

# radix – the root of dental success

Radix Implants & Biomaterials GmbH specialises in dental implantology and offers quality products at fair prices for oral and maxillofacial surgeons, dentists and dental technicians – with an extensive range of solutions for dental prostheses.

Our aim is to offer high-quality dental implants to meet the requirements of users and patients for materials and processes.

Radix is assisted by recognized and experienced implantologists with professional and scientific advice.

## radix bovine Spongy bone



### Properties

- › Bone graft 100% natural
- › Easy handling
- › Rapid bone regeneration
- › Excellent osteoconductivity
- › High wettability
- › Maximum efficacy and safety in bone regeneration

### Indications

- › Reconstruction
- › Increase of alveolar ridges
- › Bone dehiscence
- › Filling of immediate implants
- › Sinus lift procedures
- › Preparing implant sites
- › Filling of bone defects

› the root of dental success



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• • • Made in Germany

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radix bovine



Spongy bone  
› the root of dental success





radix bovine is an inorganic mineral matrix made of cancellous bovine bone.

The manufacturing based on different physical-chemical processes removes all organic components from the femur proximal extremity (femoral bovine head) guaranteeing high safety.

Due to the characteristics of its natural and inorganic structure, **radix bovine** may be compared to human bone. Its interconnected pore structure and special consistency, it promotes bone growth in the implant zone, and undergoes a gradual physiological remodeling process through the osteoclasts and osteoblasts. **radix bovine** is an excellent alternative to autologous bone.

INDICATIONS FOR radix bovine

Alveolar ridges reconstruction and augmentation.

Filling of bone defects after root resection, cystectomy, extraction of retained teeth and root end surgery.

**Implantology:** bone dehiscence, filling of immediate implants, preparing implant sites, sinus lift procedures.  
**Periodontology:** filling of bone defects complemented by products for guided tissue regeneration (GTR) and guided bone regeneration (GBR).

PRODUCT SPECIFICATIONS

**radix bovine** Spongyous bovine bone is available in granules with a particle size between 0.25-1.68 mm: it is presented in gamma radiation sterile vials of 0.5g, 1.0g and 2.0 g.

Ref.	Particle Size	Content
RXBHA01	0.25 - 1.68 mm	0.5 g
RXBHA02	0.25 - 1.68 mm	1 g
RXBHA03	0.25 - 1.68 mm	2 g

USING radix bovine

**radix bovine** should be used in accordance with the general medical guidelines regarding handing in sterile conditions and pharmacological treatment of patients.

- Exposing the defect using a full-thickness flap, depending on the basic surgical procedure, and completely eliminate the granulation tissue.

➤ Before performing the granule graft on the patient, wet it with physiological saline solution, apyrogenic water or blood from the patient.

➤ Apply the material to the defect, using sterile surgical instrument.

➤ Do not apply excessive quantities of material to the defect.
- Model gently in the site with the spatula.

➤ The flap should cover the implanted material completely during the suturing process.

➤ As a rule, in cases in which should be covered subperiostically with a collagen membrane.

➤ Control of bacterial infection and adequate oral hygiene will promote effective periodontal treatment. For this reason, before the surgical procedure it is advisable to implement hygiene regarding care and maintenance of the affected area both before and after surgery.

SAFETY, EFFICACY AND QUALITY / made in Spain

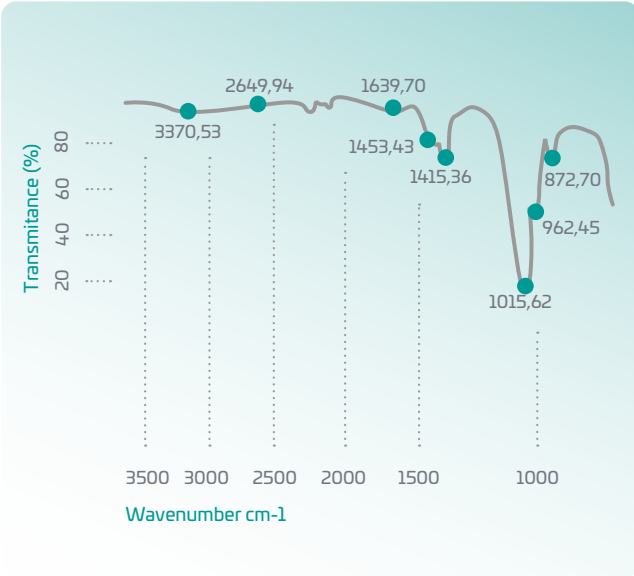
**Manufacturing process:** **radix bovine** is entirely made of the femoral head of cattle. The origin of raw material and type tissue used and the manufacturing process of this bovine material meets the safety criteria and requirements. Therefore, the risk of BSE transmission can be considered negligible.

