Support information for

## Cellulose-Based Self-healing Hydrogel through Boronic Ester Bond with Excellent Biocompatibility and Conductivity

Heng An,<sup>a</sup> Yunyi Bo, <sup>b</sup> Danyang Chen,<sup>a</sup> Yong Wang,<sup>c</sup> Haijun Wang,<sup>a</sup> Yingna He,<sup>b\*</sup> Jianglei Qin<sup>a,c\*</sup> <sup>a</sup>College of Chemistry and Environmental Science, Hebei University, Baoding City,Hebei Province 071002, China; qinhbu@iccas.ac.cn (J. Q.)

<sup>b</sup>Hebei Key Laboratory of Chinese Medicine Research on Cardio-Cerebrovascular Disease, Pharmaceutical College, Hebei University of Chinese Medicine, Shijiazhuang City, Hebei Province 050200, China

<sup>c</sup>Key Laboratory of Pathogenesis mechanism and control of inflammatory-autoimmune diseases in Hebei Province, Hebei University, Baoding City, Hebei Province 071002, China



Figure S1. UV absorbance of CMC-B(OH)<sub>2</sub> at various concentrations.



Figure S2. TGA curves of the hydrogel (2%) and its precursors.



Figure S3. The strain scan of the 2/1 hydrogels with (a) 2% and (b) 1% gelator concentration.



Figure S4. The comparison of the 2% hydrogel with 1/1 ratio before and after stretching.

<ul> <li>for all for all for all for all for opplete</li> <li>for the product of trime and opplete</li> <li>for the product of trime also opplete</li> </ul>	(Or MC' a high des Williams of thirtosan. Seves states act a high des Williams of the second a high des act a second a s
arting materia his purpose, w iich facil- s us chit ch dur the TBDMS- ch the TBDMS- ch the TBDMS- ch icus studies a icacv of chitos icus studies a icacv of chitos icus studies a reacv of	n. also and sign as a so and sign as a so a so a sign as a so a so a sign as a so

Figure S5. Hydrogels self-healed from injected particles with various shapes for 10 min.



Figure S6. Phase separation of the hydrogel after addition of HCl.



Figure S7. The skin stuck hydrogel can attach onto the skin and removed easily without any residue.