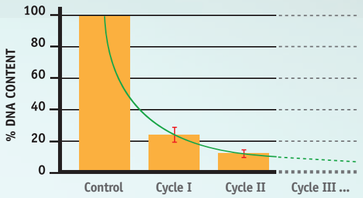
Biochemical **characterisation**

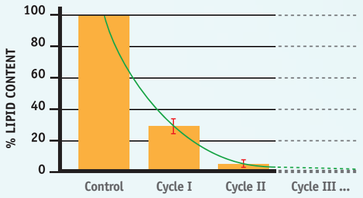
Biochemical Laboratory/Quality Control - Bioteck S.p.A.

Quantity of residual DNA



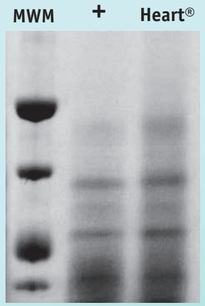
The DNA content is directly proportional to the cell population present in the tissue.
The "control" is untreated pericardium. The other columns show the constant reduction of residual DNA following the first treatment cycle according to the Zymo-Teck® process. Further cycles help guarantee complete deantigenation.

Quantification of the lipid content



The "control" is untreated pericardium. The other columns show the drastic reduction of the lipid content after the first treatment cycle according to the Zymo-Teck® process.

Preserved collagen



Electrophoretic separation on denaturing gel (SDS-PAGE). The first column (MWM) shows the molecular weight markers, the second (+), a type I collagen sample treated with pepsin, an enzyme able to cut the proteins at specific points. The third column shows a sample Heart® membrane subjected to the same treatment. The bands visible in the column (+) are entirely comparable with those seen in the Heart® membrane, confirming the presence of collagen in its native conformation.

BIOTECK®
The science of bone tissue

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Headquarters

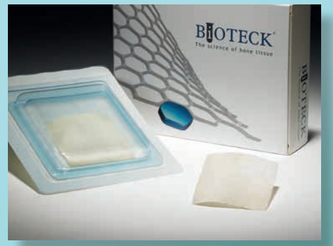
Bioteck® is an Italian company producing bone substitutes and protective membranes that are successfully used in orthopaedics, neurosurgery, oral and maxillofacial surgery.
Founded in 1995, the company continues to grow constantly and now operates in more than 50 countries around the world. A firm commitment to scientific research forms the basis for the innovative solutions offered by **Bioteck®** products. The company collaborates on numerous national and international research projects, which have driven the basic research and helped in writing important chapters in bone biology.
The in-depth knowledge acquired by **Bioteck®** through its research ensures the absolute quality of its products, which are subjected to strict environmental and quality controls, thereby guaranteeing a product meeting the highest quality and safety standards. **Bioteck®** applies a policy of total transparency, opening up the doors of its Production and R&D Center for the monitoring of its innovative manufacturing process and the intense scientific research carried out by its staff.

Production and R&D Center

Biochemical Laboratory/Quality Control

Quality and safety guarantee

CE
0373



Heart® - an equine pericardium membrane range for neurosurgery, orthopaedics, general surgery, oral and maxillofacial surgery.

ISO 9001
ISO 13485

concept: mauro fortani - vi - rev. 150109_0_HR_C_EN01-00

BIOTECK®
The science of bone tissue

completely **biocompatible**

hard-wearing and **suitable for suture**

naturally **re-absorbable**

Heart® Patch

decellularized
biological matrix

Heart® Patch

decellularized biological matrix

Zymo-Teck® Process: the secret of the **quality** of **grafts**

Heart® Patch is a natural membrane made from equine pericardium, treated using the sophisticated Zymo-Teck® deantigenation process

Heart® Patch is a biological matrix for dural replacement and repair, obtained from carefully-selected equine pericardium, to ensure just the right quality and thickness, and which is thereafter treated using the exclusive **Zymo-Teck® process**.

This sophisticated Bioteck® patented biochemical processes enables the elimination of all potentially immunogenic elements: cells, lipids and noncollagenous proteins, combining oxidative phases with the use of enzymes, natural catalytic proteins. The low temperatures at which the Zymo-Teck® process operates and a careful selection of the enzymes used, enables the **collagen fibres** to be preserved in their **natural conformation**.

Sterilisation with beta rays guarantees the complete elimination of any pathogens in respect of the three-dimensional structure of the fibres, keeping the excellent product **biomechanical characteristics** unaltered.

Heart® Patch acts as an **inert**, **biological scaffold**, able to support the tissue repair process without causing undesired reactions in the surrounding tissues. Once applied, the **Heart® Patch** membrane acts as a matrix for fibroblast infiltration and as a substrate for the deposit of new collagen.

