Supporting Information

New MOF@bioactive glass composite reinforced with silver nanoparticles - a new approach to designing antibacterial biomaterials

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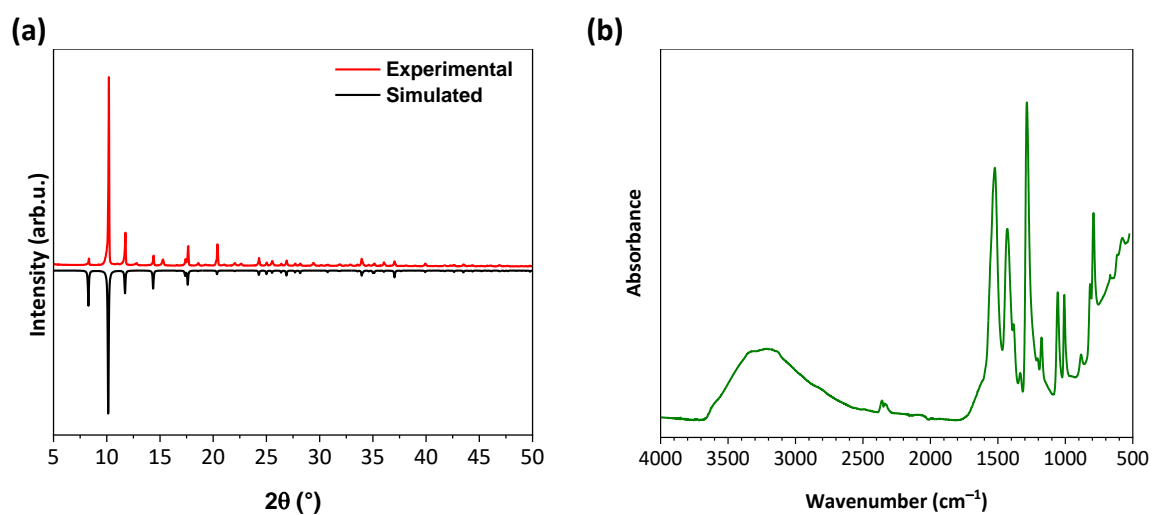[b] Faculty of Chemistry, University of Wrocław, F. Joliot-Curie 14, 50-383, Wrocław, Poland.

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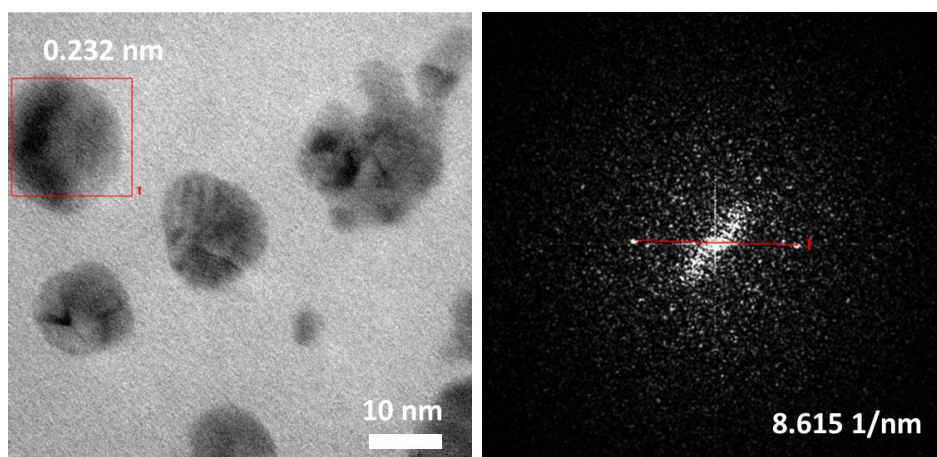
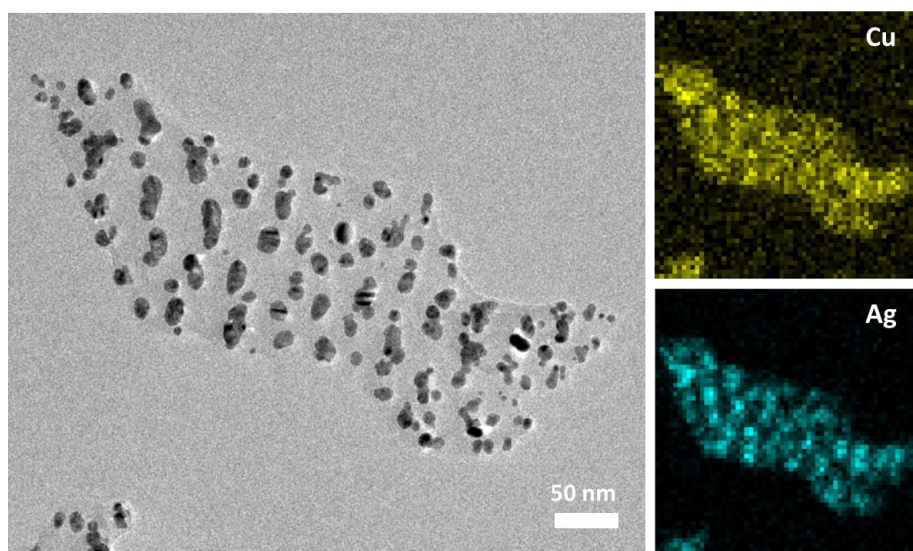**Table of contents**

