

Global COE Program

グローバルCOEプログラム

・国際的に卓越した教育研究拠点形成のための重点的支援・

第40回グローバルCOE海外研究者講演会

歯と骨の分子疾患科学の国際教育研究拠点
ーデント・メドミクスのインテリジェンスハブー

講師: Prof. Besim Ben-Nissan

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日時: 2月24日(木) 17:30 - 19:00

場所: 歯学部校舎棟 1階 第一講義室

演題: “Can coral sand be used as calcium phosphate drug
delivery micro system for bone regeneration and
repair?”

Pharmaceutical drugs to treat metabolic bone diseases lead to needless side effects for the patient as the drug is dispersed too widely throughout the body. Therefore, researchers are striving to engineer devices that specifically target to diseased tissue or to the implant area and release the encapsulated drug in a highly regulated way.

The development of fully resorbable bone-filling biomaterials holding a drug should offer a coupled therapeutic approach of drug release and bone augmentation in a simple one-step process.

To this end the biomaterial itself needs custom modification to increase the length of time at which it is released, while at the same time inducing desirable host cell responses and preventing bacterial infection. Turning to nature for inventive solutions as templates can help in these efforts.

We demonstrate the potential of coral shells with specific microspherical designs to offer all these desired functions for the targeted delivery of Bisphosphonate (pamidronate) and an antibiotic (Gentamicin), due to its unique structure and architecture, which are difficult if not -as yet- impossible to emulate in the laboratory.