

SUPPORTING INFORMATION

**Metal-organic framework in L-arginine copper(II) ions polymer:
structure, properties, theoretical studies and microbiological
activity**

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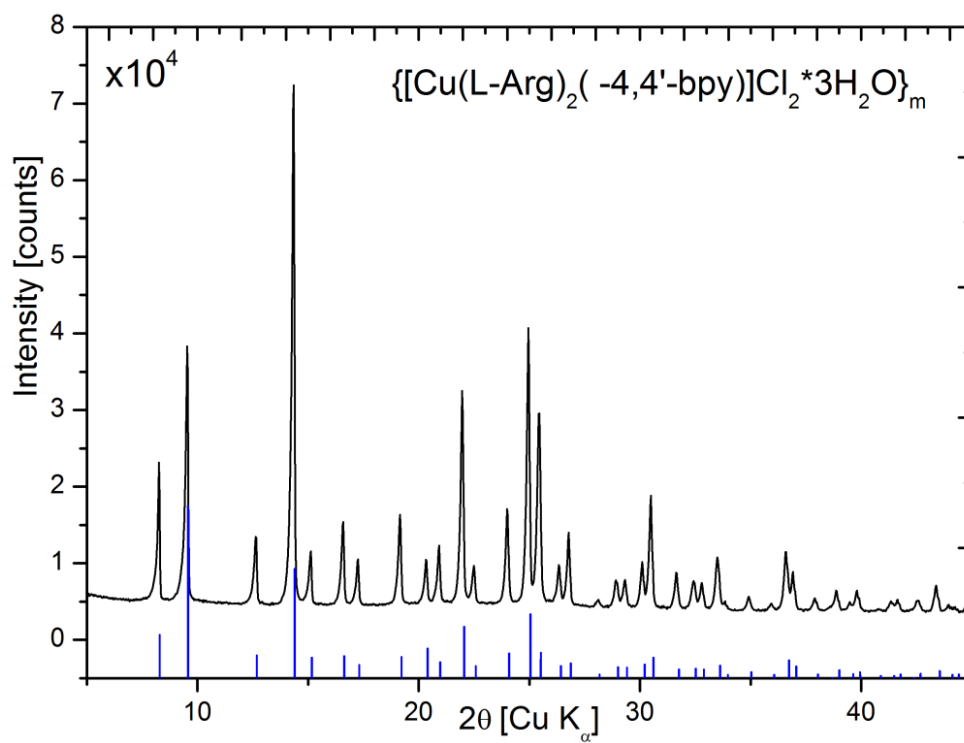


Fig. S1. XRD patterns for $\{[\text{Cu}(\text{L-Arg})_2(\mu\text{-4,4'-bpy})]\text{Cl}_2 \cdot 3\text{H}_2\text{O}\}_n$. The bars at the bottom show positions and relative intensity of peaks calculated from the crystal structure model obtained from the single-crystal X-ray diffraction.