**BSE prevention regulations:** **radix bovine** is a medical device manufactured utilizing animal tissues and therefore classified as class III according to the Rule 17 of Annex IX of Medical Device Directive 93/42/EEC. The BSE/TSE safety concerns have been addressed in accordance with Commission Regulation (EU) No 722/2012.

The characteristics of the natural and anorganic structure of **radix bovine** can be compared to that of human bone.

RESULTS FROM CHEMICAL ANALYSIS SERVICE

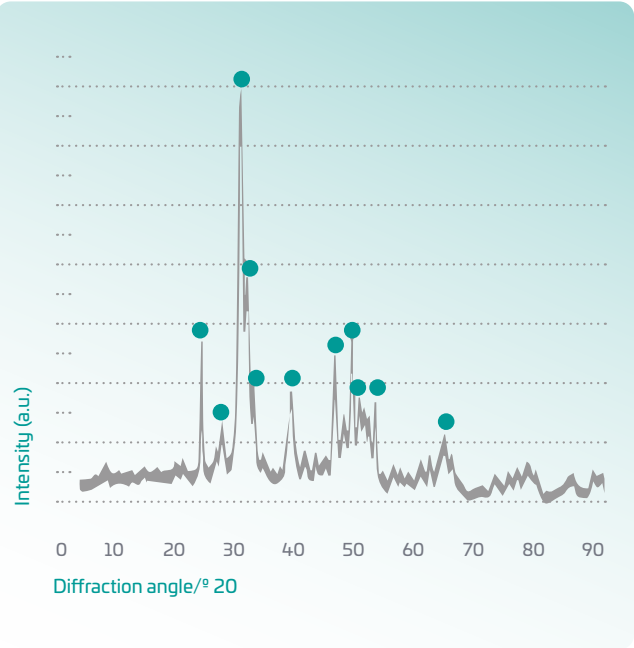
The chemical groups in the Fourier Transform Infrared (FT-IR) spectra of **radix bovine** shows the characteristics peaks of hydroxyapatite.



Chemical Analysis Service, Autonomous University of Barcelona, Protocol on the analysis of material, 2022.

RESULTS FROM X-RAY DIFFRACTION

Analysis reveals a typical structure of hydroxyapatite. **radix bovine** shows a high crystallinity.



RATIO Ca/P

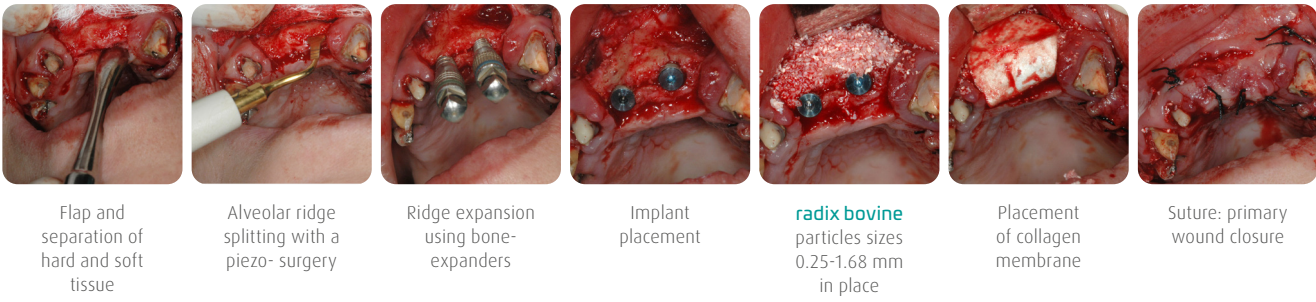
The ratio Ca/P of radix bovine is almost same as that of human bone

