



Hypro-Sorb[®] M Matrix

Atelo-Collagen Type I Matrix – dental



bioimplon GmbH
Biotech Innovation Pioneers

General information

The Hypro Sorb® M Matrix is a multilayer tissue matrix of pure, crystalline Atelo-Collagen Type I (telopeptide free collagen) derived from the bovine Achilles tendon. It supports neovascularization and controlled soft tissue integration and is a safe alternative for the patient's own soft tissue grafting material. It has a particularly strong regenerative effect coupled with an excellent barrier function.

The matrix is the result of many years of experience and an intensive research collaboration between scientific teams of Hypro s.r.o. and Bioimplon GmbH.



Hypro-Sorb® M Matrix,
25 x 50 x 2 mm



Hypro-Sorb® M Matrix,
25 x 25 x 2 mm



Hypro-Sorb® M Matrix,
20 x 25 x 2 mm

Mechanism of regeneration and remodeling kinetics

After placement, the patient's blood infiltrates the Hypro Sorb M Matrix graft through the three dimensional multilayer soft tissue structure, bringing host cells to the inner surface of the graft and starting the neovascularization process. Significant neovascularization can begin after implantation depending on the patient's health condition.

Regeneration is a heterogeneous process occurring at the interface of solid Atelo-Collagen Type I and fluid (blood, wound exudate). The kinetics of the heterogeneous processes depends primarily on the interface area and – as a consequence – on the correlation with the internal surface area of the Atelo-Collagen Type I Matrix. The internal surface area of the Hypro Sorb M Matrix exceeds 150,000 cm²/cm², which is one of the highest known values among similar products worldwide.

The natural specific affinity of Atelo-Collagen Type I to thrombocytes results in the release of agglutination factors and growth factors such as IGF I, TGF beta, PDGF, which in combination with blood plasma factors promote the regeneration of the soft tissue. In addition, Atelo-Collagen Type I inhibits the serine proteinase of exudate and promotes granulation and epithelisation.

Moreover, the implanted Hypro Sorb M Matrix is absorbed within six months. The mechanism of absorption and biotransformation is initiated through the activity of specific enzymes – latent collagenases – which are activated in the tissues during injuries and healing. Collagenases are also present in lysosomes, granulocytes and other cell structures near the wound.

Preclinical tests have shown that the process is apyrogenic (without inflammatory reaction) and the presence of macrophages (inflammation cells) is irrelevant to the resorption of the Atelo-Collagen Type I. The absorption process results in slow hydrolysis of the collagen protein to give soluble peptides and amino acids, which are metabolized by the tissue cells and so promote the regeneration process and remodeling into the patient's own tissue. The Atelo-Collagen Type I is tolerated by human tissues without any immune reaction and is metabolized through a mechanism similar to that of the tissue's own collagen.

Properties of the Hypro-Sorb M Matrix

Thanks to the atelopeptidation and lyophilization technologies that were used in its production, the Hypro-Sorb M Matrix has a number of important characteristics:

- Biocompatible pure, crystalline Atelo-Collagen Type I – free of antigenic telopeptides
- Multilayer soft tissue structure
- Rapid neovascularization and integration
- Accelerates soft tissue replacement without the need for autograft harvesting
- Complete remodeling into patients own tissue
- Excellent barrier function
- Resorption time of approximately six months
- Easy handling, can be easily applied and fixed
- Can be cut to shape for specific procedures
- Sterile for five years, safe and resorbable

Advantages of the Hypro-Sorb M Matrix

- Consistent availability and safety
- No need for autograft harvesting
- High patient acceptance
- Reliable clinical results
- Cost effective

Indications

The Hypro-Sorb M Matrix is used in periodontal and maxillofacial surgery:

- Treatment of gingival recession
- Segmental growing of alveolar tissue
- Sinus lift
- Furcation treatment
- Vertical and segmental augmentation
- Cleft lip and palate

Important information

Composition:

Hypro-Sorb M Matrix consists of 99,9% naturally pure, crystalline, resorbable, sterile, bovine Atelo-Collagen Type I (free of antigenic telopeptides).

Shelf life:

Five years from the date of production.

Storage conditions:

The Hypro Sorb® M Matrix must be stored at a temperature between 25°C and +50°C in a dry place. It needs to be protected from direct sunlight.

Postoperative care

In case of wound dehiscence with matrix exposure, the usual antimicrobial precautions are recommended. Removal of the membrane is not necessary. The resorption time may be accelerated by external influences such as saliva, etc. The properties of collagen may favour rapid healing of the wound dehiscence.



pure, crystalline Atelo-Collagen Type I structure

Hypro-Sorb® M Matrix Product Portfolio

Product name	Cat.no.	Matrix size & Pcs. / Package	Description
Hypro-Sorb M Matrix	039	20 x 25 x 2 mm 6 pieces	Multilayer Atelo-Collagen Type I matrix for guided tissue regeneration in periodontal and maxillofacial surgery
	040	25 x 25 x 2 mm 1 piece	
	041	25 x 50 x 2 mm 1 piece	

The Hypro-Sorb® M Matrix is a Medical device class III, clinically tested and is certificated by notified body No. 1023, EC Certificate No. 090627QS/NB/a, EC Design-Examination Certificate No. 090628CN/NB/a.