Algipore has successfully been used as a bone grafting material since 1988. After more than 25 years of clinical experience, it has been demonstrated to enhance new bone formation in pre-clinical in vitro\(^1\)–\(^3\), in vivo\(^4\)–\(^6\) as well as in clinical\(^7\)–\(^10\) situations. Furthermore, Algipore has shown good resorbable properties over time when used in animals\(^4\) as well as in humans\(^11\)–\(^12\) since resorbed particles are being replaced by newly formed bone.

Algipore is a natural occurring hydroxyapatite derived from calcifying maritime algae with moderate crystallinity\(^13\). It is available as granules with particle sizes of 0.3 – 2.0 mm and pores in the range of 5 – 10 µm\(^13\). Due to its columnar structure\(^14\) with interconnective pores, Algipore has a large surface area available for protein binding and in addition a high affinity for amino acid adsorption\(^15\)–\(^16\) which makes it highly suitable as a protein carrier for e.g. bone growth promoting factors\(^17\)–\(^21\) or stem cells\(^22\). Immunological in vitro testing of human peripheral blood cells cultivated in the presence of Algipore showed no signs of an activated immune response, thus supporting Algipore as a highly biocompatible substance\(^23\).

The pre-clinical in vivo performance of Algipore has been documented in various experimental models with different focuses\(^4\),\(^5\),\(^17\),\(^19\),\(^24\)–\(^28\). In a study performed in a rabbit tibia bone defect model, the high osseoconductive and resorbable properties of Algipore were confirmed\(^4\).

Several clinical investigations report on the usage of Algipore as a bone substitute material suitable for many different indications\(^7\),\(^8\),\(^10\)–\(^12\),\(^22\),\(^29\)–\(^47\). One of the most frequently reported indication for Algipore is bone augmentation in the atrophic maxilla\(^7\),\(^8\),\(^10\)–\(^12\),\(^31\)–\(^35\),\(^46\),\(^47\). In a long-term, retrospective study, with a follow-up of up to 14 years, implant survival rate was 95.6% following sinus grafting with Algipore\(^7\). Additionally, Algipore has been successfully used as bone filling material for patients suffering from periimplantitis lesions\(^38\)–\(^40\), for which sustainable results with up to 3 years follow-up was achieved\(^38\). Another clinical situation is alveolar ridge alteration following tooth extraction, where Algipore in combination with another graft material, was shown to favor the preservation of the alveolar ridge and thus preventing narrowing and loss of height of the residual ridge\(^36\).


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