



World's first synthetic bone graft
with negatively charged surface chemistry



geneX[®]

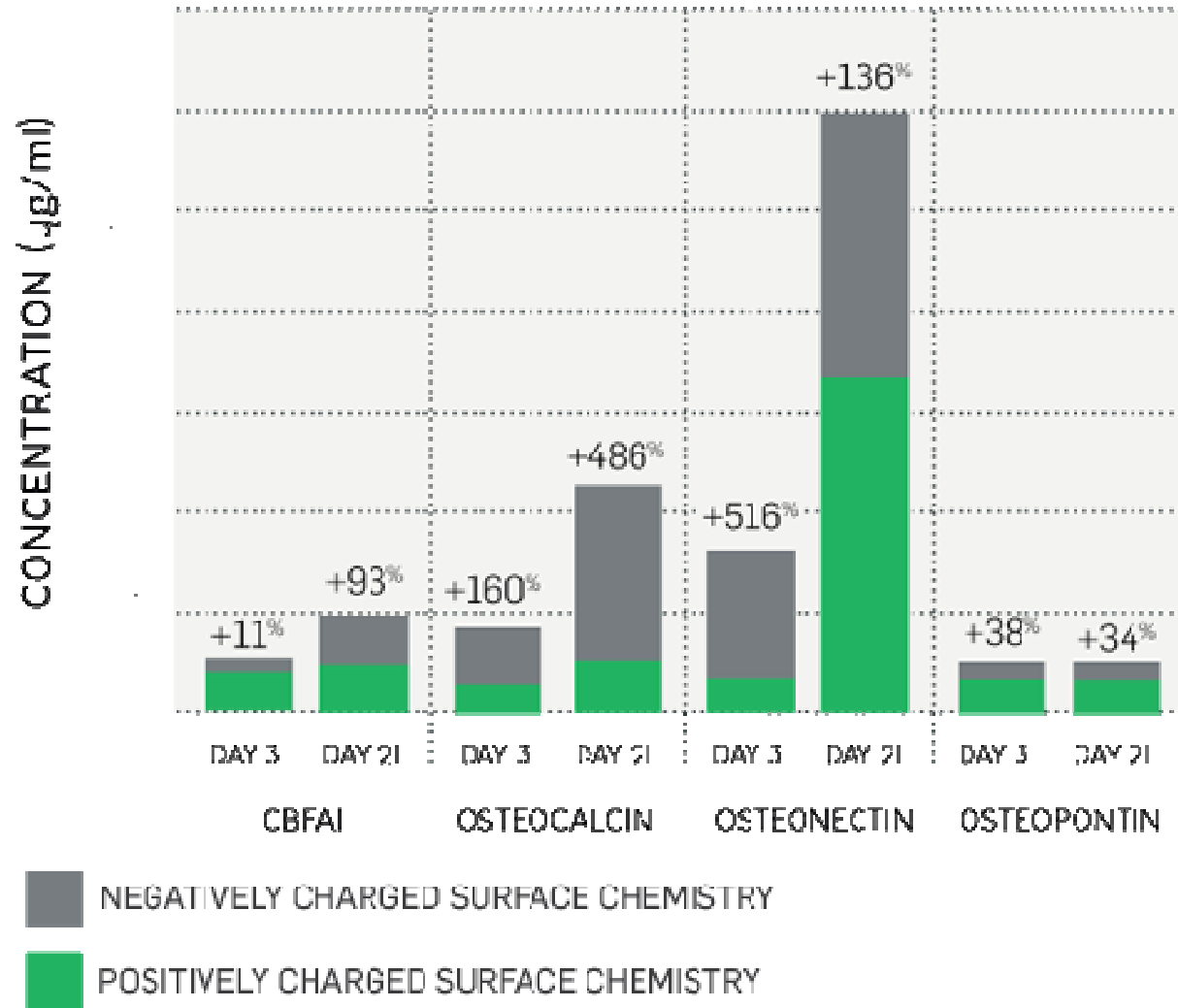
An absorbable, osteoconductive, synthetic bone graft material with a negatively charged surface to accelerate bone growth in trauma, spine and non-unions

Synthetic bone graft geneX is an absorbable, osteoconductive scaffold for accelerating bone growth. Its negatively charged surface chemistry attracts osteogenic proteins and directs cell response to enhance performance:

- Osteogenic response enhanced up to 5x normal levels¹
- Compressive strength 3x stronger than cancellous bone

