Beta Tricalcium Phosphate regenerates bone equal to autografts. The following research publications confirm this statement.

Beta tricalcium phosphate vs. autogenous bone grafts in maxillary sinus showed that after 6 months there was no difference in quantity and rate of ossification. There we no difference in the amount of bone formation after 6 months.

When used for socket grafting 91% of alveolar ridge width was maintained 6 months after grafting with beta tricalcium phosphate granules.
Clinical evaluation alveolar ridge preservation with a beta-tricalcium phosphate socket graft. Horowitz RA, Mazor Z, Miller RJ, Krauser J, Prasad HS, Rohrer MD

Beta Tricalcium phosphate vs. autogenous bone graft in the maxillary sinus over a period of 4-5 years showed no difference in vertical bone height.
Long-term changes in graft height after maxillary sinus floor elevation with different grafting materials: radiographic evaluation with a minimum follow-up of 4.5 years.
Zijderveld SA, Schulten EA, Aartman IH, ten Bruggenkate CM

Beta tricalcium phosphate vs. autogenous bone graft in the maxillary sinus showed equal implant success after one year (100%).
Maxillary sinus floor augmentation using a beta-tricalcium phosphate alone compared to autogenous bone grafts.
Zijderveld SA, Zerbo IR, van den Bergh JP, Schulten EA, ten Bruggenkate CM

Beta tricalcium phosphate vs. autogenous bone grafts in large bone defects showed that microporous calcium phosphate ceramics was equally efficient in bone repair. Microporosity of the calcium phosphate correlated with the ability to stimulate osteogenic differentiation of stem cells in vitro and bone induction in vivo.
Osteoinductive ceramics as a synthetic alternative to autologous bone grafting. Yuan H, Fernandes H, Habibovic P, de Boer J, Barradas AM, de Ruiter A, Walsh WR, van Blitterswijk CA, de Bruijn JD

Beta tricalcium phosphate sinus augmentation vs. normal bone in the posterior maxilla showed an equal success rate when implants were placed at the time of augmentation. After three years the success rate was 99.17% vs. 99.26% respectively.
Early implant survival in posterior maxilla with or without beta-tricalcium phosphate sinus floor graft.
Uckan S, Deniz K, Dayangac E, Araz K, Ozdemir BH