Porous titanium granules for bone regeneration

Tigran™ PTG
Tigran™ PTG White
Titanium

One of the major advances within dentistry is the introduction of titanium as a biomaterial for oral rehabilitation.

Compared with other metals, titanium holds a unique position. With its excellent mechanical properties, high corrosion resistance, low density and good biocompatibility it makes a remarkable metal that is incredibly strong and versatile.

Commercially pure titanium is today used frequently within dentistry and has been used for oral applications such as dental implants for more than 40 years. It is a very well studied and clinically documented biomaterial much suitable for dental restorations. Based on continued clinical use, a biological acceptance towards pure titanium has been established and documented.

Tigran™ PTG

Tigran™ PTG - porous titanium granules - is a bone graft material made of commercially pure titanium. The titanium granules are between 0.7 mm and 1.0 mm in size, porous, irregularly shaped and non-resorbable.

Tigran™ PTG White

Tigran™ PTG White is also made of commercially pure titanium but bone-like in its appearance. The bone-like colour is achieved through oxidation.

Tigran™ PTG White granules are between 0.7 mm and 1.0 mm in size, porous, irregular in shape and non-resorbable. Tigran™ PTG White is a supplement to Tigran™ PTG, intended to be applied in more aesthetically visible areas such as the anterior of the jaw.
Porosity

The two images below are scanning electron microscope (SEM) images of a porous titanium granule, Tigran™ PTG. The images show the irregular shape of the granules and the interconnected granule pores. The interconnected pores provide a unique framework for new bone to grow through, around and in between the granules creating a long lasting stability and osseointegration.

Irregularly shaped

Tigran™ PTG and PTG White are irregular in its shape which makes the granules interlock with each other giving a superior primary stability and support.

Non-resorbable

Tigran™ PTG and PTG White are made of commercially pure titanium and is a completely non-resorbable bone graft material. The permanent volume fill does not resorb at all over time but maintains the structure and integrity, supports and stabilises the coagulum as well as it supports the soft tissue and stabilises the implant giving long lasting aesthetic results.

The specific granule characteristics combined; commercially pure titanium, interconnected porosity, its irregular shape and non-resorbability makes Tigran™ PTG and PTG White highly biocompatible, offering an exceptional environment for osteoconduction and osseointegration.

The two microscopic images below are histological sections showing new bone integrating Tigran™ PTG granules and osseointegration of the implant.

For successful treatment results, Tigran™ PTG or PTG White must not be overfilled when applied as the volume is permanent and does not shrink over time. Ensure a sufficient blood flow for a stable blood coagulum and only pack gently for interlocking of granules and primary stability. Standard drilling procedures can be used in connection with Tigran™ PTG and PTG White.

Tigran™ PTG and PTG White is radiopaque and clearly visible on x-ray film - a major advantage after surgery and during postoperative follow-ups.

Tigran™ PTG is available in 0.5 ml and 1.5 ml.
Tigran™ PTG White is available in 0.25 ml and 0.5 ml.

Indications

Tigran™ PTG and PTG White are intended for:
- sinus lift procedures with immediate installation of dental implants
- treatment of peri-implant bony defects
- filling, augmenting or reconstruction of bony defects in the oral and maxillofacial regions.
Tigran Technologies AB (publ) is a Swedish medtech company with the vision of becoming the leading supplier of dental products and methods for bone regeneration, peri-implantitis and periodontitis.

Tigran offers Tigran™ PTG and Tigran™ PTG White as well as Tigran™ PeriBrush™. it is a single use, state-of-the-art, rotating titanium brush and unique for its kind. The brush is made up of fine titanium bristles for effective debridement of contaminated dental implant surfaces due to bone loss caused by peri-implantitis. The brush stem is designed flexible to give easy access to narrow cavities. Tigran™ PeriBrush™ cleans gently, preserves the implant surface and shortens the treatment time.

Tigran products offer effective treatment methods for dental professionals and improved treatment results for patients.

Tigran works actively with an extensive development program and has a number of published, submitted and on-going experimental and clinical studies. The company products are CE marked, CE0413, and protected by a strong patent portfolio. Tigran has received market clearance by the FDA for Tigran™ PeriBrush™.

For more information, case studies and scientific evidence, please visit www.tigran.se