



Tavakol BioMimetic Technologies



NANOTECHNOLOGY IN ACTION: REDEFINING TREATMENT
STANDARDS, EMPOWERING PATIENTS, HARMONIZING WITH
THE **ENVIRONMENT** FOR A MORE SUSTAINABLE FUTURE

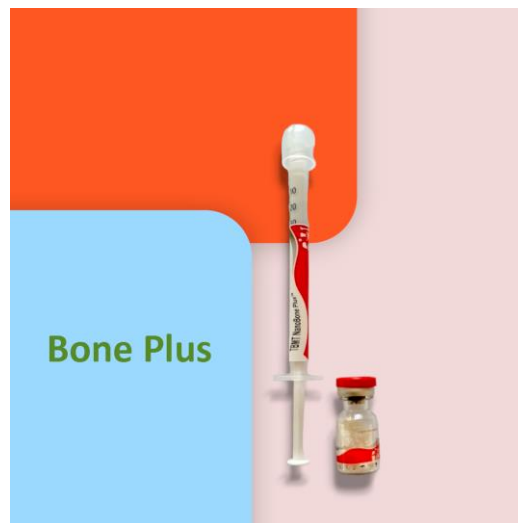
NANOMIMETIC

TBMT NanoBone Plus

The Novel NanoMimetic Scaffold for Osteogenesis

US Patent: US10485895B2

- ❖ Synthetic peptides, Self-assembling peptide nanofibers & Nano-ceramics
- ❖ Biocompatible based on ISO 10993 standards
- ❖ Ready to use, no preparation needed
- ❖ Sterility Assurance Level (SAL) 10⁻⁶
- ❖ Easy to use scaffold:
 - Viscous solution
 - White soft gel
 - TBMT NanoBone Plus dose not obstruct the syringe



Intended use

TBMT NanoBone Plus™ provides an angiogenic, anti-inflammatory and osteogenic scaffold to enhance bone regeneration through their osteogenic biological motifs in the backbone of the oligopeptides, self-assembling peptide nanofibers and nano- ceramics. TBMT NanoBone Plus™ is a bioresorbable and biocompatible scaffold.

TBMT NanoBone Plus is a class D medical Device



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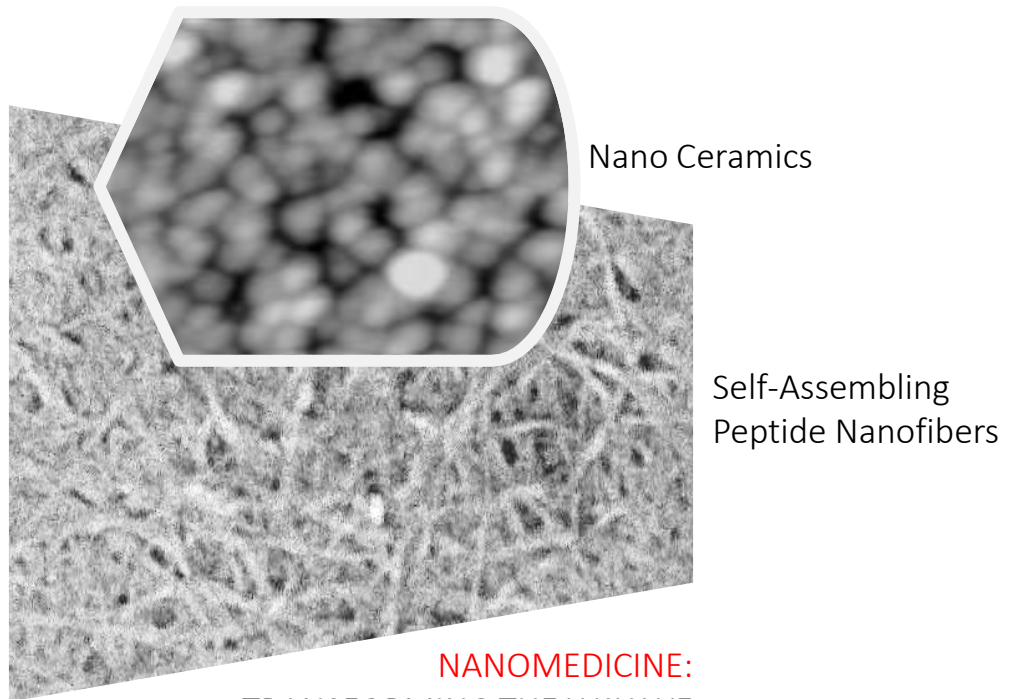


