

The Establishment of Calvarial Suture-Bony Composite Defects in Rats: A Standardized Model for Suture-Regenerative Therapy Investigation

Jiayi Wu^{1,2}, Changhao Yu^{1,2}, Chuyi Han¹, Feifei Li¹, Haisheng Wang¹, Bei Yin^{1,2}

¹State Key Laboratory of Oral Diseases & National Center for Stomatology & National Clinical Research Center for Oral Diseases, West China Hospital of Stomatology, Sichuan University ²Department of Endodontics, West China Hospital of Stomatology, Sichuan University

Corresponding Author

Bei Yin

beiyin@hotmail.com

Citation

Wu, J., Yu, C., Han, C., Li, F., Wang, H., Yin, B. The Establishment of Calvarial Suture-Bony Composite Defects in Rats: A Standardized Model for Suture-Regenerative Therapy Investigation. *J. Vis. Exp.* (207), e66417, doi:10.3791/66417 (2024).

Date Published

May 10, 2024

DOI

10.3791/66417

URL

jove.com/video/66417

Materials

Name	Company	Catalog Number	Comments
4% paraformaldehyde	Biosharp	BL539A	
5% Iodophor solution	Chengdu Jinshan Chemical Reagent Co., Ltd.	None	
75% Ethanol	Chengdu Jinshan Chemical Reagent Co., Ltd.	None	
Cotton balls	Haishi Hainuo Group Co., Ltd.	None	
Cotton swabs	Lakong Medical Devices Co.,	None	
Curved forceps	Chengdu Shifeng Co., Ltd.	None	
Curved needles ($\Delta 1/2$ 6 \times 17)	Chaohu Binxiang Medical Equipment Co., Ltd.	None	
Dataviewer and Ctan software for residual defect volume assessments	Bruker	None	
Dental low-speed round burs	Dreybird Medical Equipment Co., Ltd.	RA3-012 RA1-008	
Disposable sterile scalpel	Hangzhou Huawei Medical Supplies Co., Ltd.	None	
Disposable syringes (22 G)	Chengdu Shifeng Co., Ltd.	SB1-089(IX)	
Electric shaver	JASE	BM320210	
Ethylene Diamine Tetraacetic Acid (EDTA)	BioFroxx	1340GR500	
Hematoxylin and Eosin Stain Kit	Biosharp	BL700B	
Irrigation needle (23 G)	Sichuan New Century Medical Polymer Products Co., Ltd.	None	
Low-speed handpiece	Guangzhou Dental Guard Technology Co., Ltd.	None	
Masson's Trichrome Stain Kit	Solarbio	G1340	
Medical non-woven fabrics	Henan Yadu Industrial Co., Ltd.	None	
Micro-computed tomography (μ CT)	Scanco Medical AG	μ CT45	

Mimics 20.0 for cross-sectional images	Materialise	None	
Needle holders	Chengdu Shifeng Co., Ltd.	None	
Periosteal elevator	Chengdu Shifeng Co., Ltd.	None	
Saline solution	Sichuan Kelun Pharmaceutical Co., Ltd.	None	
Scanco medical visualizer software for 3D image reconstruction	Scanco Medical AG	None	
SPSS Statistics 20.0 for statistical analysis	IBM	None	
Sprague-Dawley rats	Byrness Weil Biotech Ltd	None	
Straight Scissors	Chengdu Shifeng Co., Ltd.	None	
Surgical Motor	MARATHON	N3-140232	
Surgical sutures (4-0)	Yangzhou Fuda Medical Devices Co., Ltd.	None	