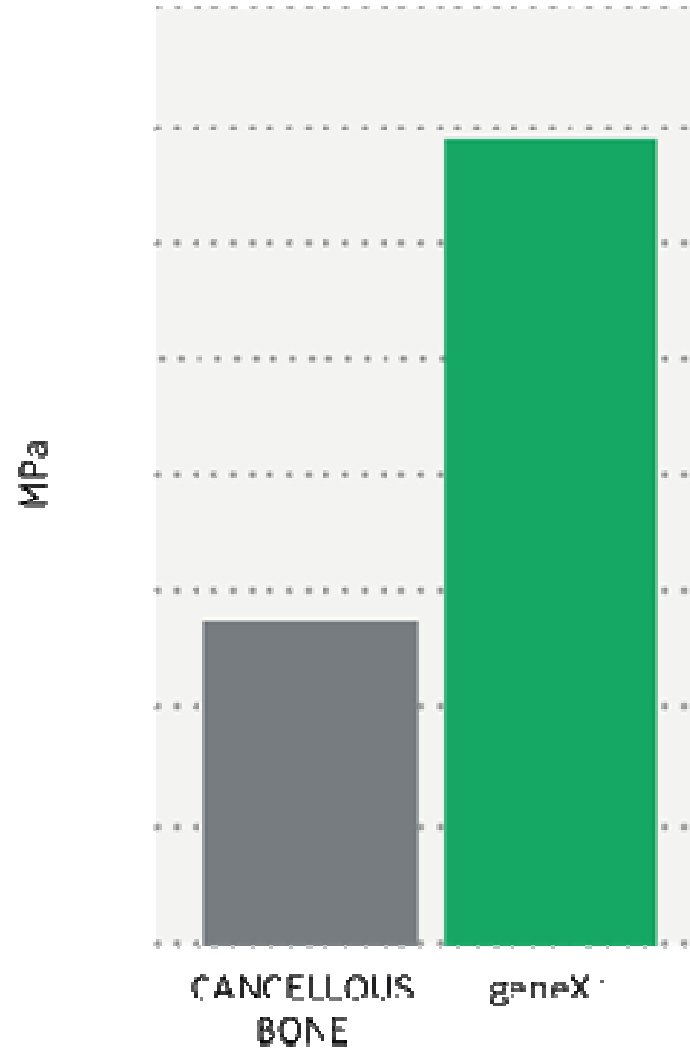
geneX[®]

Osteogenic response up to 5x normal levels



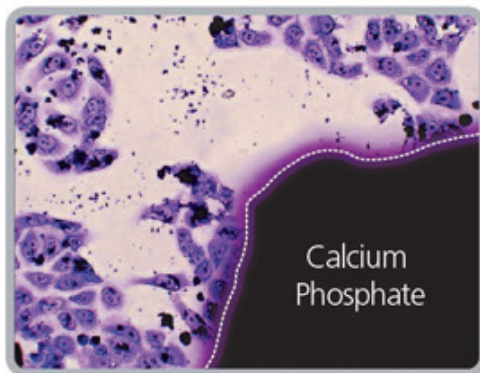
3x stronger than cancellous bone

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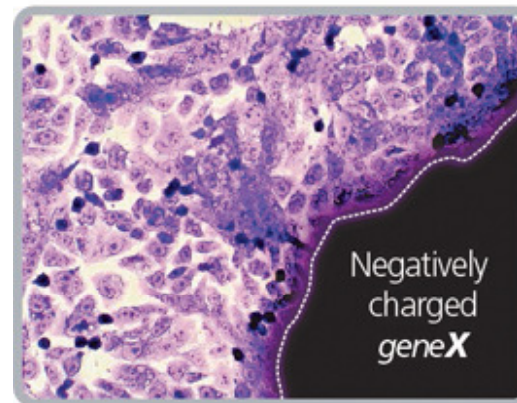


geneX®

Engineered for bone healing Through a proprietary process called ZPC® (Zeta Potential Control), geneX is engineered to deliver both bioactive and bi-phasic properties



- Surface of untreated calcium phosphate Lack of a negatively charged surface leads to limited cell



- Negatively charged surface chemistry of geneX
- Enhanced cell attachment and proliferation
- Negatively charged surface chemistry of geneX attracts osteogenic proteins to its surface
- Proteins trigger osteogenic cell differentiation and attachment to the surface of geneX, initiating bone

