

STIMULAN

POWER TO TRANSFORM OUTCOMES



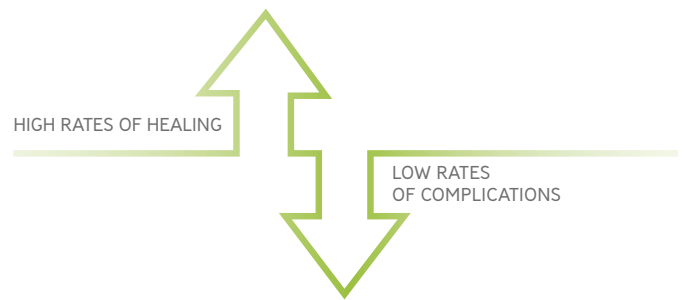
STIMULAN®

Perfect partner for your infection management strategy

In contrast to today's growing economic and performance challenges, **STIMULAN** has been shown to transform outcomes and reduce associated costs of care across a wide range of settings.^{1,2}

STIMULAN is a truly absorbable calcium sulfate, specifically designed to complement your dead space and infection management strategies.³

- ✓ approved for placement directly at the site of infection
- ✓ may be mixed with antibiotics



Calcium sulfate, uniquely recrystallized to transform outcomes in the presence of infection^{1,2}

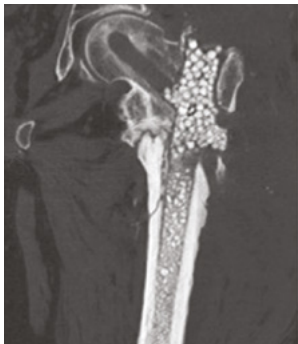
STIMULAN can transform outcomes in infected non-unions, osteomyelitis and periprosthetic joint infection⁴⁻⁶



TRANSFORMS OSTEOMYELITIS IN DIABETIC FOOT^{4†}

Patient presented with: persistent osteomyelitis and interphalangeal joint destruction of left hallux. He was already receiving treatment for Charcot arthropathy to his right foot.

Outcome: 2 weeks' post-operatively the toe reduced in size. At the 16 month x-ray the patient was infection free and amputation had been avoided. **STIMULAN** was seen to have completely absorbed at 4 months.



TRANSFORM INFECTED TRAUMA^{5†}

Patient presented with: infected femoral nail and non-union of left femur with persistent discharging wounds proximally and distally.

Outcome: at 7 months' follow-up there was complete healing of the non-union and at 1 year patient remains infection free, walking with no pain.



TRANSFORM INFECTED REVISION ARTHROPLASTY^{6†}

Patient presented with: recurrent periprosthetic infection after complex hinged total knee replacement (TKR).

Outcome: 7 months' post-operatively, the infection remained controlled and the bone had consolidated. 2 years' post-operatively, no recurrence of infection had occurred.

† Additional information and case studies are available on request.

STIMULAN®

Recrystallized for improved clinical performance

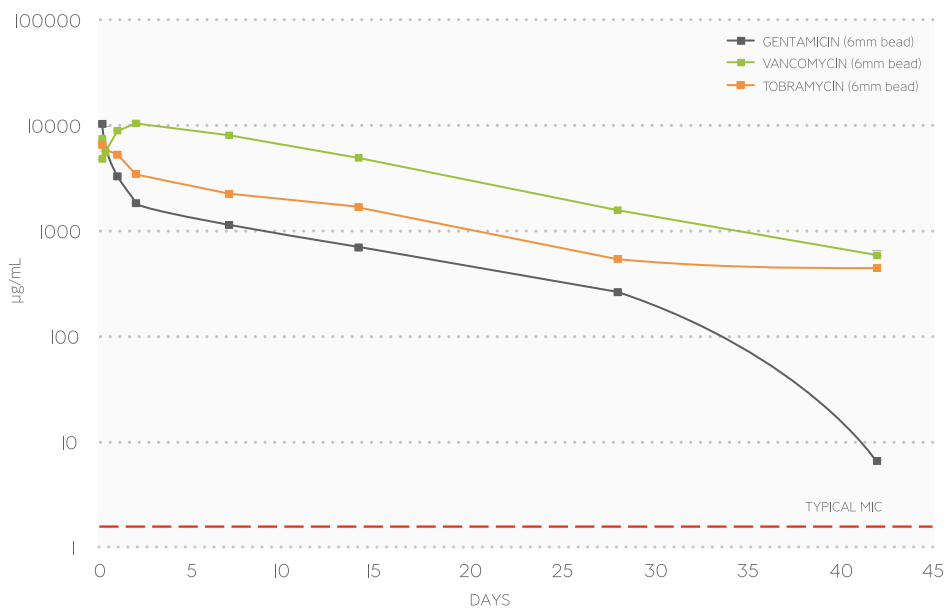
STIMULAN is a pharmaceutical-grade calcium sulfate with a unique crystal structure and properties.^{7,8}

- ✓ controlled purity
- ✓ easily mixed with liquid, powder and heat-sensitive antibiotics

