AlgOss™
BIOTECHNOLOGIES

REGENERATING BONE NATURALLY

PHYCOGRAFTS
DERIVED FROM RED ALGAE

AlgOss **HISTORY**

In the early 80's, Professor Dr. Dr. Rolf Ewers and his team in Kiel, Germany started a project for a **natural porous, biological but non-animal alternative** for bone grafting. In this context, he came up with **marine red algae**, which form a unique interconnected microporous lime skeleton to stabilise the plant structure (cell walls) similar to human dentin and bone. This was the nativity of the **algae derived (phycogenic)** inorganic, interconnected-microporous calcium phosphate bone grafts.

At that time, the pure hydroxyapatite granulate was developed from red algae. This first plant derived hydroxyapatite (HA, AlgOss 100) proved to be an osseoconductive, **almost completely resorbable** biomaterial, **safe and effective** in clinical use since 1989, firstly sold by Friedrichsfeld GmbH under the brand name Algipore.

The biphasic bone graft AlgOss 20-80 is the further development of the pure phycogenic HA in order to accelerate the resorption of this **natural material**. It is a composite consisting of 20 % hydroxyapatite and 80 % ß-tricalcium phosphate.

Due to their natural origin, the chemical composition of the biological **AlgOss** products is **very similar** to the mineral part of **human bone** in regards to the calcium phosphate and trace elements content. In addition, they offer a **highly porous** guiding structure/matrix as **scaffold** which is gradually **degraded** and replaced by **newly formed vital bone**.

Amphiroa ephedra

Corallina officinalis

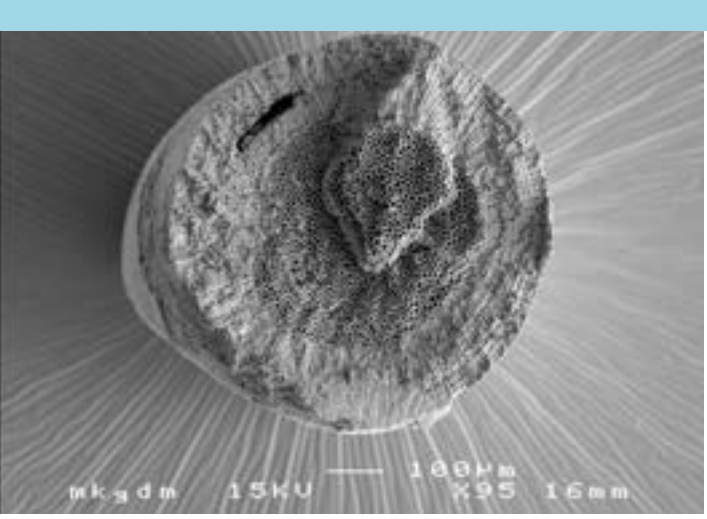
AlgOss **PRODUCT LIST**

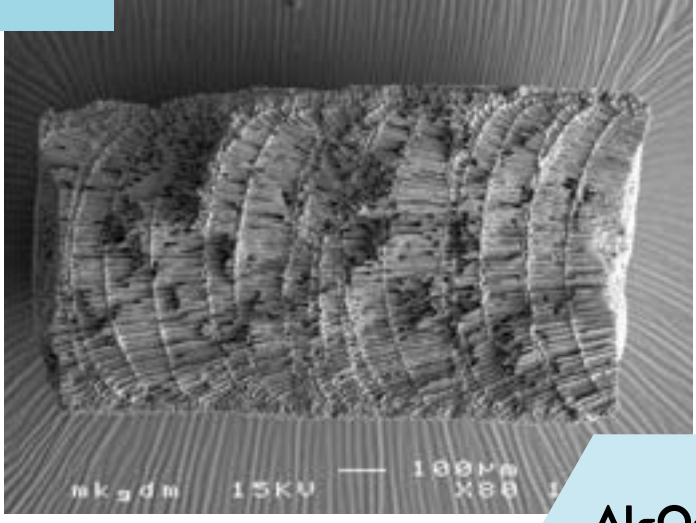
AlgOss 100

A01000110A	0.1 – 1.0 mm, 0.5 ml (for augmentation of small defects)
A01000110B	0.1 – 1.0 mm, 1.0 ml (for augmentation of small defects)
A01000110C	0.1 – 1.0 mm, 2.0 ml (for augmentation of small defects)
A01001020B	1.0 – 2.0 mm, 1.0 ml (for augmentation of lateral defects and sinus floor elevation)
A01001020C	1.0 – 2.0 mm, 2.0 ml (for augmentation of lateral defects and sinus floor elevation)