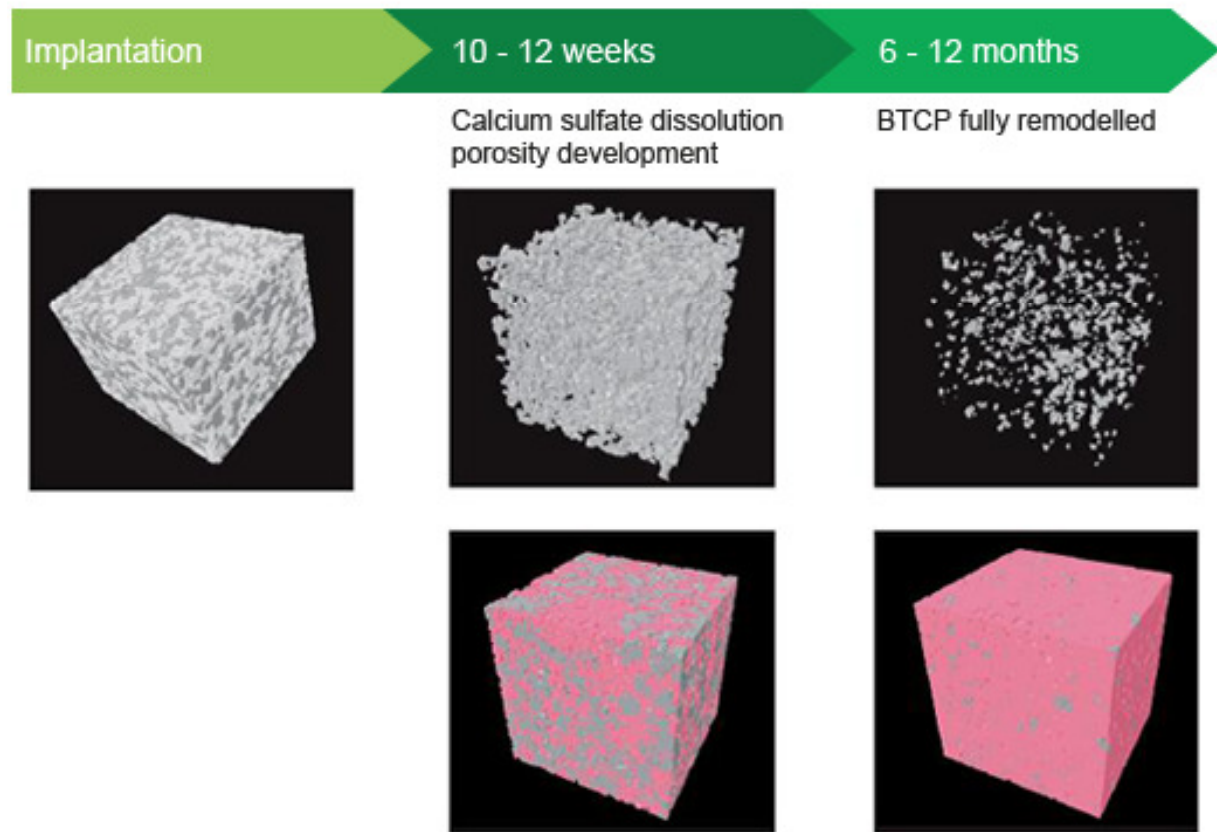
geneX[®]

Bi-phasic properties

Optimised absorption profile, with the calcium sulfate acting as a barrier to prevent initial soft tissue in-growth – and the β tri-calcium phosphate acting as a scaffold, through which bone grows/remodels

References: 1. Cooper JJ, Hunt JA, Pu F. The Significance of Zeta Potential in Osteogenesis, in Society for Biomaterials 2006 Annual Meeting. 2006: Pittsburgh, Pennsylvania, USA.

2. Biocomposites Ltd, Data on File. - See more at: <http://www.biocomposites.com/our-products/genex/#sthash.49YwQ7IN.dpuf>



Red = new bone formation, White = calcium sulfate, Grey = β tri-calcium phosphate

Easy and versatile
Available as a paste and a
putty in a range of
volumes, geneX is
versatile and easy to use.
The paste sets within 15
minutes, at body
temperature, and can be
digitally implanted or
injected in difficult-to-
reach sites, or minimally
invasive procedures.
geneX putty requires no
mixing and can be used
straight from a pre-loaded
syringe



PRODUCT	PASTE VOLUME	SETTING TIME
geneX mouldable setting paste for digital implantation and injection	5 cc	15 minutes
	10 cc	
geneX ds setting paste with extension tip for percutaneous delivery	2.5 cc	15 minutes
	5 cc	
geneX putty non-setting putty used straight from the syringe	2.5 cc	NON-SETTING
	5 cc	
	10 cc	



Use of geneX in non-union of right tibia with revision of intramedullary nail

Patient presented with: some acute pain around the fracture site some 19 months after the initial operation.

