

## Electronic Supporting Information

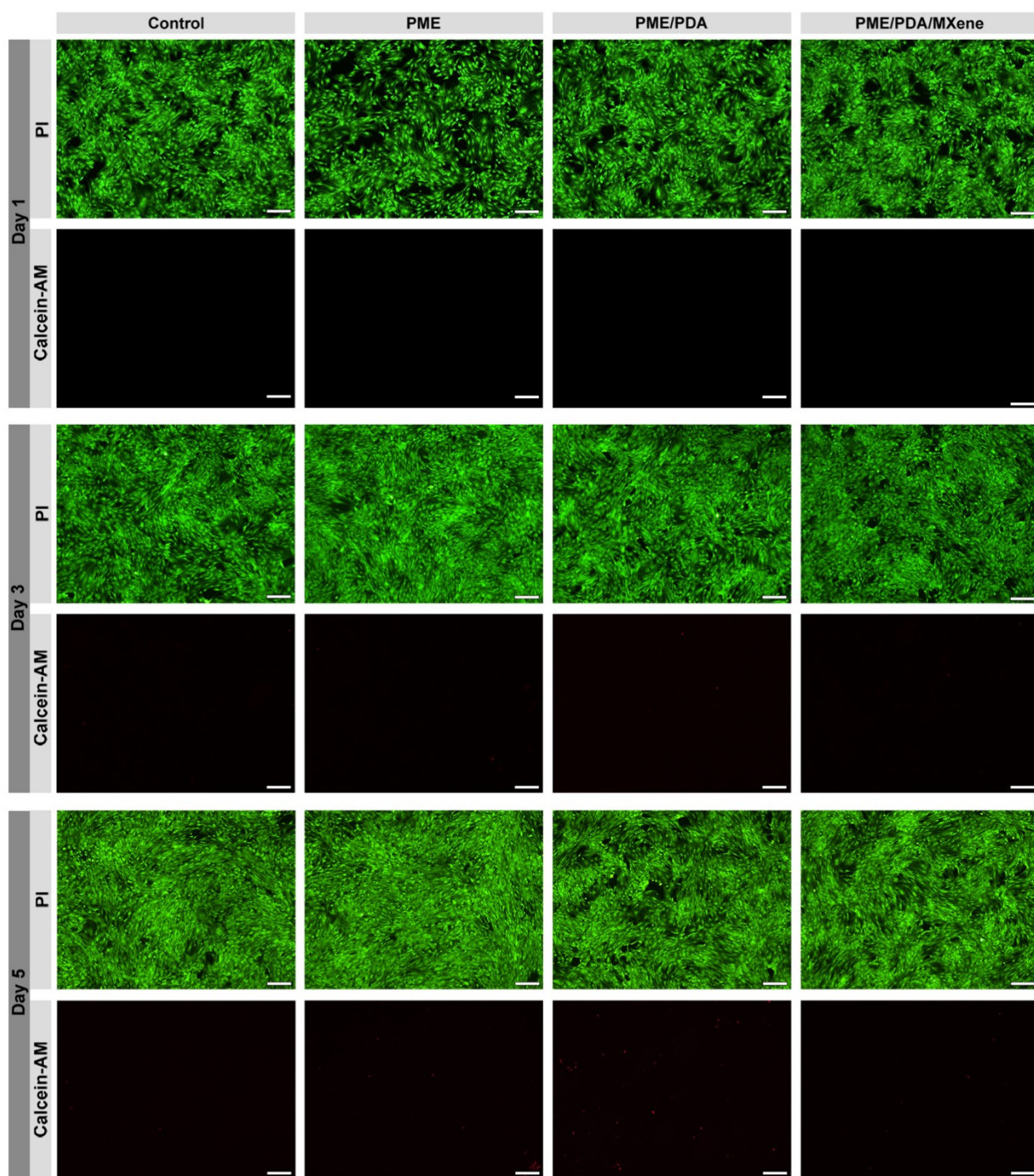
### **A Ti<sub>3</sub>C<sub>2</sub> MXene-integrated Near-Infrared-Responsive Multifunctional Porous Scaffold for Infected Bone Defect Repair**

