MEGAGEN

bone & tissue regeneration

botiss biomaterials

socket preservation

collacone® max

INNOVATIVE COMPOSITE MATRIX

biomimetic

resorbable

composite

botiss regeneration system

Development / Production / Distribution

cerabone®

Natural bovine bone graft

maxgraft® cortico

Processed allogenic bone plate

maxgraft®

Processed allogenic bone graft

maxgraft® bonebuilder

Patient matched allogenic bone implant

maxgraft® bonering

Processed allogenic bone ring

maxresorb® inject

Synthetic injectable bone paste

maxresorb®

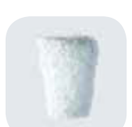
Synthetic biphasic calcium phosphate

maxresorb® flexbone

Flexible blocks (CaP / Collagen composite)

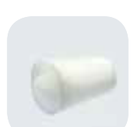
Straumann® Emdogain®

Enamel matrix derivative



collacone® max

Flexible cone (CaP / Collagen composite)



collacone®

Collagenic hemostat (Cone)

collafleece®

Collagenic hemostat (Sponge)

mucoderm®

3D-stable soft tissue (Collagen) graft

collprotect® membrane

Native collagen membrane

Jason® membrane

Native pericardium GBR / GTR membrane

permamem®

High-density PTFE barrier membrane

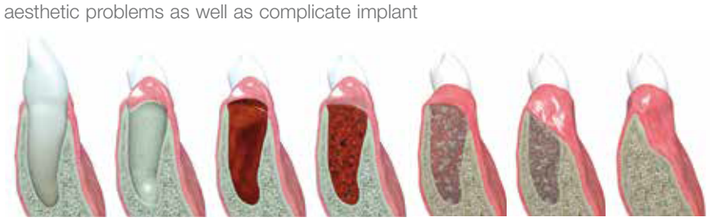
Socket preservation — safeguarding your sockets

BONE RESORPTION FOLLOWING NATURAL SOCKET HEALING

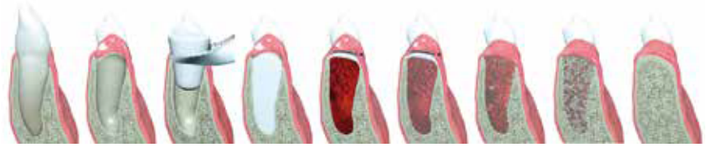
Immediately after tooth extraction, the socket fills with blood and a coagulum is formed. Within a week, invading vascular, immune- and connective tissue cells remodel the clot into granulation tissue that is successively replaced by a provisional matrix. Mineralizing processes, starting from the socket walls, lead to the formation of new, woven bone that gradually fills the socket and is eventually replaced by mature lamellar bone.

When the socket heals naturally, the bundle bone, i.e., the bone that surrounded the tooth, quickly resorbs and the socket loses its shape. Once the newly formed bone remodels into mature bone, the ridge is further reduced. The reduced ridge and collapsed soft tissue may pose aesthetic problems as well as complicate implant placement.

> Natural healing of the extraction socket is associated with bone resorption



SOCKET PRESERVATION with collacone® max



The principal aim of socket preservation is to reduce the loss of alveolar bone and improve the aesthetic outcome of the final prosthesis. Preserving the bone volume prevents the need for additional augmentative procedures and enables stable implant installations.
In addition, covering of the open wound prevents tooth extraction complications, such as alveolar osteitis, bacteraemia and surgical wound infections. collacone® max is a composite material that maintains the socket space and provides a scaffold for bone ingrowth and new bone tissue formation. The patient's health status and the indication are amongst the most critical factors that, beside the biomaterials applied, decide the time of healing and regeneration.

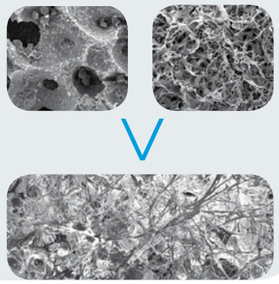
collacone® max: FORMED TO FIT

The collacone® max is specifically designed for application into extraction sockets and may be easily applied, without rehydration, using a pair of tweezers.

collacone® max features excellent handling properties and easily fits into the extraction socket due to its cone shape

Complete resorption
of the biomimetic collacone® max composite

collacone® max is a biomimetic composite material that resembles native bone in its composition of collagen and biphasic calcium phosphate. While the collagenous phase provides biological signals that promote wound healing within the socket, the biphasic calcium phosphate component ensures volume stability and complete resorption at a controlled rate.



Scanning electron microscopy (SEM) images showing the microstructure of maxresorb® (top left), collagen fleece (top right), and the composite of maxresorb® particles and collagen; collacone® max.