radix bovine  
1.68 - 1.71

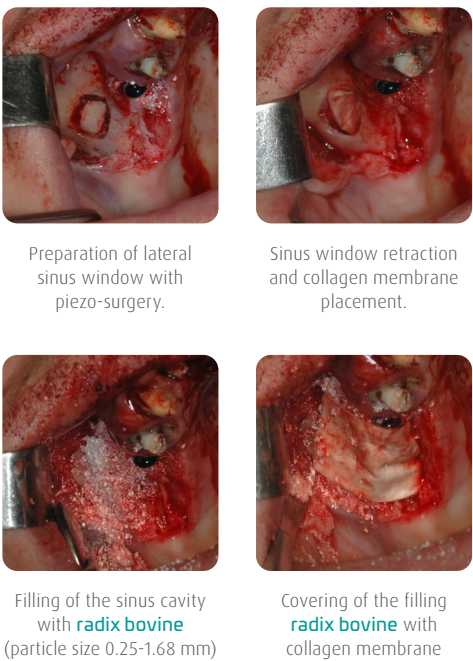
Human bone  
1.72

CLINICAL APPLICATION / Clinical cases by Dr. Daniel Ostrowicz

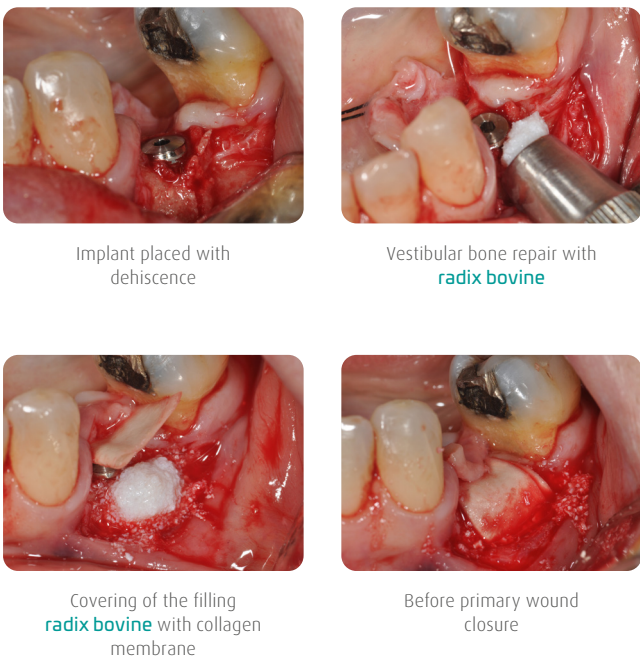
1. Ridge expansion with radix bovine



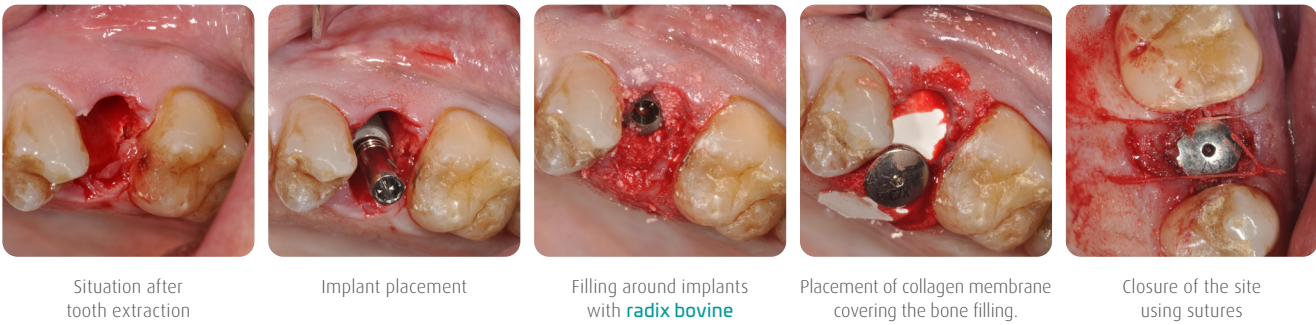
2. Sinus lift with radix bovine



3. radix bovine for coverage of dehiscence



4. Implant placement post-extraction. Fill the gap on implant placement with radix bovine



To facilitate new bone formation, the implanted material should be in direct contact with bone walls that have good vascularization (in some cases it is advisable to prepare the bone tissue with a drill). In case of large cavities, combining **radix bovine** with autologous bone may improve the new bone formation. In areas with an increased bone matrix, no mechanical load should be applied, and implants should not be placed in their final position until 4-6 months after the material has been inserted. Correct treatment of the periodontal lesion is necessary to guarantee the results (root planning, curettage, etc.) before applying **radix bovine**.