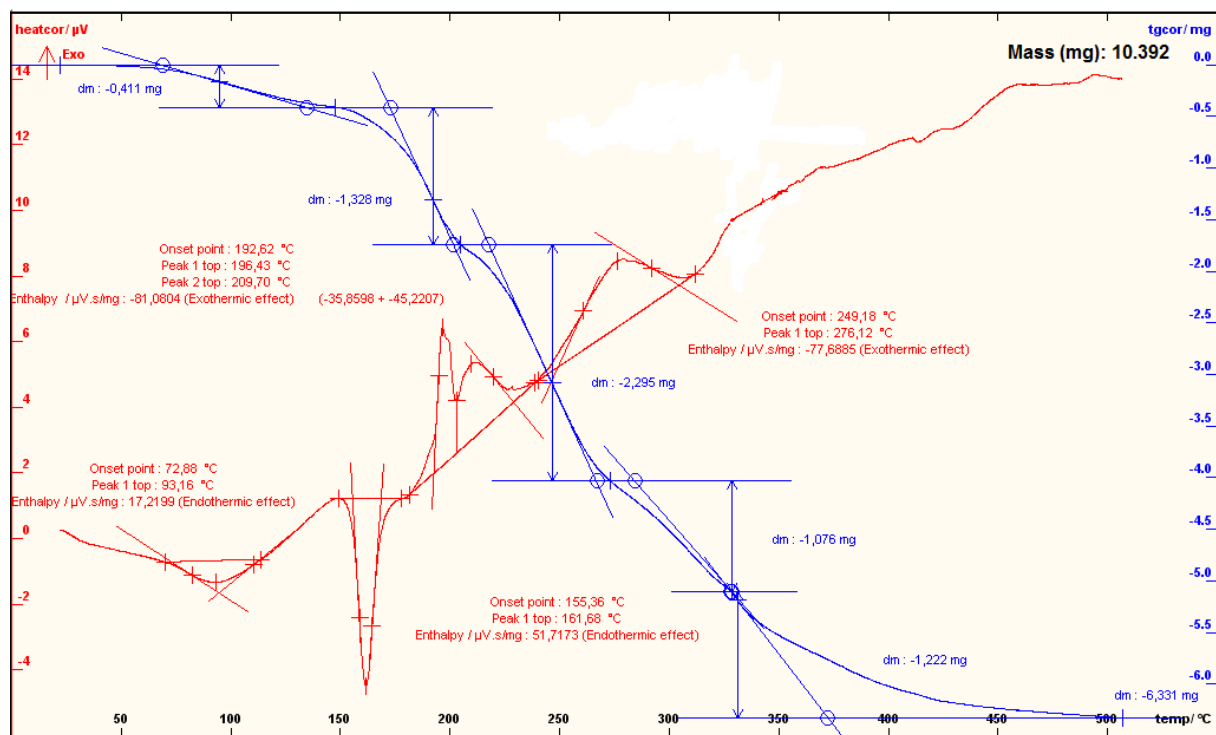


Fig. S2. TG-DTA thermogram for the complex 1.

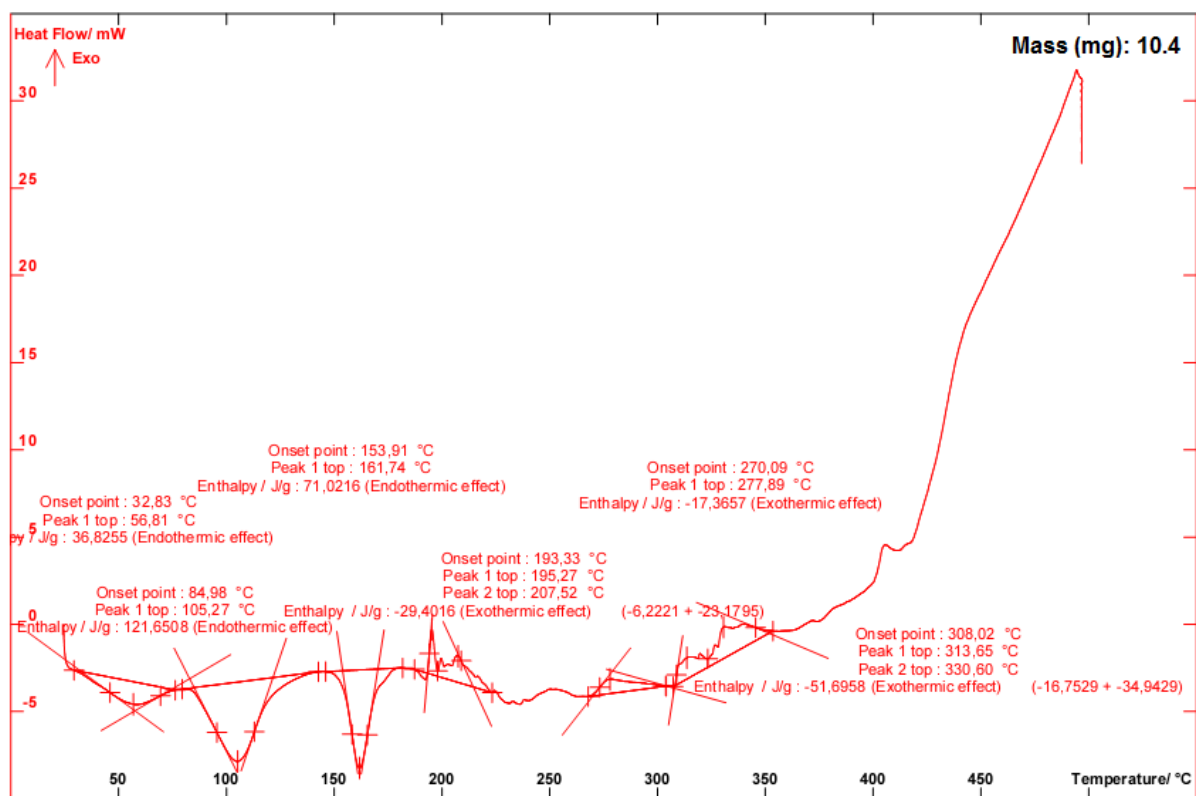


Fig. S3.DSC thermogram for the complex 1.

