

# Isolation and Cultivation of Mandibular Bone Marrow Mesenchymal Stem Cells in Rats

Yueyang Hong<sup>\*1</sup>, Hongyuan Xu<sup>\*1</sup>, Yiling Yang<sup>1</sup>, Siru Zhou<sup>1</sup>, Anting Jin<sup>1</sup>, Xiangru Huang<sup>1</sup>, Qinggang Dai<sup>2</sup>, Lingyong Jiang<sup>1</sup>

<sup>1</sup>Center of Craniofacial Orthodontics, Department of Oral and Cranio-maxillofacial Science, Ninth People's Hospital, Shanghai Jiaotong University School of Medicine, Shanghai Key Laboratory of Stomatology & Shanghai Research Institute of Stomatology, National Clinical Research center of Stomatology

<sup>2</sup>The 2nd Dental Center, Ninth People's Hospital, Shanghai Jiaotong University School of Medicine, Shanghai Key Laboratory of Stomatology & Shanghai Research Institute of Stomatology, National Clinical Research center of Stomatology

\* These authors contributed equally

## Corresponding Authors

<b>Yueyang Hong</b> 1191217254@qq.com	<b>Qinggang Dai</b> daiqinggang@126.com	<b>Lingyong Jiang</b> 247416218@qq.com
--	--	---

## Citation

Hong, Y., Xu, H., Yang, Y., Zhou, S., Jin, A., Huang, X., Dai, Q., Jiang, L. Isolation and Cultivation of Mandibular Bone Marrow Mesenchymal Stem Cells in Rats. *J. Vis. Exp.* (), e61532, doi:10.3791/61532 (2020).

## Date Published

August 25, 2020

## DOI

10.3791/61532

## URL

jove.com/video/61532

## Materials

Name	Company	Catalog Number	Comments
0.25% Trypsin-EDTA(1X)	Gibco	25200072	
10cm culture dish	Corning		
acutenaculum			
Adipogenic differentiation medium	Cyagen biosciences inc.	MUBMX-90031	
Alcian Blue	Beyotime Biotechnology		
Alizarin red	Sigma-Aldrich	A5533	
Alkaline Phosphatase Color Development Kit	Beyotime Biotechnology	C3206	
alpha-Minimum essential medium	GE Healthcare HyClone Cell Culture	SH30265.01B	
Anti -CollagenII Rabbit pAb	Abcam	ab34712	
Antibodies against CD16/CD32			
Antifade Mounting Medium with DAPI	Beyotime Biotechnology	P0131	
APC anti-mouse/rat CD29 Antibody	biolegend inc	102215	
Biosafety cabinet	Esco	AC2-4S8-CN	
CD45 Monoclonal Antibody (OX1), PE, eBioscience	Invitrogen	12-0461-82	
CD90.1 (Thy-1.1) Monoclonal Antibody (HIS51), FITC, eBioscience	Invitrogen	11-0900-85	
Centrifuge	cence	L500	
Chondrogenesis differentiation medium	cyagen biosciences inc.		
Confocal laser scanning microscope	Zeiss	LSM880	
Countess II FL Automated Cell Counter	Invitrogen	AMQAF1000	
Crystal Violet Staining Solution	Beyotime Biotechnology	C0121	
Fetal Bovine Serum	GE Healthcare HyClone Cell Culture	SH30084.03	

Goat Anti-Rabbit IgG H&L (Alexa Fluor 488)	abcam	ab150077	
Incubator	Esco	CCL-170B-8	
Inverted microscope	olympus	CKX53	
Magzol reagent(Trizol reagent)	Magen		
micropipettor	Eppendorf		
Oil Red O			
Osteogenic differentiation medium	cyagen biosciences inc.	MUBMX-90021	
Penicillin-Streptomycin	Gibco	15070063	
Phosphate-buffered saline(1X)	Gibco	20012027	
PrimeScript RT Master Kit	TakaRa Bio Inc	RR036A	
Proteinase K	Sigma-Aldrich	P6556	
QuickBlock Blocking Buffer	Beyotime Biotechnology	P0260	
scissor			
SYBR1 Premix	TakaRa Bio Inc		
Toluidine Blue	Beyotime Biotechnology		
Trypan Blue Solution, 0.4%	Gibco	15250061	