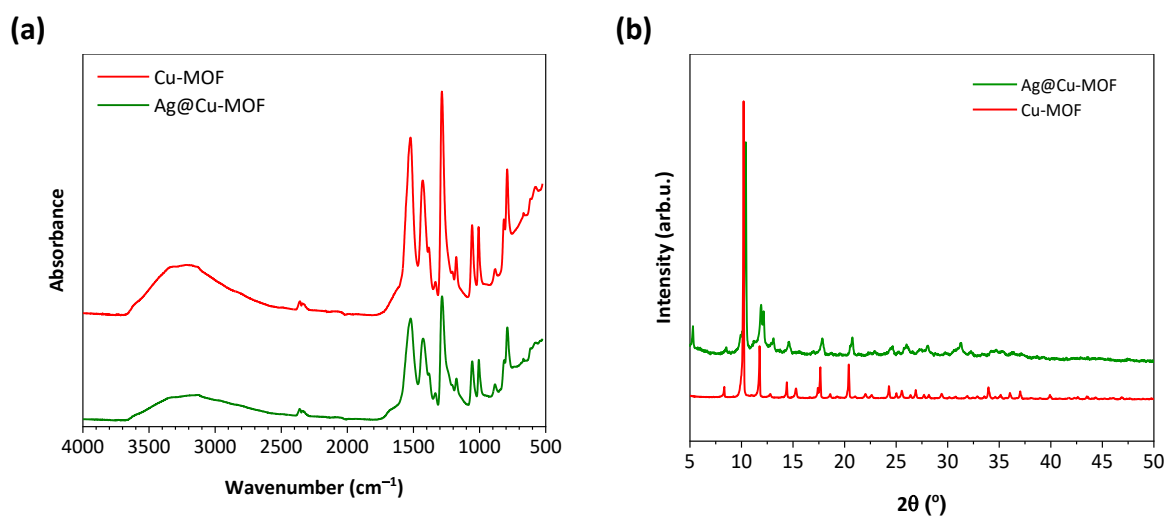**Fig. S1** Photograph of BG (left) and Ag@Cu-MOF@BG (right) discs.

(a)

(b)