Linli Zhang<sup>a</sup>, Hui Zhang<sup>a</sup>, Hongling Zhou<sup>a</sup>, Yi Tan<sup>b</sup>, Zhengmin Zhang<sup>c</sup>, Wei Yang<sup>\*c</sup>, Lixing Zhao<sup>\*a</sup>,  
Zhihe Zhao<sup>\*a</sup>

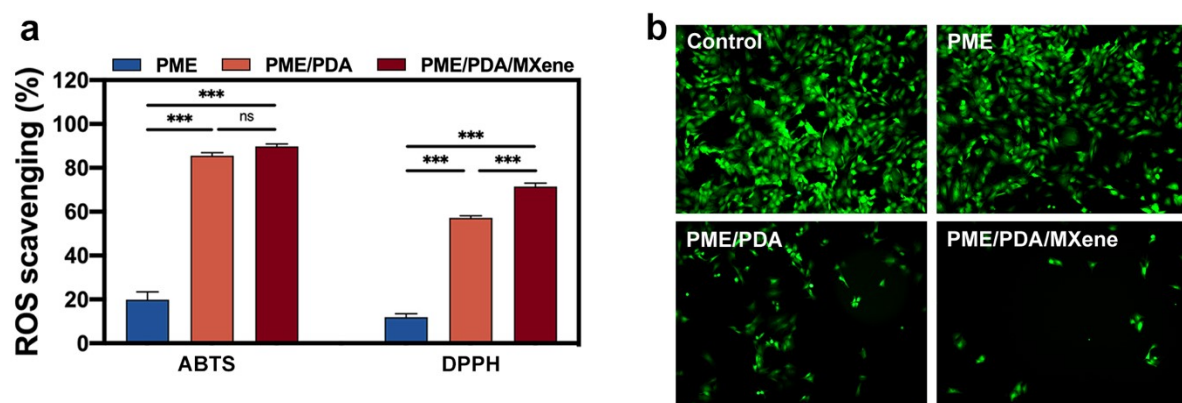
<sup>a</sup> *State Key Laboratory of Oral Diseases & National Center for Stomatology & National Clinical Research Center for Oral Diseases & Other Research Platforms, Department of Orthodontics, West China Hospital of Stomatology, Sichuan University, Chengdu, 610041, China*

<sup>b</sup> *State Key Laboratory of Oral Diseases & National Center for Stomatology & National Clinical Research Center for Oral Diseases & Other Research Platforms, Department of Endodontics, West China Hospital of Stomatology, Sichuan University, Chengdu, 610041, China*

<sup>c</sup> *College of Polymer Science and Engineering, State Key Laboratory of Polymer Materials Engineering, Sichuan University, Chengdu, 610065, China*