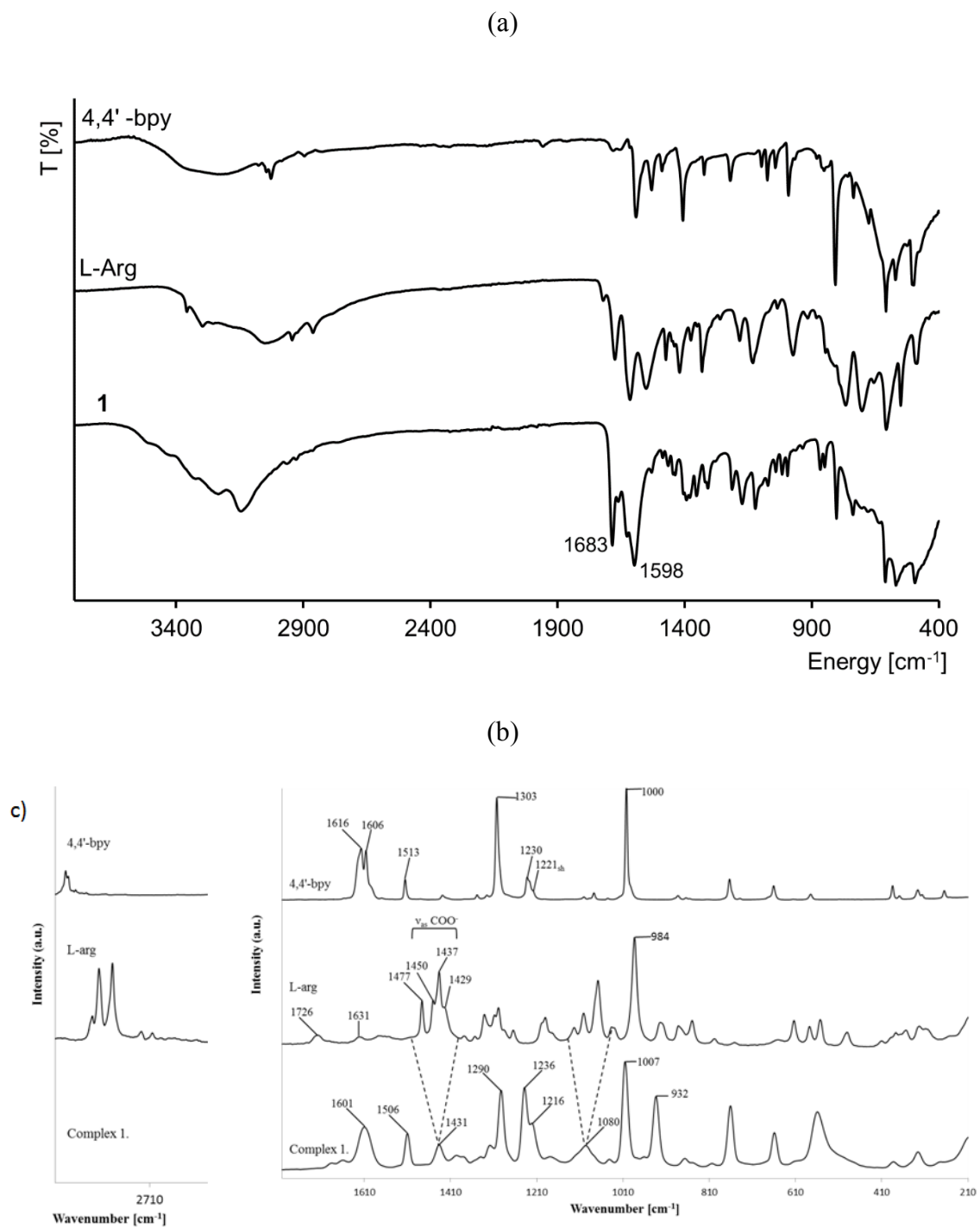


Fig. S4. (a) FT-IR, (b) FT-Raman spectrum of $\{[\text{Cu}(\text{L-Arg})_2(\mu\text{-4,4'-bpy})]\text{Cl}_2 \cdot 3\text{H}_2\text{O}\}_\infty$ (**1**) and pure ligands.

