

## 新型可降解钙磷骨水泥多孔支架研究

魏杰, 刘昌胜, 洪华, 袁媛, 陈芳萍

华东理工大学生物材料研究所教育部生物材料工程研究中心, 上海 200237

收稿日期 2005-7-4 修回日期 2005-10-26 网络版发布日期 接受日期

**摘要** 采用一种特殊的方法制备了孔径、孔隙率和孔形状可控的多孔羟基磷灰石骨水泥支架。

材料的抗压强度可达4MPa, 孔隙率可达70%, 孔与孔之间互相贯通, 大孔壁富含微孔。

细胞在材料表面黏附铺展且增殖良好,

体外模拟实验显示材料的降解速度随孔隙率的增加和Ca/P比的降低而加快,

多孔支架有优良的生物降解性和生物相容性。该材料可用于修复骨组织缺损和作为支架材料用于组织工程。

**关键词** [多孔支架](#) [磷酸钙骨水泥](#) [生物降解性](#) [生物相容性](#)

分类号 [TB383](#)

## Novel Biodegradable Scaffold of Calcium Phosphate Cement

WEI Jie, LIU Chang-Sheng, HONG Hua, YUAN Yuan, CHEN Fang-Ping

Engineering Research Center for Biomedical Materials of Ministry of Education Institute of Biomaterials, East China University of Science and Technology, Shanghai 200237, China

**Abstract** A novel porous scaffold of calcium phosphate cement with porosity-controllable, pore size-controllable and morphology-controllable was prepared and cell culture with scaffold was studied, also, the biodegradation of the porous scaffold in SBF was investigated. The results reveal that the compressive strength of the porous bone cement can reach 4MPa, the porosity of the scaffold can reach 70%, abundant micropores are on the wall of the macropores and the pores are interconnected with each other, the cultural cell are attached, dispersed and preferentially proliferated on the surface of the scaffolds materials. The biodegradation ratio increases with the increasing of porosity and decreasing of Ca/P ratio of the calcium phosphate cement. The scaffolds not only have good biocompatibility but also biodegradation. The novel new type of biodegradable Ca-P materials can be used as scaffolds for bone defect repair and tissue engineering.

**Key words** [porous scaffold](#) [calcium phosphate cement](#) [biodegradation](#) [biocompatibility](#)

DOI:

通讯作者 刘昌胜 [changsheng\\_liu@163.com](mailto:changsheng_liu@163.com)

扩展功能

### 本文信息

▶ [Supporting info](#)

▶ [PDF\(1325KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

### 服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

### 相关信息

▶ [本刊中 包含“多孔支架”的  
相关文章](#)

▶ [本文作者相关文章](#)

- [魏杰](#)
- [刘昌胜](#)
- [洪华](#)
- [袁媛](#)
- [陈芳萍](#)