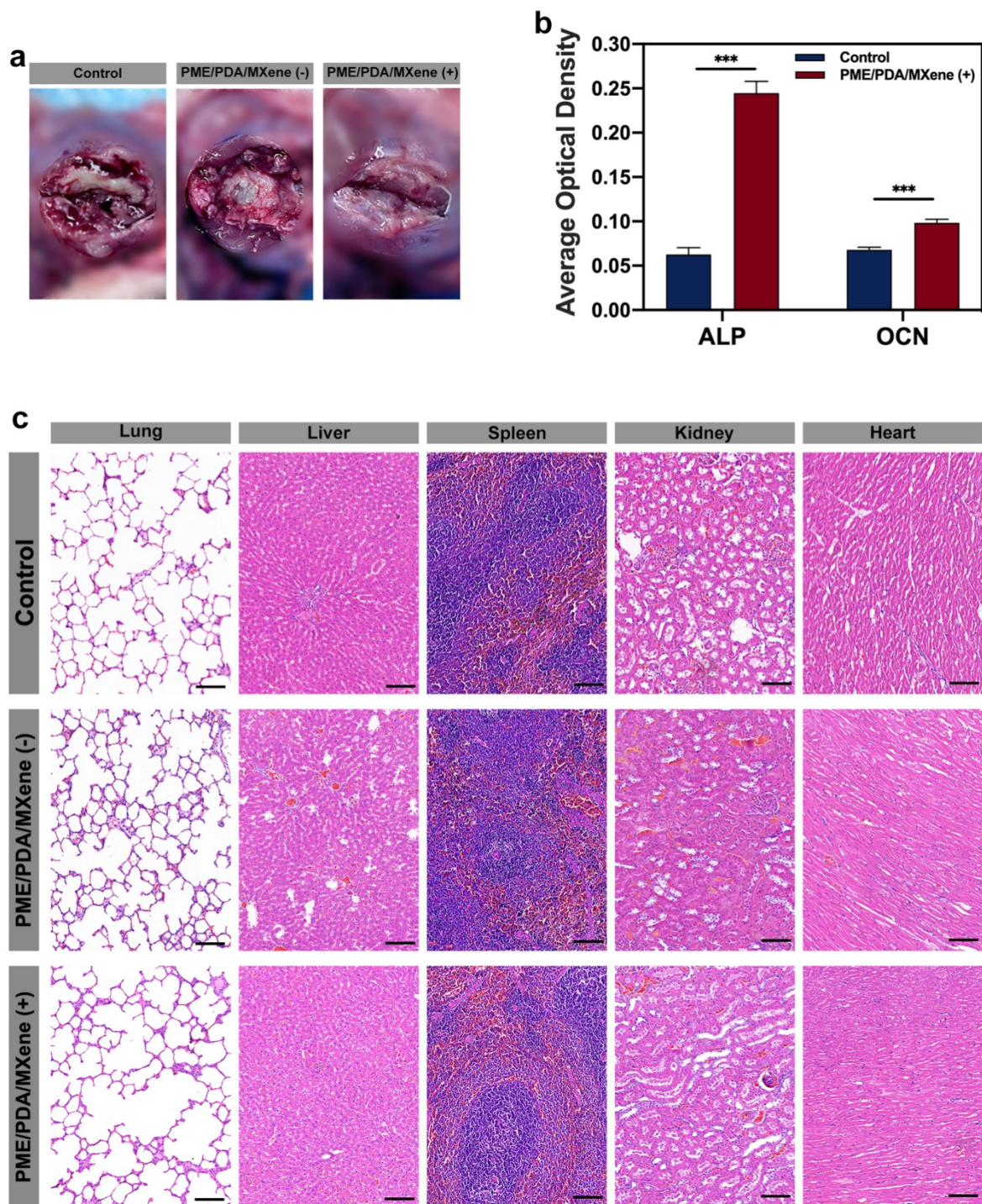


**Figure S1.** Live/dead fluorescent staining images of rBMSCs on different groups at days 1, 3 and 5 through a fluorescence microscope. (Scale bar = 250  $\mu\text{m}$ .)



**Figure S2.** ROS scavenging capacities of the PME, PME/PDA, and PME/PDA/MXene scaffolds. (a) ABTS and DPPH free radical scavenging capacities of various scaffolds. (b) Fluorescence images of ROS scavenging of rBMSCs incubated with different scaffolds. \*\*\* represents  $P < 0.001$ .





**Figure S3.** (a) Gross photographs of the control group, the PME/PDA/MXene (-) group and the PME/PDA/MXene (+) group after implantation for 1 week. (b) The quantitative results of average optical density (AOD) from IHC results of the control group and the PME/PDA/MXene (+) group after implantation for 8 weeks. (c) H&E staining results of the main organs (heart, liver, spleen, lung, and kidney) at the 8th week post-operation. (Scale bar = 100  $\mu$ m.) \*\*\* represents  $P < 0.001$ .