A Novel Hybrid System for Fracture Fixation

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Technology description

The Technology

Intramedullary nail (IM nail) has long been used to treat long fractures. It is a metal rod inserted into the medullary cavity of bone. In order to enhance the function of the current IM nails, a hybrid system is developed with self-locking Mg-button to be plugged onto the specifically designed window of conventional IM nail wall. It is an osteogenic Magnesium (Mg)-containing system with dynamic and biological fixation with healing enhancement, especially desirable for fixation of difficult osteoporotic fractures.

Our recent studies have shown that implantation of Mg-based alloy into the distal femur of animals can significantly promote osteogenesis, resulting in increased thickness of cortical bone and the formation of new bone. The osteogenesis effect is form the slow release of Mg^{2+} that triggers local responses essential for new bone formation. We designed an innovative intramedually nail containing Mg (Mg-IMN) for the fixation of long bone fracture in rat model and results are promising that the Mg-IMN system can significantly facilitate the biological as well as mechanical repair of challenging osteoporotic fracture, which will be of great potential for clinical applications.

Commercialization

The technology is now available for licensing. In order to fully realize the benefit of the technology, we expect substantial investment is necessary to enable further research and development. In addition to the financial commitment, the licensee is expected to have the appropriate expertise as well as plans in marketing and strategizing the end product to ensure successful transfer of the technology to the society. Previous or existing business involvement and experience in this area is a plus.

This invitation of expression of interest is without prejudice. We also stress that this invitation is not a tender, and the University is not bound to accept any offer, or to accept the highest monetary offer, as there are additional considerations (such as the widest possible benefit to the community) that we, as a public institution, will need to take into consideration.

Institution

City University of Hong Kong

Inventors

Ning Tang
Wing Ho CHAU
Department of Orthopaedics and Traumatology
Yuk Sun Cheng
Department of Orthopaedics and Traumatology
Ling QIN
Department of Orthopaedics and Traumatology

联系我们

叶先生

电 话：021-65679356
手 机：13414935137
邮 箱：yeyingsheng@zf-ym.com