Heart® Patch is therefore **gradually degraded** and replaced by new, vital patient tissue.

Heart® Patch

completely **biocompatible**

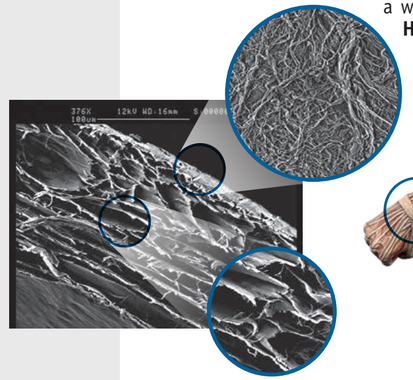
hard-wearing and easy to **suture**

scaffold for the healing process

progressively replaced by **new vital tissue**

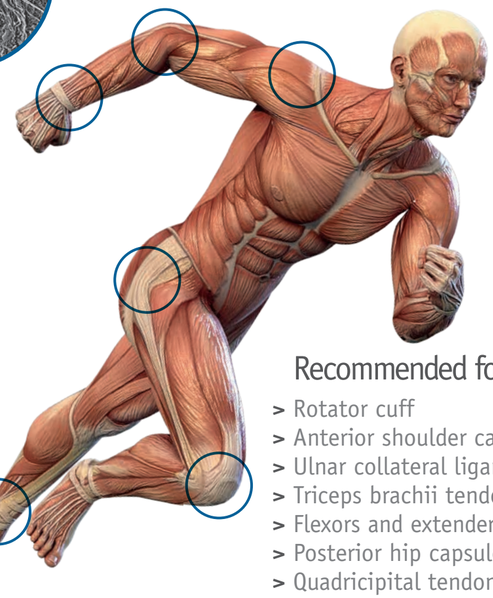
The **natural matrix** for the repair and strengthening of tendons and ligaments

The maintenance of the native pericardium structure, characterised by a weave of multi-directional, multi-layer collagen fibres makes **Heart® Patch** perfectly **adaptable** to the implant site and **high mechanical resistance** able to ensure easy fixing into place by suture.



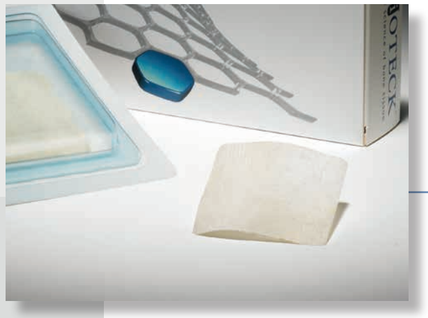
Heart® Patch membrane observed under the scanning electronic microscope (SEM) has a multilayer, compact appearance, characterised by a close-knit weave of collagen fibres

Padua University, Biology Department, Electronic Microscopy Service



Recommended for:

- Rotator cuff
- Anterior shoulder capsule
- Ulnar collateral ligament
- Triceps brachii tendon
- Flexors and extenders of the hand
- Posterior hip capsule
- Quadricipital tendon
- Posterior tibial tendon
- Peroneal tendon
- Tendon of the knee
- Achilles' tendon

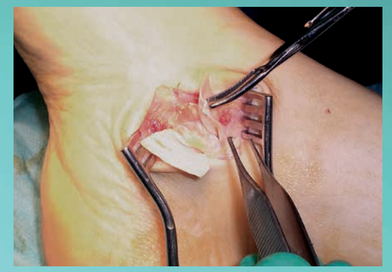


Heart® Patch
pericardium membrane

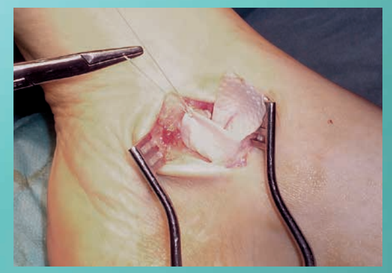
HRT-020	Pericardium membrane	50 x 50 x 0.2-0.4 mm
HRT-021	Pericardium membrane	60 x 80 x 0.2-0.4 mm
HRT-022	Pericardium membrane	ø 50 x 0.2-0.4 mm

Application of **Heart®** Patch to **repair** and **strengthen** the posterior tibial tendon

Heart® Patch is cut to size and placed beneath the tendon to be strengthened



Heart® Patch is wound and sutured around the posterior tibial tendon to strengthen it and provide an excellent scaffold for the healing process



Photograph courtesy of Dr Alberto Siclari
Trauma and Orthopaedic ward, Biella Hospital