Production process

collacone® max is made of porcine collagen and hydroxyapatite (HA) / beta-tricalcium phosphate (ß-TCP), e.g., maxresorb®. The collagen extraction procedure involves multi-stage cleaning processes that effectively remove all non-collagenous proteins and antigenic components.

maxresorb® particles, i.e., biphasic calcium phosphate

Collagen

Collagen-Calcium Phosphate Composite

maxresorb® granules are produced by mixing hydroxyapatite and beta-tricalcium phosphate (60%/40%) in a ceramic slurry; this ensures a completely homogenous distribution of the two calcium phosphate phases. The collagen solution is mixed with maxresorb® granules to form a completely homogenous mixture that is molded into cone shapes.

collacone® max maintains the socket space and provides a scaffold for bone ingrowth and new bone tissue formation

PROPERTIES AND ADVANTAGES

- Volume keeping; maintains space and avoids soft tissue collapse
- Easy handling; may be applied straight into the socket using a pair of tweezers
- Maintains integrity in the presence of blood /saline solution, and during application
- Complete resorption at a controlled rate due to synthetic calcium phosphate granules

Product specifications collacone® max

collacone® max

Art.-No.	Form	Size	Content
250001		Height ~16 mm, width on top ~11 mm, bottom width ~7 mm	1 cone

hard tissue | soft tissue

Bundle pack

collacone® max and mucoderm® soft tissue punch

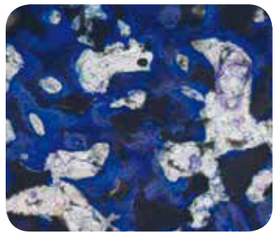
Order-No.	Content	Art.-No.
257110	1 x collacone® max (height ~16 mm, width on top ~11 mm, bottom width ~7 mm)	250001
	1 x mucoderm® punch (Ø 10 mm, thickness ~1,2-1,7 mm)	710210

In vivo
pre-clinical studies on collacone® max

New bone formation with collacone® max after eight weeks of healing in a pig model

Prof. Dr. Dr. D. Rothamel, Clinic Mönchengladbach, University of Düssledorf

The biocompatibility and resorption behavior of collacone® max were examined following implantation into the pig skull. Toluidine blue staining of histological sections at eight weeks post-operatively, display the maxresorb® particles (grey) well integrated into the newly formed bone (blue). The mineral components and the non-mineralized tissue are here shown in black and white, respectively.

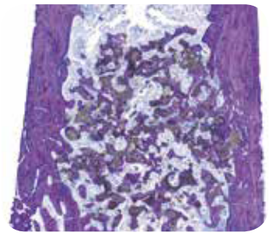


collacone® max at eight weeks after implantation into the pig skull

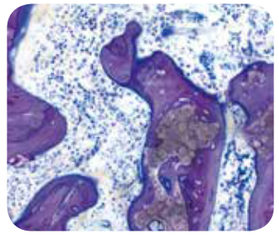
Examination of the influence of collacone® max on bone healing in rats at three weeks post-operatively

Prof. Dr. Dr. Dr. h.c. R. Schnettler, University of Gießen and Marburg

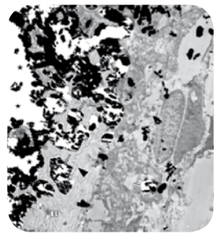
The panoramic view illustrates the defect area in the metaphysis of the rat femur. Already after three weeks of healing, newly formed bone is visible around the implant material. Osseous bridges are formed in between the conglomerates of the implant.



Histology showing the integration of collacone® max into the host tissue



Newly formed bone lining the bone substitute material



Ultra-thin section of the implanted material, as visualized by electron microscopy

CLINICAL CASE BY

Dr. Michael Back, Munich, Germany

SOCKET PRESERVATION WITH COLLACONE® MAX AND MUCODERM®

Clinical situation before extraction

Situation after tooth extraction

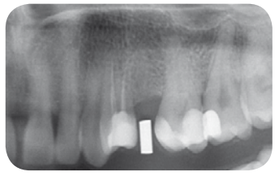
collacone® max easily applied with a pair of tweezers

Covering collacone® max with mucoderm® and fixation with holding sutures

Soft tissue healing at 14 days post-operatively

Soft tissue situation after suture removal

Intact ridge width and satisfactory soft tissue situation at four months post-operatively



X-ray at the time of re-entry, demonstrating the regenerated bone

Regenerated bone at the time of re-entry, four months post-operatively

Stable insertion of the implant at the regenerated site

Histology harvested at the time of re-entry, showing the newly formed bone in close contact with the mineral particles

To ensure integration of the material, it is recommended to wait six months before performing the re-entry.

It is recommended to cover collacone® max to prevent migration of granules.

bone & tissue regeneration

botiss biomaterials

Innovation.
Regeneration.
Aesthetics.

soft tissue

education

hard tissue

MEGAGEN

MegaGen Implants (UK) Ltd

Basepoint Business & Innovation Centre
110 Butterfield, Great Marlings,
Luton, Bedfordshire, LU2 8DL
www.megagen.co.uk
admin@megagen.co.uk
Tel: (0044) 01582 439771

Rev.: CCMen-06/2019-04