Only STIMULAN undergoes a patented recrystallization process that starts with pharmaceutical-grade reagents and results in its consistent and reliable performance.^{3,7-13}

- ✓ predictable elution profile
- ✓ truly absorbable at an optimal rate
- ✓ low levels of drainage

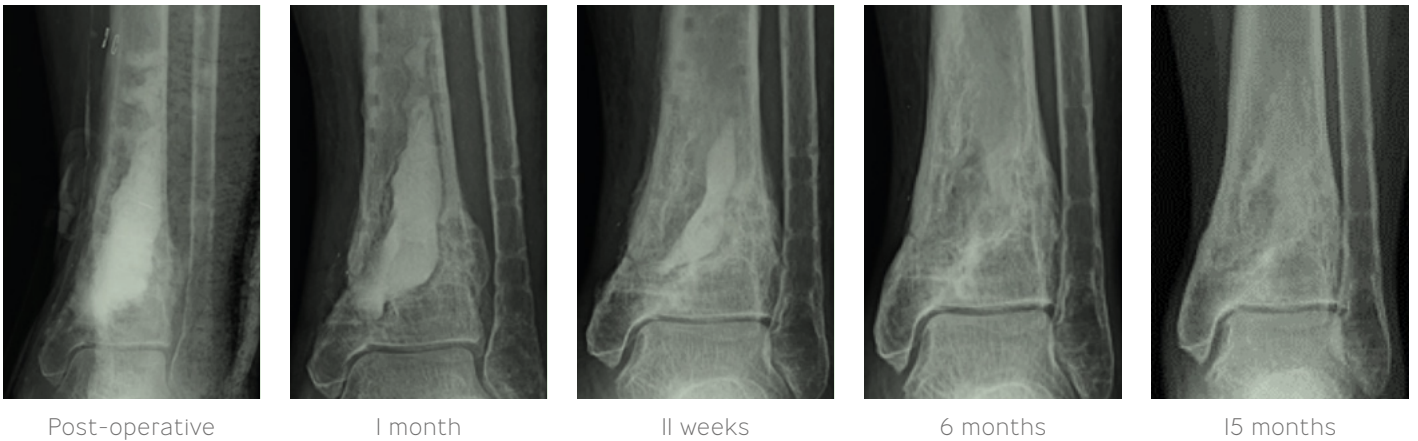
Antibiotic elution from STIMULAN Rapid Cure¹²



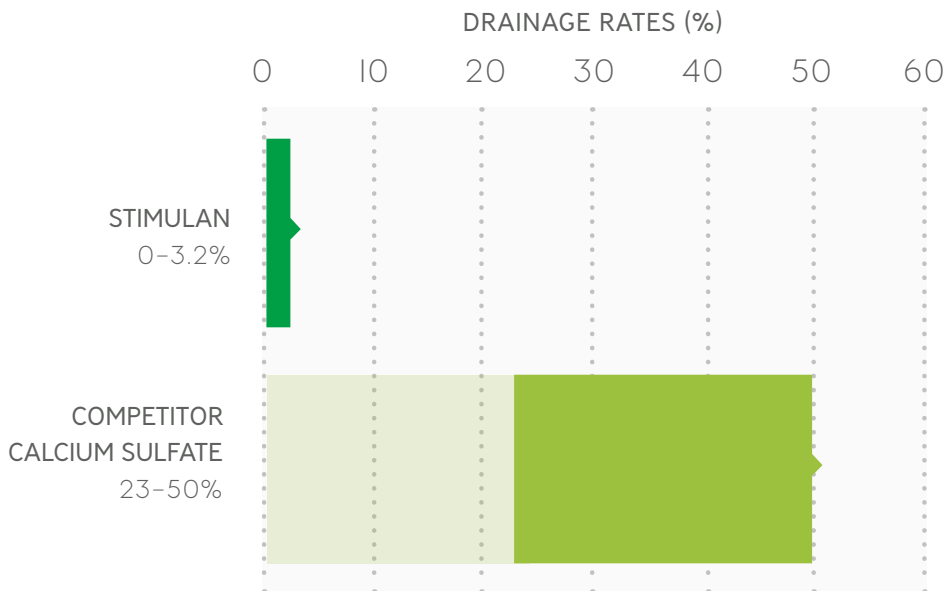


Truly absorbable and totally synthetic calcium sulfate—absorbs at an optimal rate^{3,7-11}

Leaves no nidus for infection.



Low levels of drainage^{8,9,13-17}



STIMULAN®

Case-by-case flexibility

Can be used in three bead sizes, as a paste or for injection, **STIMULAN** optimizes packing in bone voids and defects. Its hydrophilic properties and options of rapid or standard setting times make it quick and easy if mixed with one or more antibiotics—helping you to adapt to each case as is merited.