TBMT NanoBone Plus

The Novel Peptide based Nanofibrous and Nanoceramic Scaffold

Mode of Action

The TBMT NanoBone Plus™ consists of synthetic anti-inflammatory, angiogenic and osteogenic self-assembling peptide nanofibers and nano-ceramics, serving as a scaffold. Both its mineral and organic phases are on the nano-scale, mimicking the structure of natural bone. When TBMT NanoBone Plus™ interacts with bone, it creates a 3D scaffold, filling the cracks and repairing imperfections. At the same time, swelling powder vial provides mechanical support especially during sinus lifts. It mineralizes bone surface upon contact to the bone; resulting in exposure of the osteogenic biomolecules on the bone surface, triggering angiogenesis and promoting robust osteogenesis.



NANOMEDICINE:
TRANSFORMING THE WAY WE
HEAL, ONE ATOM AT A TIME



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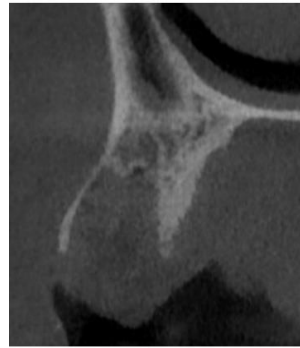
Before



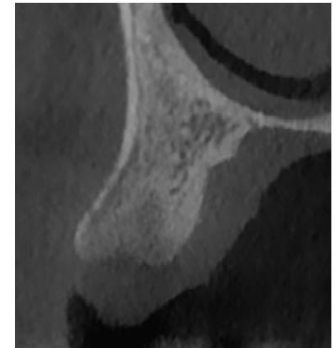
After



Before



After



CBCT Before and after 2 months **TBMT** NanoBone implantation in Socket preservation model, showing strong and early bone regeneration in socket

Before



After



TBMT NanoBone Plus implantation in sinus lift model showing strong sinus lift



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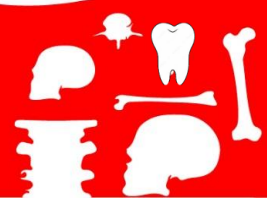


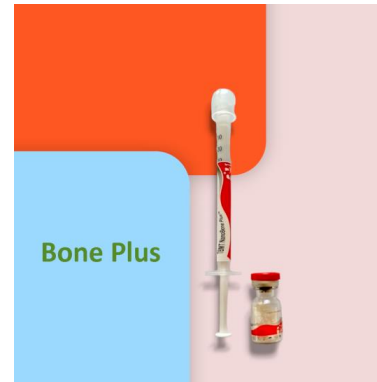
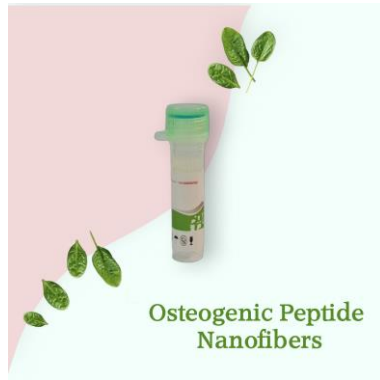
Components

