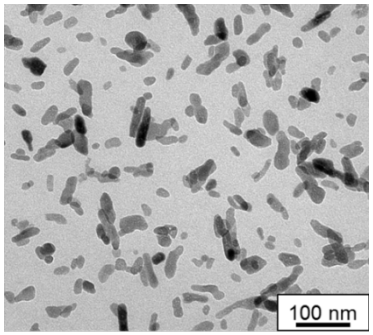
IXOBONE® PASTE

VET

Biomimetic Hydroxyapatite

The mineral component of bone is partially-crystalline hydroxyapatite crystals of approximately 20-50 nm in size.[1] The optimal composition and structure of IXOBONE PASTE has been developed using amorphous particles of an average of 30-50 nm to closely match natural bone. IXOBONE PASTE has a specific surface area of approximately 100 m^2/g much greater than other synthetic bone grafts.



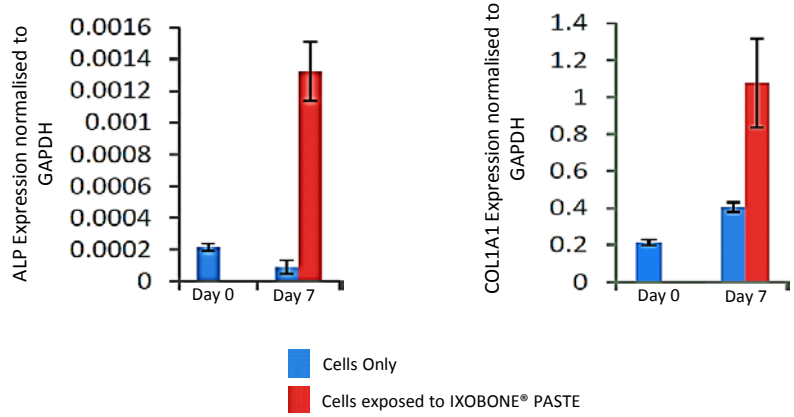
Nano-hydroxyapatite particles in IXOBONE® PASTE

Osteoconductive

Proteins attach to the surface of the hydroxyapatite creating an optimum micro-environment facilitating cell attachment and ingrowth into IXOBONE PASTE. Overtime the material undergoes dissolution and cell mediated resorption whilst being replaced by new bone.

Osteostimulative*

IXOBONE PASTE*'s* biomimetic nature stimulates bone repair and regeneration. Its high surface area attracts and adsorbs the biomolecules essential for the repair of bone, whilst the dissolution of ions acts on cellular pathways to stimulate the proliferation and differentiation of cells into osteoblasts.[2]



IXOBONE PASTE has been shown to have a positive effect on cells, by increasing the expression of markers indicative of osteoblast differentiation.[2] Alkaline phosphatase (ALP) is an enzyme that is involved in bone mineralisation and Collagen 1A1 is an early marker of osteogenic differentiation and also a reporter of osteoblast activity.

*** NOT OSTEOINDUCTIVE**

[1] Olszta M.J., et al. (2007) Bone structure and formation: A new perspective, Materials Science and Engineering: R: Reports, 58:3–5: p77–116.
[2] Herranz Diez C., (2016) *In vitro* assessment of Nano-hydroxyapatite paste, data on file at Exabone GmbH, publication in progress.

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