Fig. S2 PXRD (a) and ATR-FTIR spectrum (b) of $NH_4[Cu_3(\mu_3\text{-OH})(\mu_3\text{-4-carboxypyrazolato})_3$ (Cu-MOF).
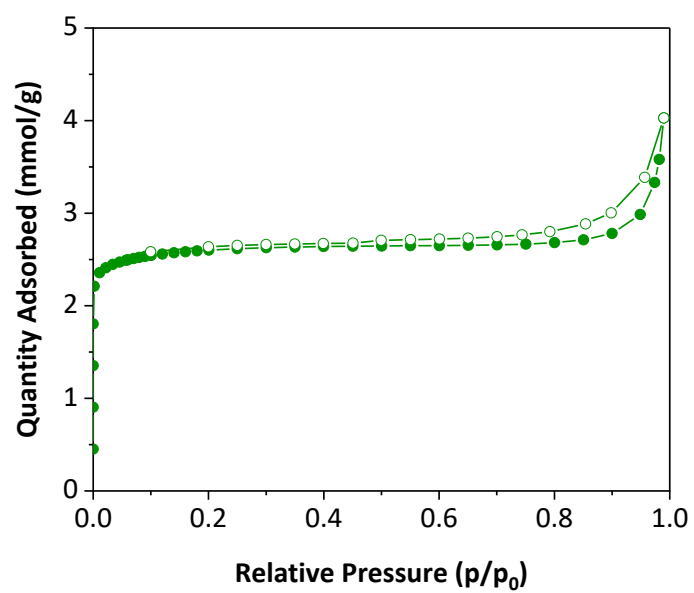
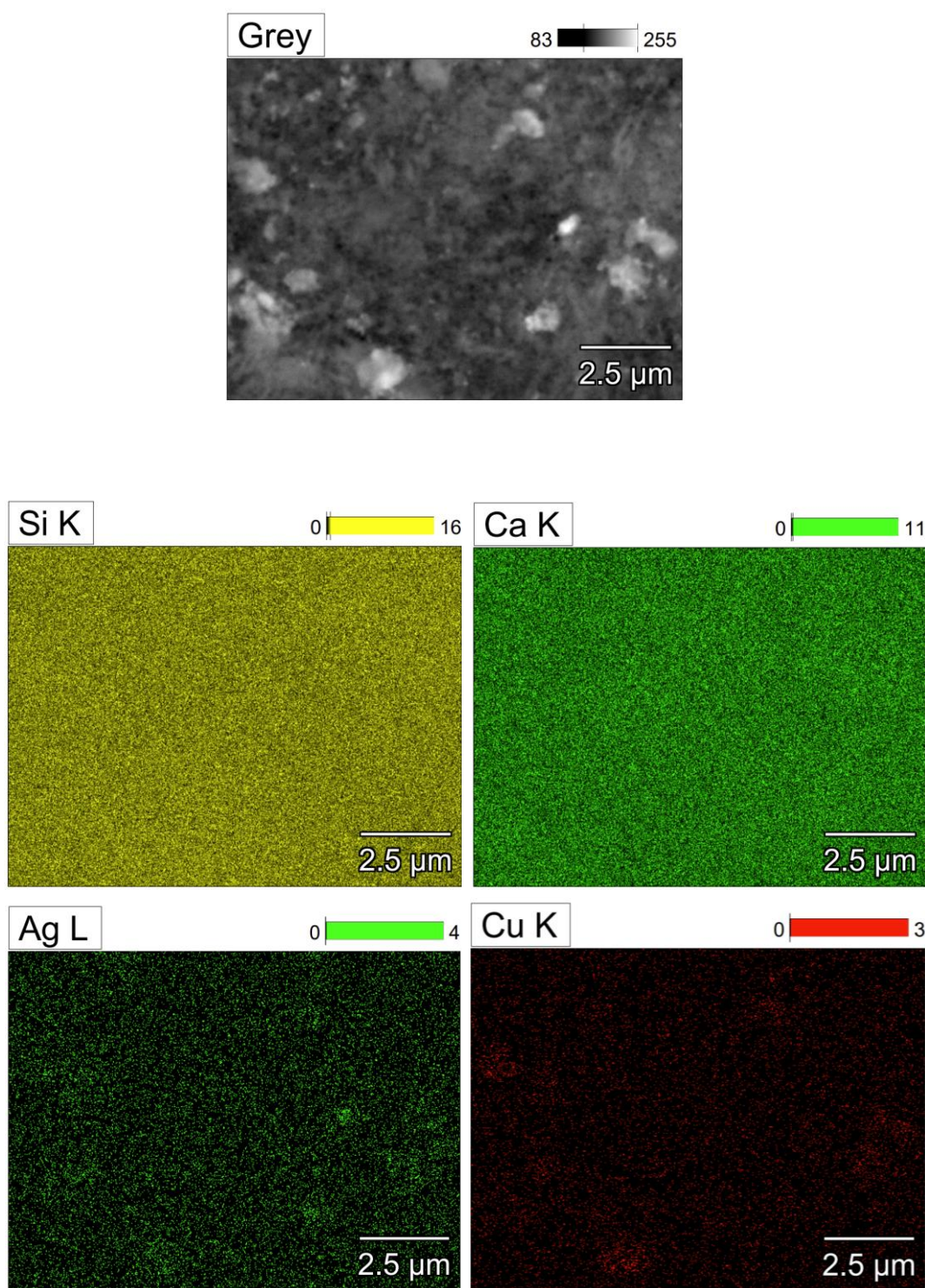**Fig. S3** TEM image of Ag@Cu-MOF with FFT pattern of the selected red-colored region.