Outcome: The patient demonstrated good movement of toes and right ankle. Mobilisation to partial and full weight bearing was recommended as soon as comfortable to do so. At 3-month follow-up, the wound was clean and the bone appeared to be healing satisfactorily. The patient had mobilised fully and was extremely pleased with the outcome.

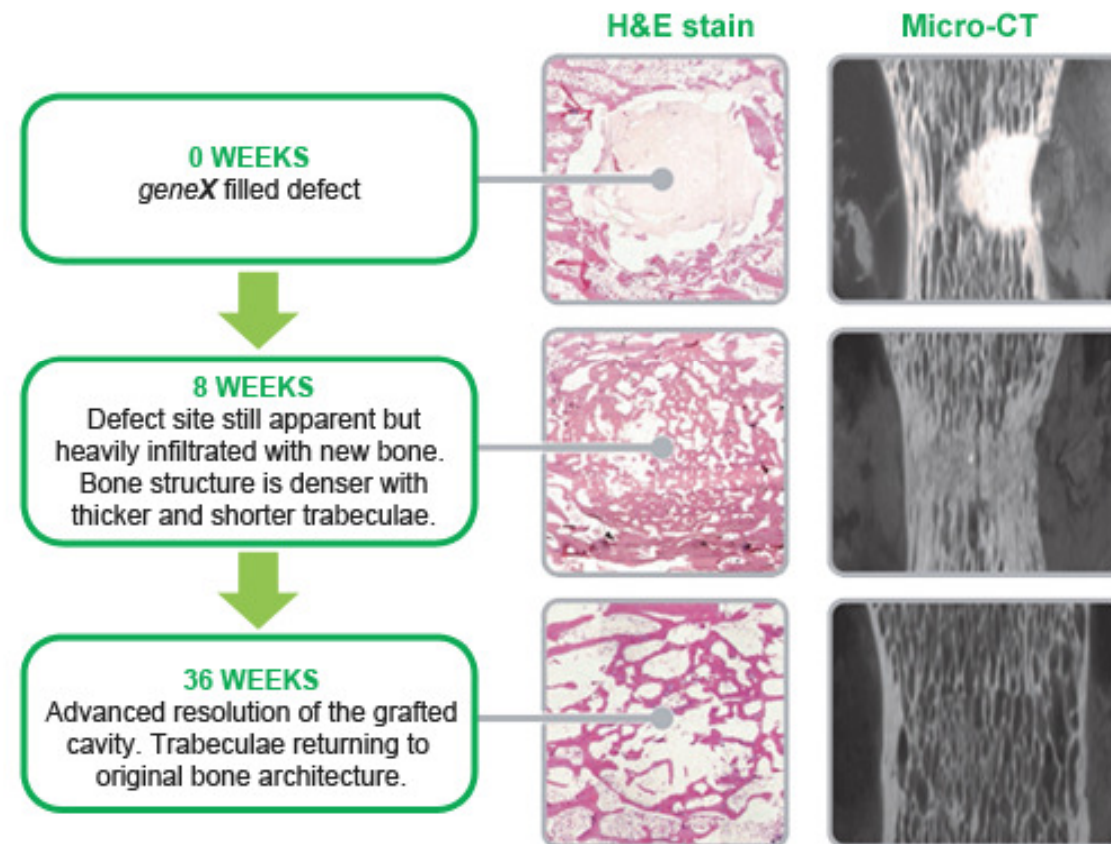


Use of geneX in the treatment of a comminuted tibial plateau fracture: Schatzker type IV

Patient presented with: severe comminution of the distal tibial condyle, with osseous avulsion of the cruciate ligament, following a motorcycle accident. The fracture was classified as Schatzker type IV.

Outcome: Results indicated satisfactory healing, with gradual absorption of the geneX graft material, coupled with new bone formation at the site.

In vivo data – geneX-filled critical size defects¹



Reference: 1. Yang, HL. *et al.* Bone healing response to a synthetic calcium sulfate/beta-tricalcium phosphate graft material in a sheep vertebral body defect model. *J Biomed Mater Res B Appl Biomater* 2012;100B(7):1911–1921.