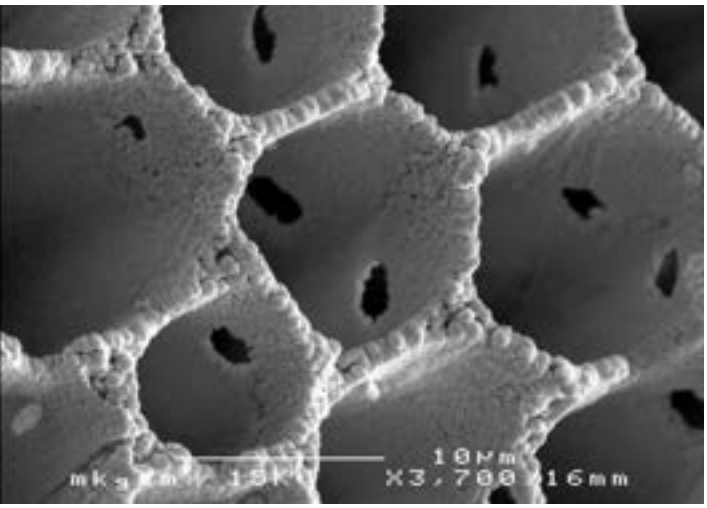
AlgOss 20-80

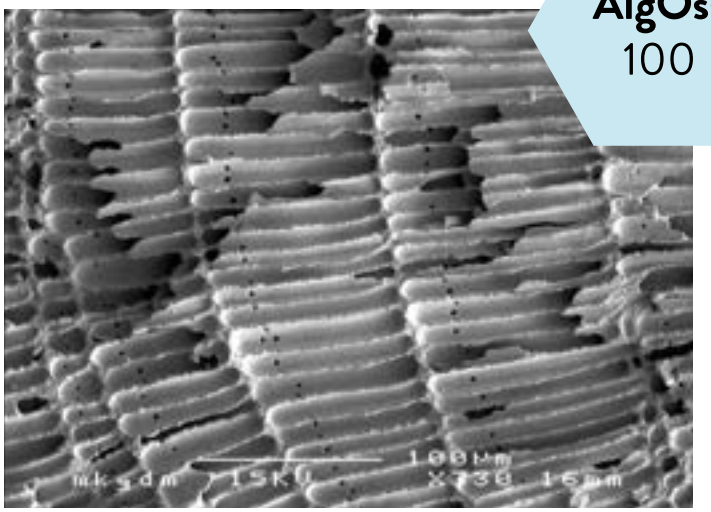
B20800110A	0.1 – 1.0 mm, 0.5 ml (for augmentation of small defects)
B20800110B	0.1 – 1.0 mm, 1.0 ml (for augmentation of small defects)
B20800110C	0.1 – 1.0 mm, 2.0 ml (for augmentation of small defects)
B20801020B	1.0 – 2.0 mm, 1.0 ml (for augmentation of lateral defects and sinus floor elevation)
B20801020C	1.0 – 2.0 mm, 2.0 ml (for augmentation of lateral defects and sinus floor elevation)