Flexible formats to optimize dead space management

PRODUCT	PASTE VOLUME	BEAD VOLUME	SETTING TIMES	ORDER CODES
STIMULAN Kit Standard setting, fully injectable paste with individual bead kit	5cc	10cc	8 minutes approx.	600-005
	10cc	20cc		600-010
STIMULAN Rapid Cure Rapid setting paste with individual bead kit	5cc	12cc	4 minutes approx.	620-005
	10cc	25cc		620-010
	20cc	50cc		620-020

STIMULAN®

POWER TO TRANSFORM OUTCOMES

- ✓ Perfect partner for your infection management strategy³
- ✓ Recrystallized to give a unique crystal structure and clinical performance^{1,2}
- ✓ Provides case-by-case flexibility



All Biocomposites' products are engineered, manufactured and shipped from our facilities in Keele, UK.

At Biocomposites, we are proud to be driving improved outcomes across a wide range of clinical applications for patients and surgeons. Our team of specialists is singularly focused on the development of innovative calcium compounds for surgical use. With over 25 years' experience and an unrivaled dedication to quality, the products we research, engineer and manufacture are at the forefront of calcium technology.

References: **1.** Lei D, Zhanzhong M, Huaikuo Y, Lei X, Gongbo Y. Treatment of distal radius bone defects with injectable calcium sulfate cement. In: *Zorzi A, ed. Bone Grafting, InTech* (2012). **2.** Somasundaram K, Huber CP, Babu V, Zadeh H. Proximal humeral fractures: The role of calcium sulfate augmentation and extended deltoid splitting approach in internal fixation using locking plates. *Injury* 2013;44:481-7. **3.** Biocomposites Ltd, STIMULAN Instructions for Use. **4.** Data on File, Mr Jogia. **5.** Data on File, Mr Sharma. **6.** Data on File, Mr Norrish. **7.** Cooper JJ. Method of producing surgical grade calcium sulphate. 1999, Patent GB 2367552; EP I204599; 6780391 **8.** McPherson EJ. Dissolvable antibiotic beads in treatment of periprosthetic joint infection - the use of synthetic pure calcium sulfate (Stimulan®) impregnated with vancomycin and tobramycin. Presented at: Oxford Bone Infection Conference (OBIC) 2012. **9.** McPherson EJ, Dipane MV, Sherif SM. Dissolvable antibiotic beads in treatment of periprosthetic joint infection and revision arthroplasty. The use of synthetic pure calcium sulfate (Stimulan®) impregnated with vancomycin and tobramycin. *Reconstructive Review* 2013;3:32-43. **10.** Cierny G, DiPasquale D. Comparing OsteoSet and Stimulan as antibiotic-loaded, calcium sulfate beads in the management of musculoskeletal infection. Presented at: Musculoskeletal Infection Society of North America 2009. **11.** Kallala R, Nizam I, Haddad F. Outcomes following use of antibiotic-eluting, absorbable, calcium sulfate beads in revision hip and knee surgery for periprosthetic infection. Presented at: International Society for Technology in Arthroplasty 2013. **12.** Cooper et al. Antibiotic stability in a synthetic calcium sulphate carrier for local delivery. Poster presented at European Bone and Joint Infection Society Annual Meeting, Prague, Czech Republic, 2013. **13.** Gauland C. The use of antibiotic impregnated, implanted synthetic calcium sulfate tablets in the treatment of soft tissue, vancomycin resistant enterococcus infections. Presented at: Wound Healing Society 2011. **14.** Borrelli J, Jr, Prickett WD, Ricci WM. Treatment of nonunions and osseous defects with bone graft and calcium sulfate. *Clin Orthop Relat Res* 2003;245-54. **15.** Heigeson MD, Potter BK, Tucker CJ, Frisch HM, Shawen SB. Antibiotic-impregnated calcium sulfate use in combat-related open fractures. *Orthopedics* 2009;32:323. **16.** McKee MD, Wild LM, Schemitsch EH, Waddell JP. The use of an antibiotic-impregnated, osteoconductive, bioabsorbable bone substitute in the treatment of infected long bone defects: Early results of a prospective trial. *J Orthop Trauma* 2002;16:622-7. **17.** Noor S, Bridgeman P, David M, Humm G, Bose D. The use Osteoset-T in the treatment of chronic osteomyelitis of the tibia following exogenous trauma: A review of 22 patients at a regional trauma centre. *Bone Joint J* 2013;95-B:4.

For indications, contraindications, warnings and precautions see Instructions for Use. The treating physician is responsible for deciding the type and quantity of antibiotic used. Concurrent use of locally administered antibiotics may affect setting time. The mixing of antibiotics with the STIMULAN Kit/ STIMULAN Rapid Cure device is considered off-label usage of the medicinal product. To do so is at the professional risk of the surgeon / healthcare professional. This brochure may include the use of STIMULAN or techniques that go beyond the current clearance/ approval granted by the relevant regulatory authority. Please contact your local representative for further information.

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Patents granted: GB2367552, EP I204599 BI, US 6780391, EP 2594231 BI, US 8883063, CN ZL201210466117.X, GB2496710 /

Patents pending: GB1502655.2, EP 16154210.5, US 15/040075, CN 201610089710.5, US 15/288328.

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