

Medical preparation to improve bone healing

Orthopaedics, dentistry, implants, medical device

DESCRIPTION OF TECHNOLOGY

Bone defects, especially in dental implants, tend to become infected and thus impair the durability of an implant in the bone. To solve this problem, a medical preparation in the form of a flowable, ready-to-use, antimicrobial paste has been developed to fill bone defects. The paste is well tolerated, bone-regenerating, injectable, hardenable, antiseptic and biodegradable.



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The medicinal preparation was developed in scientific research work at Giessen University Hospital. It is initially available in powder form and is processed with water to form a flowable paste. It is easy to dose and can be used very simply at the desired location, e.g. injected, where it then hardens. It is used to prevent or treat peri-implantitis (implant-associated infections) in the bone area. It prevents or reverses bone loss as a result of peri-implantitis. It promotes bone formation after implant placement and thus accelerates the healing of the implant in the bone and stimulates bone regeneration capacity. It reduces the frequency and severity of peri-implantitis and its consequences or reverses them and improves the healing of an implant in the bone.

APPLICATION FIELDS

Fields of application include surgery, orthopaedics and dentistry.

AT A GLANCE ...

Application fields

- Surgery
- Dentistry
- Implantology

Business

- Medicine
- Dental clinics
- Orthopaedics

USP

- can be produced at low cost
- injectable, antiseptic, antimicrobial
- Material is biodegradable

Development status

- First tests at Giessen University Hospital
- Further steps: Approval as medical device and clinical trial

Patent status

EP patent application filed in September 2024, an international PCT application is planned.

ADVANTAGES OVER THE PRIOR ART

With this new preparation, complications can be avoided when placing dental implants and the durability of an implant in the bone can be improved. The bone-regenerating property leads to better durability of the implants in the body and reduces expensive follow-up treatments.

The preparation is sustainable, biodegradable and well tolerated and can be filled directly into the bone defect in the form of a flowable, ready-to-use, antimicrobial paste.

STATE OF THE PRODUCT DEVELOPMENT

Initial tests on cell cultures and animal bones have been carried out and confirm the positive properties. A clinical study on patients is possible and planned. Approval as a medical product is in preparation. So far, the preparation has been produced on a laboratory scale.

MARKET POTENTIAL

The German Society of Implantology confirms that around 1.3 million dental implants are inserted in Germany every year. The trend is rising, as more implants are needed as the population ages.

Market research companies forecast that the global market size for dental implants is expected to grow from USD 4.73 billion (2024) to USD 8.06 billion by 2032. The global market for dental materials is expected to grow by around 5.2% annually until 2027.

COOPERATION OPPORTUNITIES

On behalf of Justus-Liebig-University Giessen, TransMIT GmbH is looking for cooperation partners or licensees for medical approval, clinical trials, sales and further development in Europe, the USA and Asia.

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