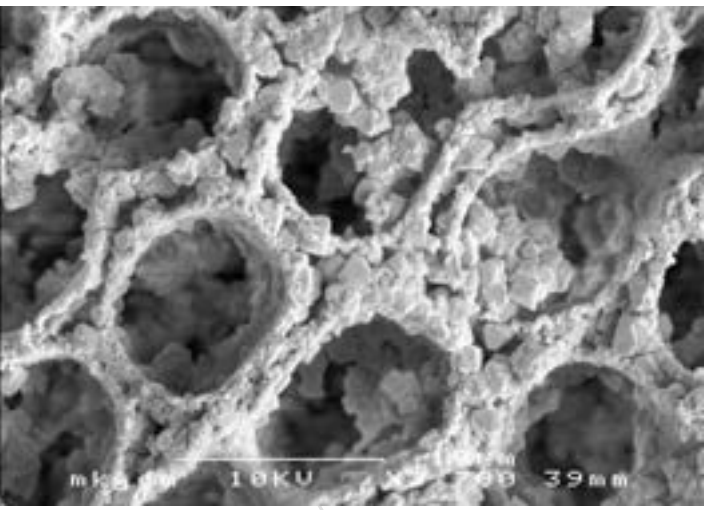


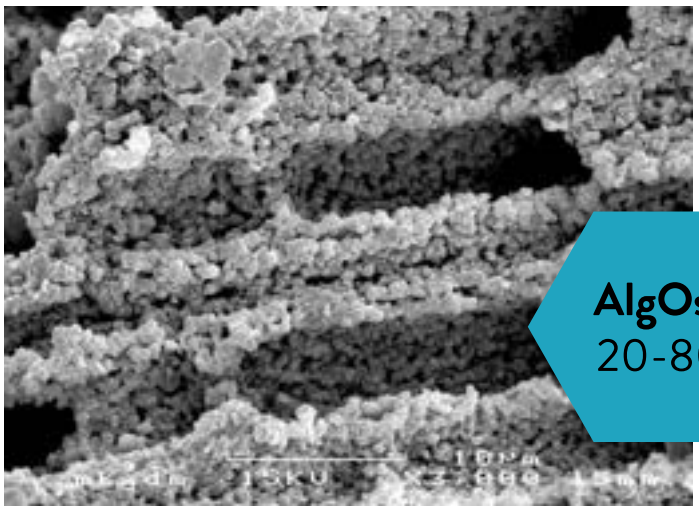


AlgOss 100









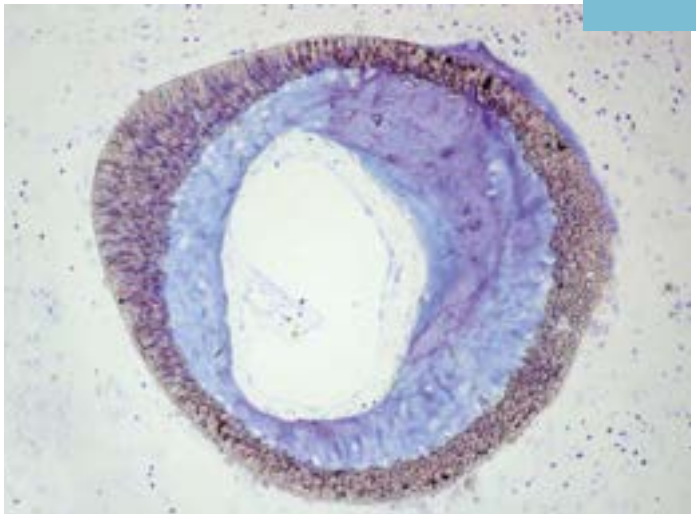
AlgOss 20-80

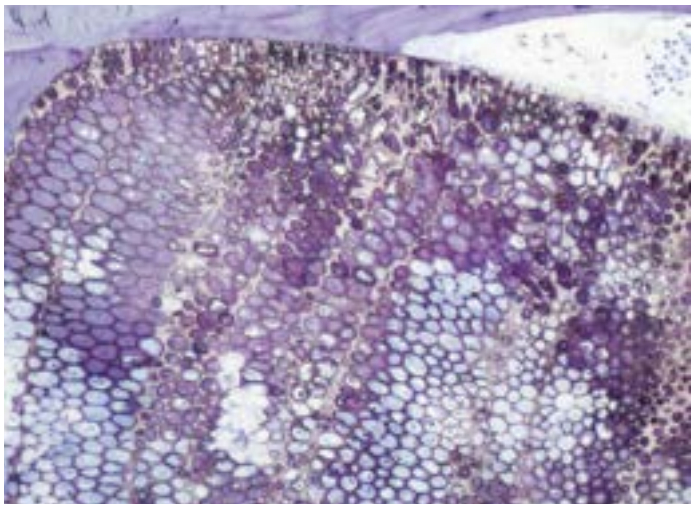
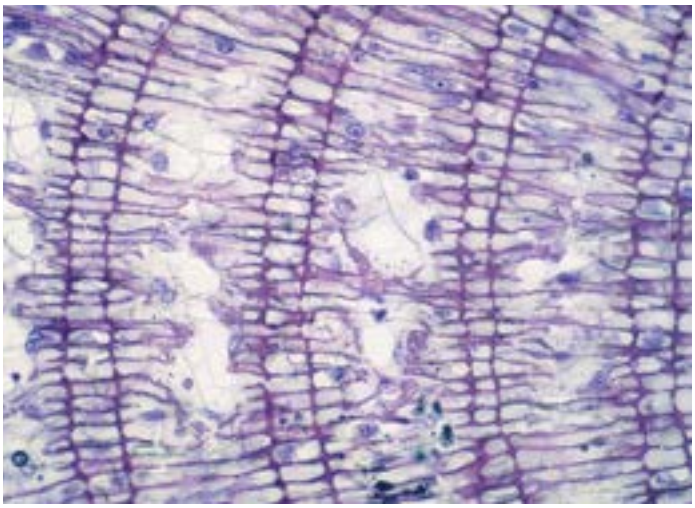
AlgOss **BONE FORMING MATERIALS**

- Restore lost bone naturally
- Biologic “vegan” plant alternative to Allo- and Xenografts
- Sustainably produced from regrowing marine algae
- Unobjectionable from a medical, ethical, and religious point of view
- The world’s only resorbable, purely inorganic bone forming materials on plant origin

COMPARISON AlgOss 100 / AlgOss 20-80

	AlgOss 100 phycogenic algae derived hydroxyapatite	**AlgOss 20-80** phycogenic algae derived biphasic composite
ORIGIN, CHEMICAL COMPOSITION	Marine red algae (>98 % HA)	Marine red algae (20 % HA / 80 % ß-TCP)
CHARACTERISTICS	Natural, pure inorganic granulate, not animal plant derived bone forming material; vegan, plant based bone reconstruction material with a high analogy to the human bone	
POROSITY	Unique interconnected honeycomb-like tubular microstructure with interconnected pores	
	Highly porous hydroxyapatite	**Highly porous biphasic composite with high ß-tricalciumphosphate content**
ABSORPTION	**Excellent absorption properties** Saturation with the patient‘s blood will provide serum proteins and growth factors into the graft and leads to the formation of a mouldable putty The moldable putty ensures ease of handling and stability within the surgical site	
OSSEO-CONDUCTION	**Promotes bone tissue ingrowth and deposition of new bone** New vital bone formation around the surface (icing) and within the porous scaffold	
REGENERATION	**Defect regeneration instead of defect filling**	
	Long-term volume stability in situ Moderate biomaterial degradation and gradual replacement by newly grown vital bone within 3-5 years <50 % after 12 months	Balanced resorption kinetics guarantee a stable volume while new bone forms Faster biomaterial degradation and enhanced bone formation (more rapid turnover) Advanced resorption within 12 months
	Bone-analogous properties allow vascularization and revitalization of the bone defect **Complete functional defect regeneration in the sense of a restitutio ad integrum**	
	Successful clinical application over 30 years Long-term implant success rates that correspond to the use of implants in natural bone Well documented in more than 100 books and papers	**Successful clinical application since 2015** Faster bone remodelling than pure HA The results of a PMCF study with over 100 patients prove the excellent clinical safety and performance of the product
APPLICATION	Saturated with the patient‘s blood. The addition of autogenous bone chips improves the healing. Possibility to adapt bone regeneration by choosing the optimal product variant (AlgOss 100 or AlgOss 20-80).	