Product Name	Ceramic Components		Self-assembling peptide Nanofibers
 NanoBone Plus	Syringe Nano HA+ TCP	Glass Vial Nano HA+ TCP	Osteogenic, angiogenic and anti-inflammatory nanofibers
 NanoBone	Syringe : Nano HA+ TCP		Osteogenic, angiogenic and anti-inflammatory nanofibers
 Swelling NanoBone Powder	Glass Vial: Nano HA+ TCP		
 Peptide Nanofibers™	-		Osteogenic, angiogenic and anti-inflammatory nanofibers

Advantages

Synthetic self-assembling peptide nanofibers & Ceramics	 No risk of contamination from a biological source
Ease of use	 Single prefilled and ready-to-use syringe  Suitable for bone repair
In-situe peptide nanofibers formation	 Applicable to narrow spaces  Covers well uneven surfaces
Resorbable	 The components of Peptide vial completely resorb over a few months whereas the swelling powder vial persists for several years to provide added structural support.





Packages and Models Information

Product Name	Indication Use	Model	Size
TBMT NanoBone Plus	Socket Preservation Ridge Augmentation Dental implant Sinus lift Craniofacial reconstruction Bone fracture healing Osteotomy	Ceramic Syringe Peptide Vial Powder Vial	0.25 cc + 0.1 gr syringe + 0.25 gr Vial
			0.5 cc + 0.2 gr syringe+ 0.5 gr Vial
			1 cc + 0.4 gr syringe+ 1 gr Vial
TBMT NanoBone	Socket Preservation Ridge Augmentation Osteotomy Bone fracture healing Craniofacial reconstruction	Peptide Vial Ceramic Syringe	0.25 cc + 0.1 gr
			0.5 cc + 0.2 gr
			1 cc+ 0.4 gr
TBMT NanoBone Swelling Powder	Socket Preservation Ridge Augmentation Dental implant Sinus lift Craniofacial reconstruction Osteotomy Bone fracture healing	Powder Vial	0.5 gr
			1 gr
			2 gr
TBMT Peptide Nanofibers™	Socket Preservation Ridge Augmentation Bone fracture healing Craniofacial reconstruction	Peptide Vial	0.25 cc
			0.5 cc
			1 cc



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Storage

- Syringe should be store between 2- 8°C. Vial may store at both room temperature and refrigerator.
- Away from sunlight and heat.

Caution

- Make sure there is no visible sign of damage to the packaging before use.
- Safety has not been checked in pregnant and cancer patients.
- For a single procedure, this medical product can be reapplied. However, do not reuse or store it for use the next day.
- Please refer any adverse effect attributable to this product to us as soon as possible: Contact number: 00989023614037

Instruction for use

Peptide Vial and Powder Syringe

1. Open the medical pocket carefully.
2. Gently shake the vial to ensure the contents mix well.
3. Open the medical vial carefully.
4. Take off the protective cap from the syringe and attach the 27G syringe tip.
5. Withdraw contents from the peptide vial using powder syringe with a needle by a sterile technique.
6. Allow the mixture to swell for at least 90 sec.
7. Mix the ingredients well by pulling the syringe plunger back and forth at least 10 times.
8. Attach the 16 G syringe tip for more comfortable usage .
9. Deposit the entire contents of the syringe into the surgical site, followed by the putty mixture.

Glass Powder Vial

10. Open the medical pocket carefully.
11. Remove the protective flip-off cap from the glass powder vial and, using a sterile technique, transfer its contents to a sterile field.
12. Mix 0.5 cc of the recipient's blood with 0.5 gr of powder. Allow the mixture to swell for at least 2 minutes.

Note:

For optimal results, it is advised to use recipient's blood instead of normal saline when mixing with the powder in the vial.

Add only 0.5 cc of blood or normal saline to every 0.5 gr vial. Using more will create a sticky consistency, which is not desirable for ease of handling.

Note:

The components within the syringe are highly osteoconductive. For maximum bone regeneration, it's recommended to use the entire syringe contents and then add swelled powder vial for mechanical and structural support.



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