

### **Description of Additional supplementary files**

**Supplementary Data 1** : The lists of total proteins contained in HEM samples derived from porcine A#1, A#2, A#3, B, and C that were detected by proteomic analysis.

**Supplementary Movie 1** : The movie showing synchronized contractions of spontaneously beating human cardiac tissue (HEM-Cf group) on day 14 after fabrication.

**Supplementary Movie 2** : The movie showing synchronized Ca<sup>2+</sup> transients of spontaneously beating human cardiac tissue (HEM-Cf group) on day 14 after fabrication.