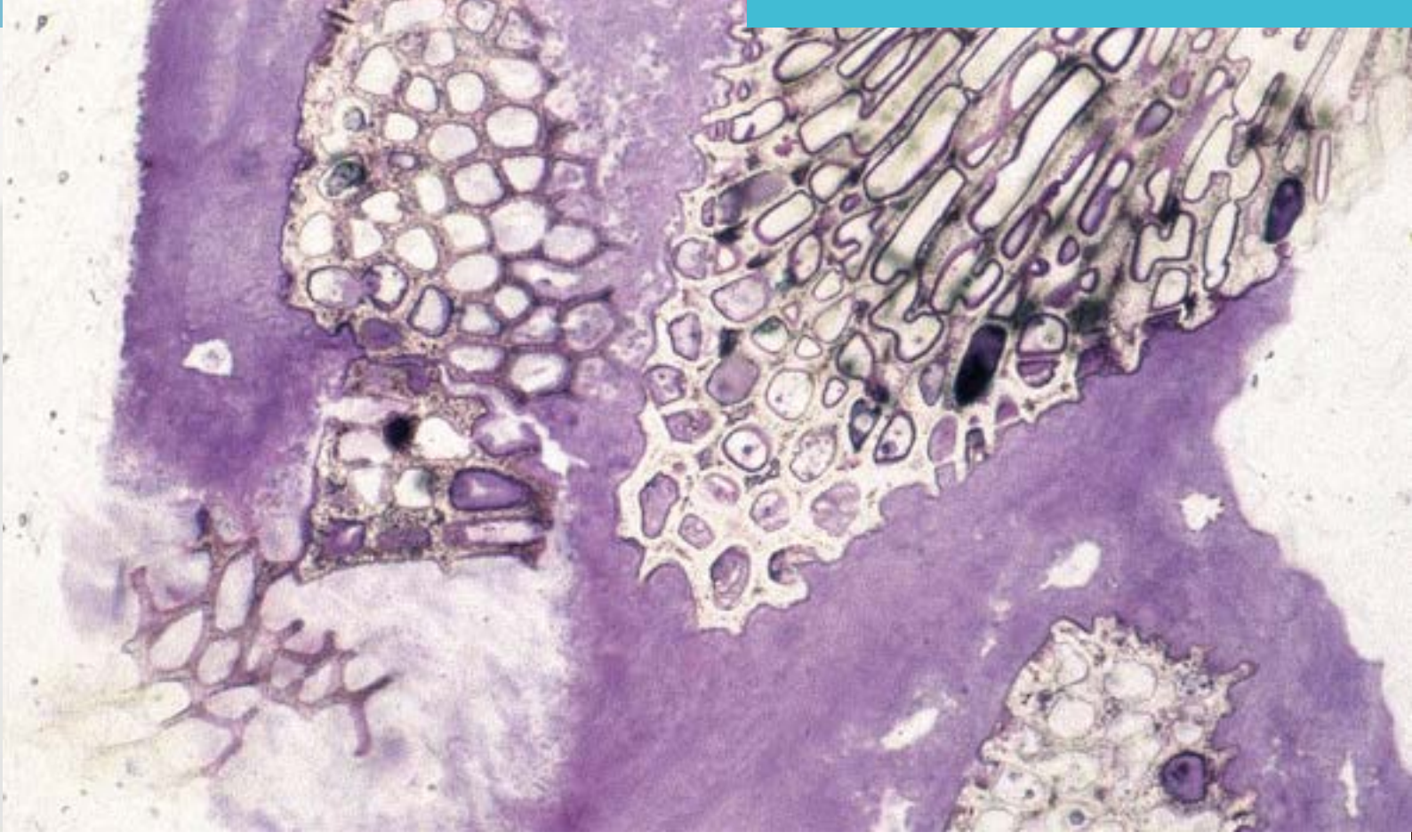



INDICATIONS FOR AlgOss 100 / AlgOss 20-80

- Augmentation or reconstruction of the alveolar ridge
- Maxillary sinus elevation grafting
- Treatment of bony defects e.g.:
  - after cystectomy
  - root resection or
  - periodontal defects
- Extraction socket grafting to enhance preservation of alveolar ridge
- Filling of bone defects (periodontal- or peri-implant defects) in conjunction with membranes for guided tissue regeneration (GTR)

In cases where volume constancy is important over a longer period the pure hydroxyapatite **AlgOss 100** is recommended to ensure longer volume stability.

In defects with extensive contact surface to local bone, the biphasic product with high tricalciumphosphate content (80%) **AlgOss 20-80** leads to faster bone regeneration.



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