

Media release

Leading specialists present scientific findings on enamel matrix proteins in dental tissue engineering

Clinical reports at ADF¹ meeting substantiate that:

- *Enamel matrix proteins in Emdogain® stimulate a much broader spectrum of regenerative activity than first believed*
- *Emdogain® significantly reduces the rate of complications in periodontal regeneration compared with conventional treatment techniques*

Basel, 29 November 2005: At a scientific symposium organized by INSERM² during this year's Congress of the French Dental Association¹ in Paris, international opinion leaders presented and discussed the latest scientific and clinical findings on enamel matrix proteins, which are successfully used to restore the tissues that surround and support teeth. These proteins are the main component of Emdogain® (Enamel Matrix Derivative), an easy-to-apply gel used in tooth preservation because it helps to repair the cementum of the tooth root and the ligaments that attach it to the jawbone, as well as the jawbone itself.

Periodontal disease and its treatment

Most adults are affected by mild to moderate generalized periodontitis while 5-20% of any population suffer from severe forms of the disease³. Periodontitis is one of the most common causes of tooth loss because it destroys the periodontal tissues that are crucial for tooth attachment. Conventional treatment involves surgery to gain direct access to the tooth root for cleaning, after which a membrane is inserted to prevent gingival (gum) tissues from interfering with bone regeneration. This process is known as guided tissue regeneration (GTR). Emdogain obviates GTR with membranes.

Emdogain

When applied to the root surface of the affected tooth after cleaning by scraping, Emdogain stimulates regenerative responses in the surrounding tissues. As reported at the ADF, research has shown that it stimulates local growth-factor secretion and cytokine expression but the exact mechanisms of this activity have yet to be fully understood. In their search for these molecular mechanisms, scientists have found that the regenerative capacity of enamel matrix proteins has not yet been fully exploited. New knowledge about these components of Emdogain appears to be opening up exciting possibilities for biological solutions to clinical problems ranging from wound healing to bone regeneration. This was the focus of the symposium at the ADF.

Scientific highlights

One of the presenters, Dr. Dieter Bosshardt (University of Berne, Switzerland) revealed new scientific findings that further endorse the clinical efficacy observed with Emdogain in periodontal treatment. His results demonstrate that enamel matrix proteins exert numerous effects on different cell types, including epithelial cells, gingival fibroblasts,

¹ Association Dentaire Française (ADF)

² Institut National de la Santé et de la Recherche Médicale

³ Epidemiology of Periodontal Diseases. American Academy of Periodontology report, *J Periodontol* 2005; 76:1406-1419.

periodontal ligament fibroblasts, and osteogenic cells. These cells are involved in the processes of regeneration, wound-healing and defence, and are thus essential for promoting healthy soft-tissue, bone, and tooth-anchoring tissues.

Dr. Carlos Nemkovsky (University of Tel Aviv, Israel) presented extensive preclinical and clinical findings with a special focus on the treatment of advanced periodontal disease in the front region of the upper jaw. His investigations included long-term esthetic outcome and used Emdogain both with and without bone graft material in more than 100 patients. The results demonstrate that Emdogain treatment led to reduced gum tissue recession and, with periodontal reconstruction, preserved gingival architecture in the long term. The study also confirmed the efficacy of Emdogain in treating multiple proximal defects. Dr. Nemkovsky showed that conventional techniques using GTR membranes are associated with complication rates of up to 97%⁴. In stark contrast, no complications were observed with Emdogain treatment, which is much less demanding than GTR and achieves predictable, comparable results.

These were just two of nine presentations by leading experts who reported scientific and clinical results that underscore the clinical benefits of Emdogain in a broad range of applications.

Further information

Abstracts of the presentations at the symposium are available in a virtual media kit on www.straumann.com. Further details will be published in Straumann's customer magazine, *STARGET*.

Emdogain indications

As the approved indications for Emdogain vary according to region, please consult the appropriate full product information.

In the US, Emdogain is intended as an adjunct to periodontal surgery as a topical application onto exposed root surfaces. Emdogain is indicated for the treatment of the following conditions: Intrabony defects due to moderate or severe periodontitis; mandibular degree-II furcations with minimal interproximal bone loss; coronally advanced flap for treatment of gingival recession defects. Emdogain is also indicated for use in a minimally invasive surgical technique in esthetic zones to optimise tissue height for intrabony defects only.

Elsewhere, e.g. in Europe, Emdogain is intended for topical application in conjunction with periodontal surgery to provide for regeneration of tooth support lost to periodontal disease or trauma. Emdogain has been shown to be effective in sites with periodontal pockets more than 6mm associated with vertical bone loss on radiograph greater than 3mm. Emdogain has also been shown to be effective with furcation involvements exceeding 2mm but not through-and-through defects. Emdogain used in recession defects has been shown to offer a potential for improved root coverage compared with the use of a coronally advanced flap alone.

⁴ Sanz et al.: Treatment of intrabony defects with enamel matrix proteins or barrier membranes. Results from a multicenter practice-based clinical trial. *J Periodontol* 2004; 75:726-733

About Straumann

Straumann is a global leader in implant dentistry and dental tissue regeneration. Since its foundation in 1954, the Swiss-based company has been driven by passion for scientific discovery and belongs to the pioneers of modern dental implantology.

Straumann researches, develops, produces and distributes dental implants, instruments and tissue regeneration products. It works closely with the International Team for Implantology (ITI), an independent international network of eminent clinicians and researchers, as well as leading clinics, research institutes and universities.

With its roots in Swiss precision and clinical excellence, the Straumann® Dental Implant System is renowned for its exceptional quality and is one of the most extensively scientifically documented implant systems in the world. Over the past ten years, several million Straumann implants have been placed, providing patients with dental replacement solutions that are widely regarded as the closest thing to natural teeth.

Straumann also develops and manufactures products that help to heal periodontally compromised teeth or to support implant procedures. These include innovative products such as Emdogain®, a convenient protein-based gel which regenerates the periodontal tissue that supports the teeth. Its indications include the treatment of tissue recession due to periodontitis.

In 2004, the Straumann Group generated sales of CHF 420 million of which approximately 6% are re-invested in research and development, making Straumann one of the leading contributors to research and development in the field. With its global business expanding at a compound average rate of 20% over the past 4 years, Straumann has created a number of new employment opportunities, increasing its staff to approximately 1200 employees worldwide.

From its headquarters in Basel, Switzerland, Straumann's products and services are available in more than 60 countries through the company's subsidiaries and broad network of distributors.

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