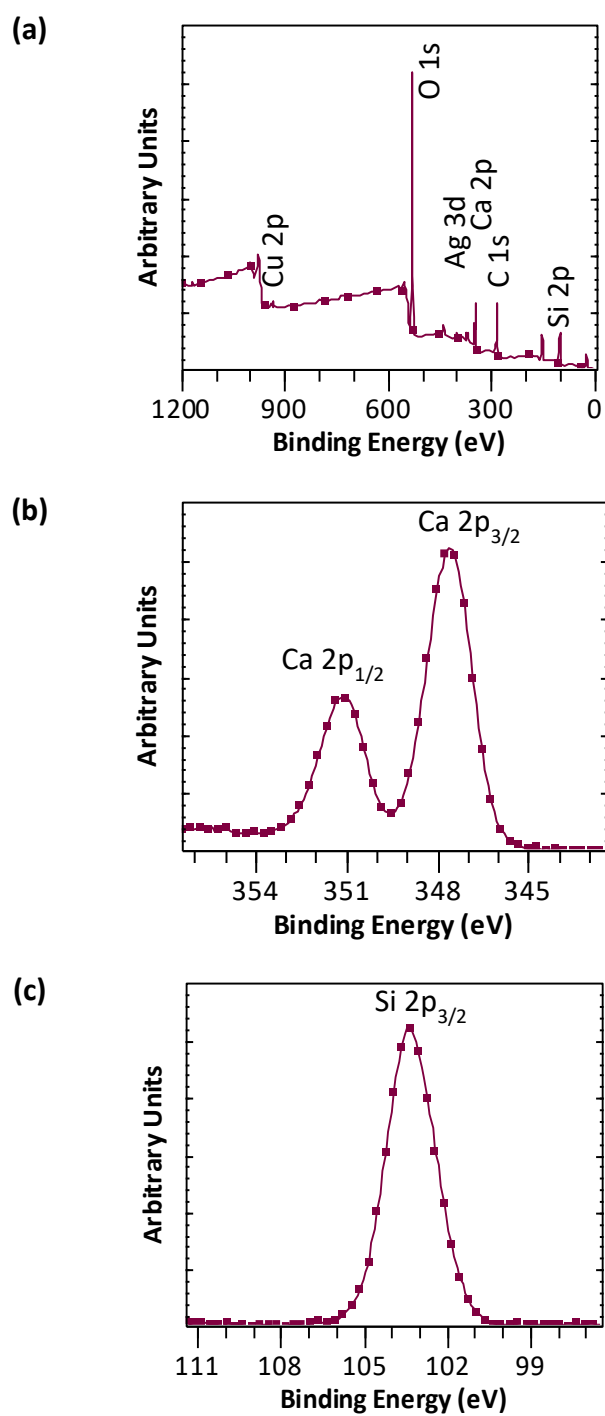**Fig. S4** TEM image and EDX mapping analysis of Ag@Cu-MOF.

(a)

(b)

Fig. S5 ATR-FTIR spectra (a) and PXRD (b) of Cu-MOF and Ag@Cu-MOF.

