## **Support Information**

## Injectable photocuring silk fibroin-based hydrogel constructs

## antioxidant microenvironment for skin repair

Tangjinhai Liu <sup>a,b,1</sup>, Yuxiang Wang <sup>a,b,1</sup>, Jingyi Liu <sup>a,b</sup>, Xiaowen Han <sup>a,b</sup>, Yaping Zou <sup>a,b</sup>, Peilei Wang <sup>a,b</sup>, Ruiling Xu <sup>a,b</sup>, Lei Tong <sup>a,b</sup>, Junli Liu <sup>c,\*</sup>, Jie Liang <sup>a,b,d</sup>, Yong Sun <sup>a,b</sup>, Yujiang Fan <sup>a,b,\*</sup>, Xingdong Zhang <sup>a,b</sup>

<sup>a</sup> National Engineering Research Center for Biomaterials, Sichuan University, 29 Wangjiang Road, Chengdu, Sichuan, 610064, PR China

<sup>b</sup> College of Biomedical Engineering, Sichuan University, 29 Wangjiang Road, Chengdu, Sichuan, 610064, PR China

<sup>c</sup> Department of Orthopedics, Chongqing General Hospital, No. 118 Xingguang Avenue, Liangjiang New District, Chongqing, 401147, PR China

<sup>d</sup> Sichuan Testing Center for Biomaterials and Medical Devices, Sichuan University, 29 Wangjiang Road, Chengdu, 610064, PR China

<sup>1</sup> These authors contributed equally to this work.

## \* Corresponding author

E-mail addresses: 18271929219@163.com (J. Liu), fan\_yujiang@scu.edu.cn (Y. Fan).



Fig. S1. The synthetic pathway of MASF.



Fig. S2. The synthetic pathway of DMA.



Fig. S3. The <sup>1</sup>H NMR spectrum of SF and MASF.



Fig. S4. The <sup>1</sup>H NMR spectrum of DOPA and DMA.



Fig. S5. The FTIR spectrum of SF and MASF.



Fig. S6. The FTIR spectrum of DOPA and DMA.



Fig. S7. Swelling ratio of hydrogels in 12 hours.



**Fig. S8.** Representative images of the closed wound for L929 cells in  $H_2O_2$ -injured in SF-g-LDA and SF-g-HAD.

Groups	MASF (mg/mL)	DMA (mg/mL)
MASF	150	0
SF-g-LDA	147.5	2.5
SF-g-MDA	145	5
SF-g-HDA	142.5	7.5
SF-g-SDA	140	10

 Table S1. Components of different hydrogels.