achieved more than twice the fusion rate of autograft in a Level I human clinical study.*‡[7,8]

High fusion rates in a challenging patient population[17]

1 in 5 active smokers
(19% of patients)

One-year fusion results in active smokers*[7,8]

	MagnetOs (levels fused)	**Autograft** (levels fused)
Smokers	**74%** (20/27)	**30%** (8/27)

Based on 27 fused segments from 19 active smokers with one-year CT follow-up

Predictable handling from hindfoot to forefoot[4-6]

MagnetOs is ideally suited to the unique challenges of foot and ankle surgeons. Available in two formulations, it is ready-to-use and provides exceptional versatility in handling.[4-6]

Designed to stay put

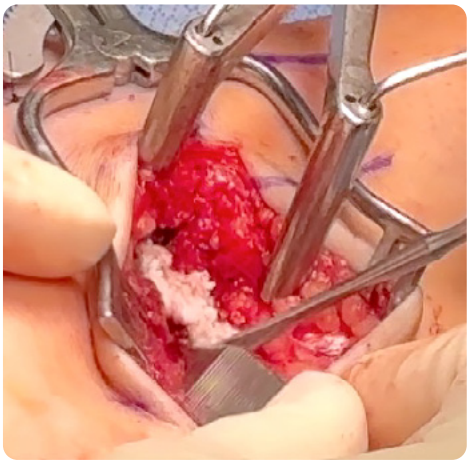
The robust formulation is designed to withstand some of the common challenges faced by foot and ankle surgeons – including joint compression, irrigation, and leaking.[5]

Ready when you are

MagnetOs is ready-to-use with no mixing, thawing, or specialized storage requirements (max 45 °C) – saving valuable time in the operating room (OR).[5]

Versatile handling

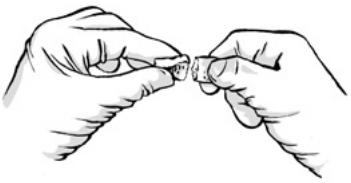
Use MagnetOs your way in the hindfoot. Twist it, tear it, fold it, and mold it to fill even the most difficult-to-access joint spaces.[5]



Example image of MagnetOs placement in a subtalar joint

Open outer and inner packaging using standard aseptic technique

Warm MagnetOs Putty in the palm of your hand for two minutes. Do not place it in warm water or saline



If needed, tear into smaller pieces before warming in your hands

Shape and mold MagnetOs Putty before implantation

Show me a real subtalar fusion featuring MagnetOs

Powered by NeedleGrip submicron surface technology[†1-4]

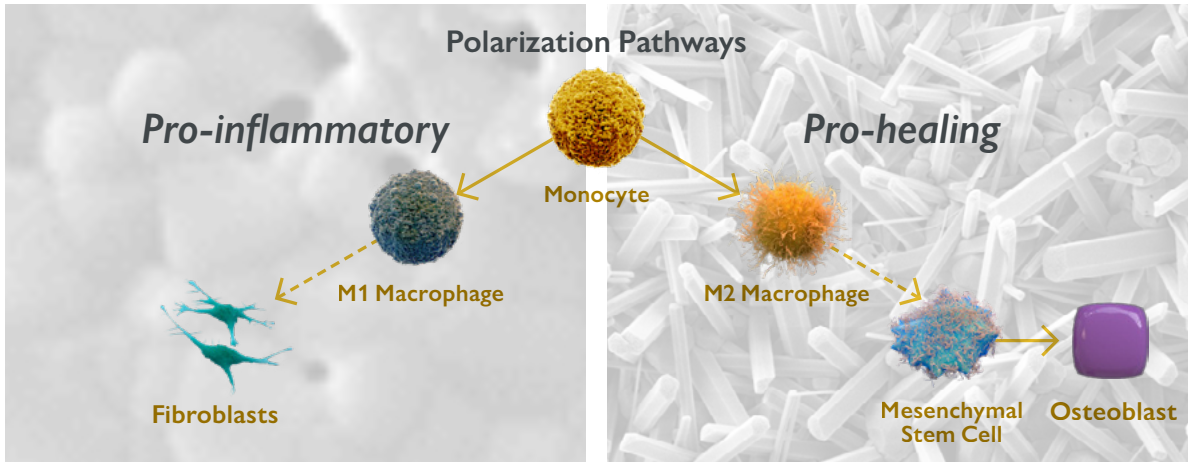
MagnetOs is osteoinductive and grows bone on its own thanks to NeedleGrip – a proprietary submicron surface technology that harnesses the immune system to stimulate bone growth without the need for added cells or growth factors.[†§1-5]

As the immune system's 'first responders', macrophages react to their environment by polarizing into different cell types.[18] This in turn unlocks previously untapped potential to stimulate stem cells - and form new bone throughout the graft.[†¶1-3]

Harnessing the immune system via macrophage polarization

Conventional smooth bone graft surface

MagnetOs NeedleGrip surface submicron technology



Vitoss® bone graft

Demonstrates cells communicating
Polarization/phenotypic switch

M1 pro-inflammatory pathway: Monocytes differentiate into macrophages which then polarize to M1 phenotype, which are pro-inflammatory and promote fibroblast proliferation, often leading to scar tissue.[18]