Fig. S6 N$_2$ adsorption (filled symbols) and desorption (empty symbols) isotherm measured at 77 K for Ag@Cu-MOF.
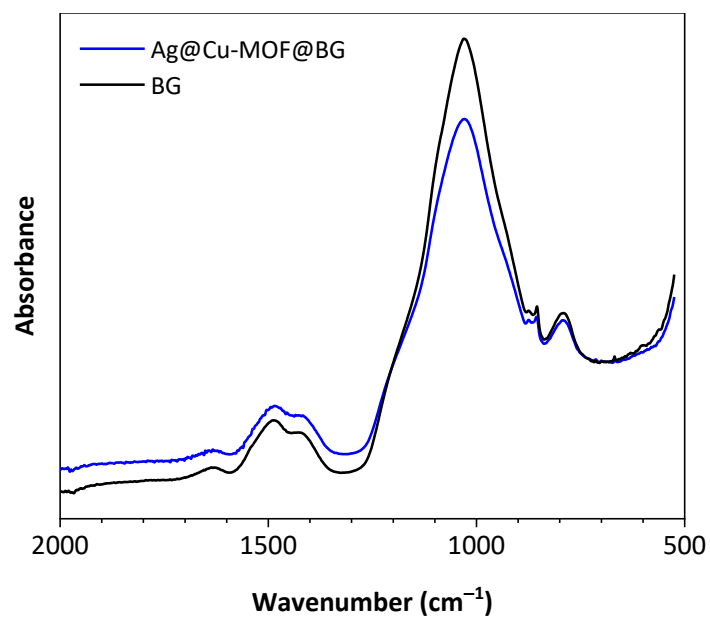
Fig. S7 SEM-EDS elemental mapping of Ag@Cu-MOF@BG.
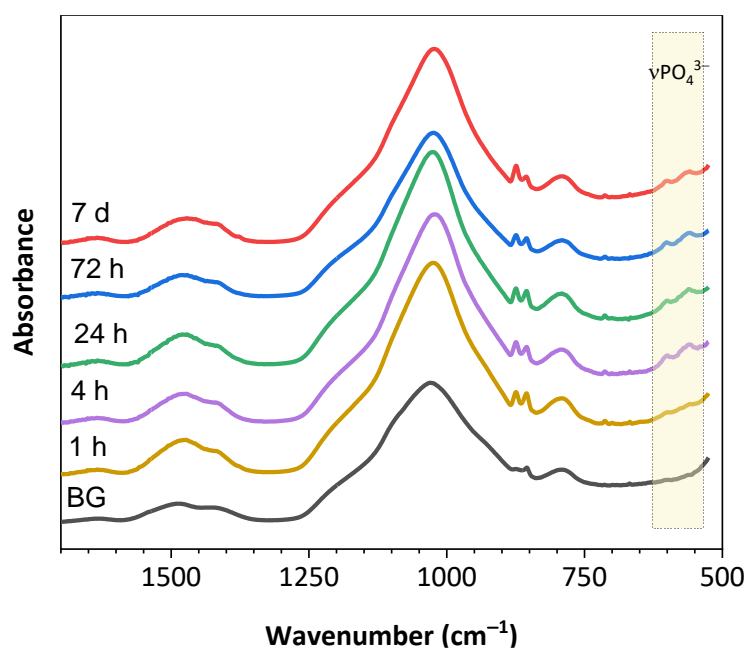
(a)

(b)

(c)

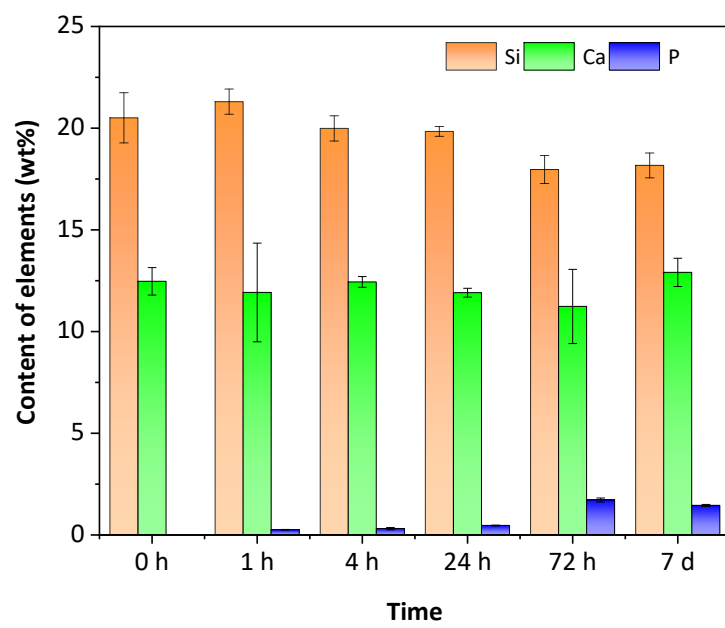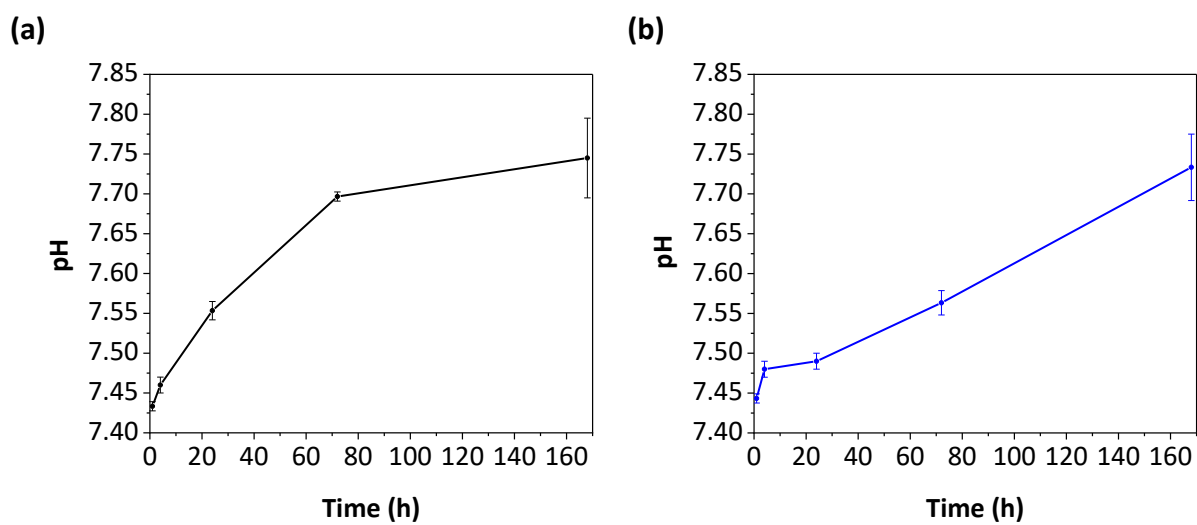**Fig. S8** XPS survey spectrum of Ag@Cu-MOF@BG (a) and high-resolution XPS spectra of Ca 2p (b) and Si 2p (c).

