

FESTEL CAPITAL

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Antibacterial Bone Substitute Material

Summary

Development of an antibacterial, resorbable bone substitute material that is intended to display the well known degradation behaviour of calcium phosphates as well as the biomineralisation effects of bioglasses in combination with an antibacterial modification by elutable metal ions. The production setup is simple and cost effective; commercially available raw materials can be used. A wide variety of chemical modifications is possible (biofunctionalisation, antibacterial modification).

Industrial partners are sought for various possible commercialisation options.

Background

FESTEL CAPITAL is supporting a German university to commercialise an innovative porous material with bimodal pore structure as well as its production process.

Description

The patented bone substitute material is produced by a modified sol-gel process and is completely free from organic components during the whole production process, so human antibody and immune reactions are minimised. Shaping can be done by slip casting or extrusion from a suspension. The subsequently dried material can be milled to granules or, in the case of a preshaped green body, sintered (700 °C) and used as partially load-bearing bone substitute material (see Fig. 1). Even the temperature treated material shows a high porosity and specific surface area (see Fig. 2).



Fig. 1:

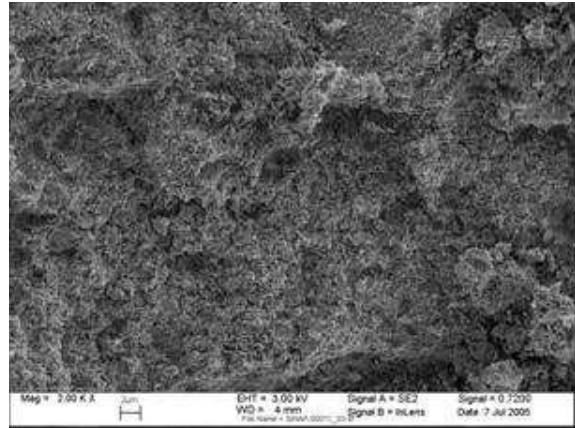


Fig. 2

Application areas

- Filling of bone defects (orthopaedics, dentistry)
- Kyphoplasty, spineoplasty
- Healing of infections in bone surroundings (antibacterial, drug delivery)

Advantages

Advantages this process offers include the following:

- Simple production setup and cost effective raw materials (commercially available)
- Raw materials have an approval for medical applications in Germany and FDA approval in the field of foodstuff (USA) - a straightforward approval for the whole material seems to be possible
- Wide spectra of chemical modifications possible (biofunctionalisation, antibacterial modification)
- High nano- (< 20 nm) and microporosity - can be used for drug delivery
- Various forms (granules, porous bulk materials, dense bulk materials)

Investment Opportunity

The aim of FESTEL CAPITAL is to commercialise this innovative antibacterial bone substitute material. In the search for industrial partners different commercialisation options, such as out-licensing or a sale of all relevant intellectual property and know-how, are possible. Detailed information can be provided after the signing of a confidentiality agreement.

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About FESTEL CAPITAL

FESTEL CAPITAL is an advisory and investment firm focusing on the commercialisation of technologies in the areas of energy, environment, health, materials and nutrition.

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