M2 pro-healing pathway: Monocytes differentiate into macrophages which then polarize to M2 phenotype, which are pro-healing and upregulate stem cells to create bone.[18,19] MagnetOs NeedleGrip surface technology has been shown in pre-clinical studies to enhance the pathway to M2 macrophages.[†¶1-3]

Four reasons to believe in the safety of MagnetOs:

1. **Free of human tissue:** Avoids concerns during surgical consent[4,5]
2. **Carries no intrinsic risk of human tissue-related disease transmission** Thanks to the cell-free formulation[4,5,20]
3. **No growth factors:** Eliminates the potential for adverse events associated with BMPs[21,22]
4. **Proven composition:** Calcium phosphate based, trusted for decades[20]

Show me how MagnetOs works

Kuros Biosciences

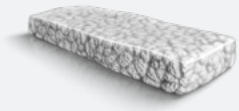
Why wait to grow your fusion rate?

Contact us today to learn more about the MagnetOs bone graft and how we can help take your fusion rates to the next level.

Learn more about getting predictable fusions here:

Double the handling options for your triple arthrodesis

MagnetOs is most commonly used in hindfoot fusions: specifically, triple arthrodesis, subtalar fusions, and standalone talonavicular fusions. However, it can also be an effective choice for charcot, midfoot fusions and forefoot fusions. We offer two formulations indicated for use in foot and ankle surgery:[4,5]

Indication	**MagnetOs** Putty	**MagnetOs** Granules
Extremities fusions and trauma[4,5]	✓	✓
Standalone[4,5]	✓ *or in combination with autograft*[5]	✓ *or in combination with autograft or bone marrow*[4]
Product characteristics	• Ready-to-use[5] • Easy-to-mold[5]	• Strong, proven foundation[1-7]
		

* Even though the primary aim of the current study was to demonstrate noninferiority, the findings indicate superiority of the BCP<µm (MagnetOs) in terms of CT determined PLF at one year. The McNamar test, with a noninferiority margin of 15%, confirmed the noninferiority of MagnetOs with an absolute difference in paired proportions of 39.6% (95% CI = 26.8-51.2, p<0.001).
† Results from in vitro or in vivo laboratory testing may not be predictive of clinical experience in humans. For important safety and intended use information please visit kurosbio.com/eifu.
‡ 19 of initial 100 subjects were active smokers. Radiographic fusion data of the smoker subgroup were not statistically analyzed as a subgroup and were not included in the peer-reviewed publication of the study.
§ MagnetOs has been proven to generate more predictable fusions than two commercially available alternatives in an ovine model of posterolateral fusion.
¶ In large animal models.

References: 1. Van Dijk, et al. *eCM.* 2021;41:756-73. **2.** Van Dijk, et al. *J Immunol Regen Med.* 2023;19:100070. **3.** Duan, et al. *eCM.* 2019;37:60-73. **4.** Instructions for Use (IFU) MagnetOs Granules (CE). **5.** Instructions for Use (IFU) MagnetOs Putty (CE). **6.** Data on file. MagnetOs Putty irrigation report evaluation. **7.** Stempels, et al. *Spine.* 2024;49(19):1323-1331. **8.** Van Dijk, LA. 24th SGS Annual Meeting (Swiss Society of Spinal Surgery). Basel, Switzerland. Aug 2024. **9.** P. Nunley. *Cureus.* 2024;16(4): e58218. **10.** C. Elia. *JOJ Case Stud.* 2024;14(4). **11.** Goodmanson R, Butrico, C, Sage K. *JOJ* Case Stud. 2023;14(3):555886. **12.** A. Jones. *JOJ* Case Stud. 2021;12(2). **13.** F. Sandhu. *JOJ* Case Stud. 2021;12(2). **14.** T. Fusco. *JOJ* Case Stud. 2022;13(2). **15.** Van Dijk et al. *JOR Spine.* 2018;e1039. **16.** Van Dijk et al. *J Biomed Mater Res. Part B: Appl Biomater.* 2019; 107(6):2080-2090. **17.** Berman, et al. *Int J Spine Surg.* 2017;11(4):29. **18.** Italiani, et al. *Front Immunol.* 2014;5:514. **19.** Loi, et al. Stem Cell Res Ther. 2016;7:15. **20.** Morris. Eur *Spine J.* 2018;27:1856–1867. **21.** Wang, et al. *Clin Transl Oncol.* 2020;22(8):1263-1271. **22.** Fukuda, et al. *Int J Mol Sci.*2021;23;22(15):7882.

Manufactured by **Kuros Biosciences BV**
Prof Bronkhorstlaan 10, Building 48, 3723 MB Bilthoven, The Netherlands
MagnetOs and NeedleGrip are trademarks of Kuros Biosciences

kurosbio.com
cs.international@kurosbio.com

MAT-0142 Aug '25

Grow bone
with **MagnetOs**™

Kuros Biosciences