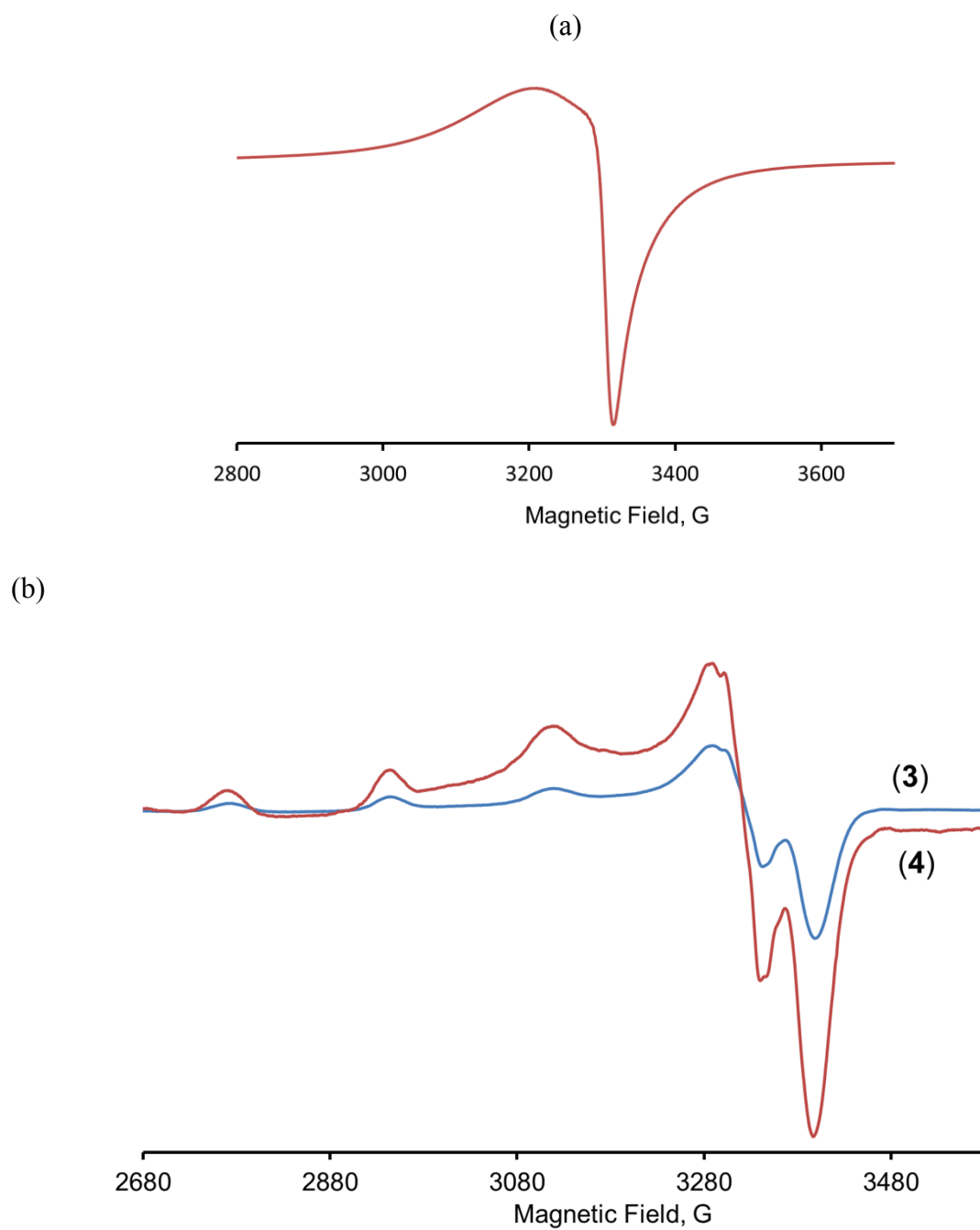


Fig. S5. (a) Powder EPR X-band spectra of compound **1** at 77 K, (b) the frozen mixtures: Cu^{2+} : L-Arg (1:2) (**3**) and Cu^{2+} :L-Arg:4,4'-bpy (1:2:1) (**4**) at 77 K.