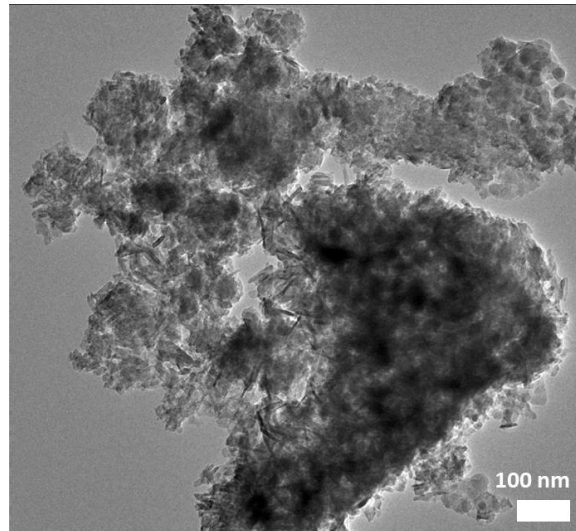**Fig. S9** ATR-FTIR spectra of BG and Ag@Cu-MOF@BG.

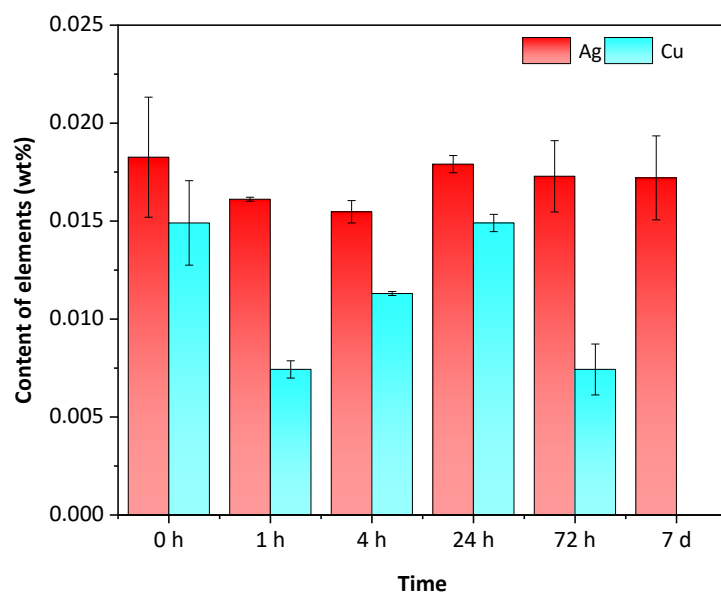**Fig. S10** ATR-FIR spectra of BG before and after immersion in DPBS (pH 7.4, 37 $^{\circ}$C, 1 hour - 7 days).

Fig. S11 Analysis of the composition of BG after the bioactivity test monitored by ICP-OES.

(a)

(b)

Fig. S12 Changes in the pH value of the DPBS solution after immersion of BG (a) and Ag@Cu-MOF@BG (b) (37 °C, 0-7 days).

Fig. S13 TEM image of BG after the 7th day of the bioactivity test.

Fig. S14 Analysis of the content (wt%) of Ag and Cu in Ag@Cu-MOF@BG after the bioactivity test monitored by ICP-OES.