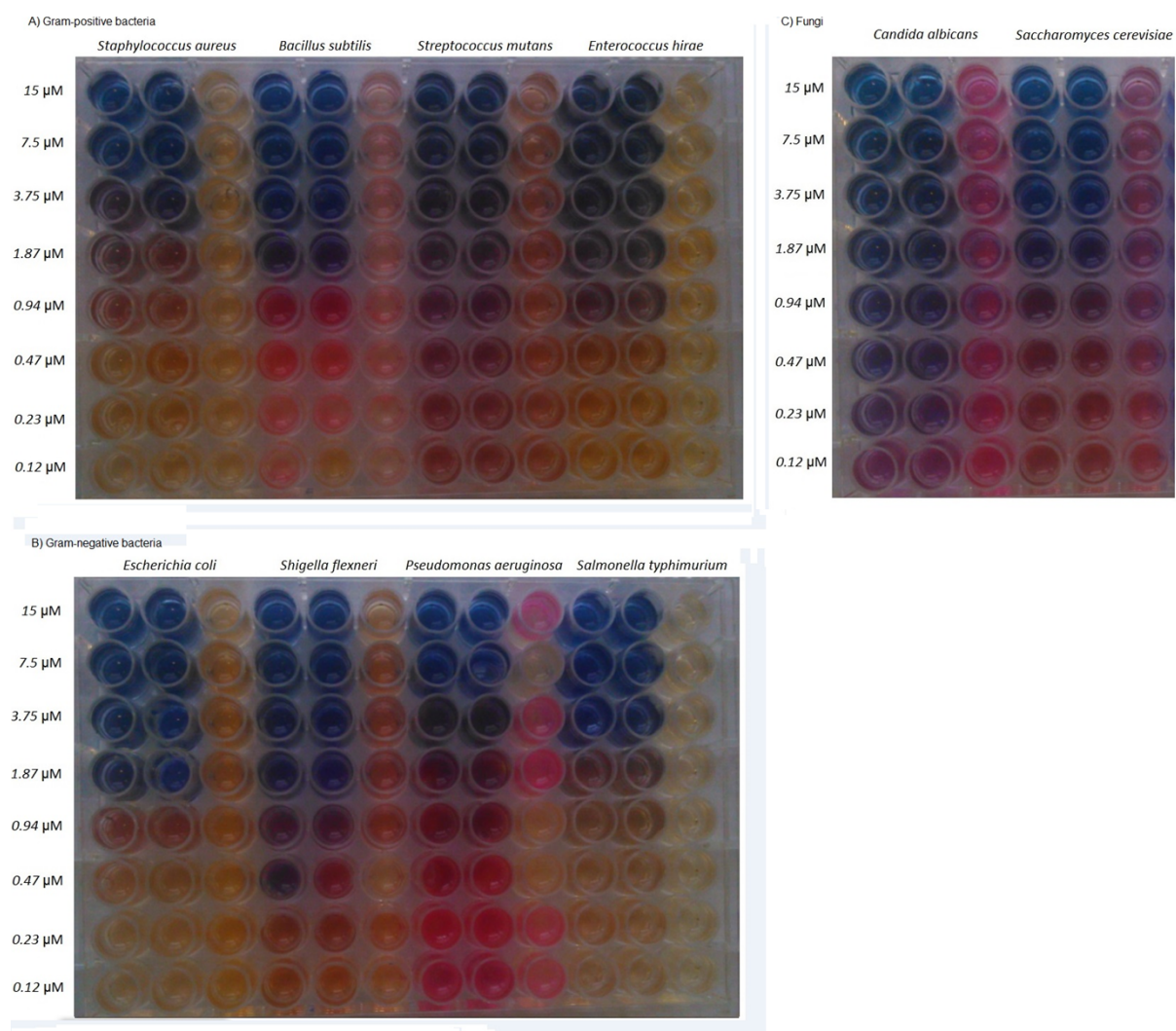


Fig. S6. An example of MABA test shows antimicrobial activity of dissolved complex **1** Visual color change of Alamar Blue indicator followed by 24 h incubation of gram-positive (A), gram-negative (B), and fungal (C) microorganisms with dissolved complex **1** (two initial rows contain microorganism with different concentration of **1** and the third row contains live pathogen and serves as a control).

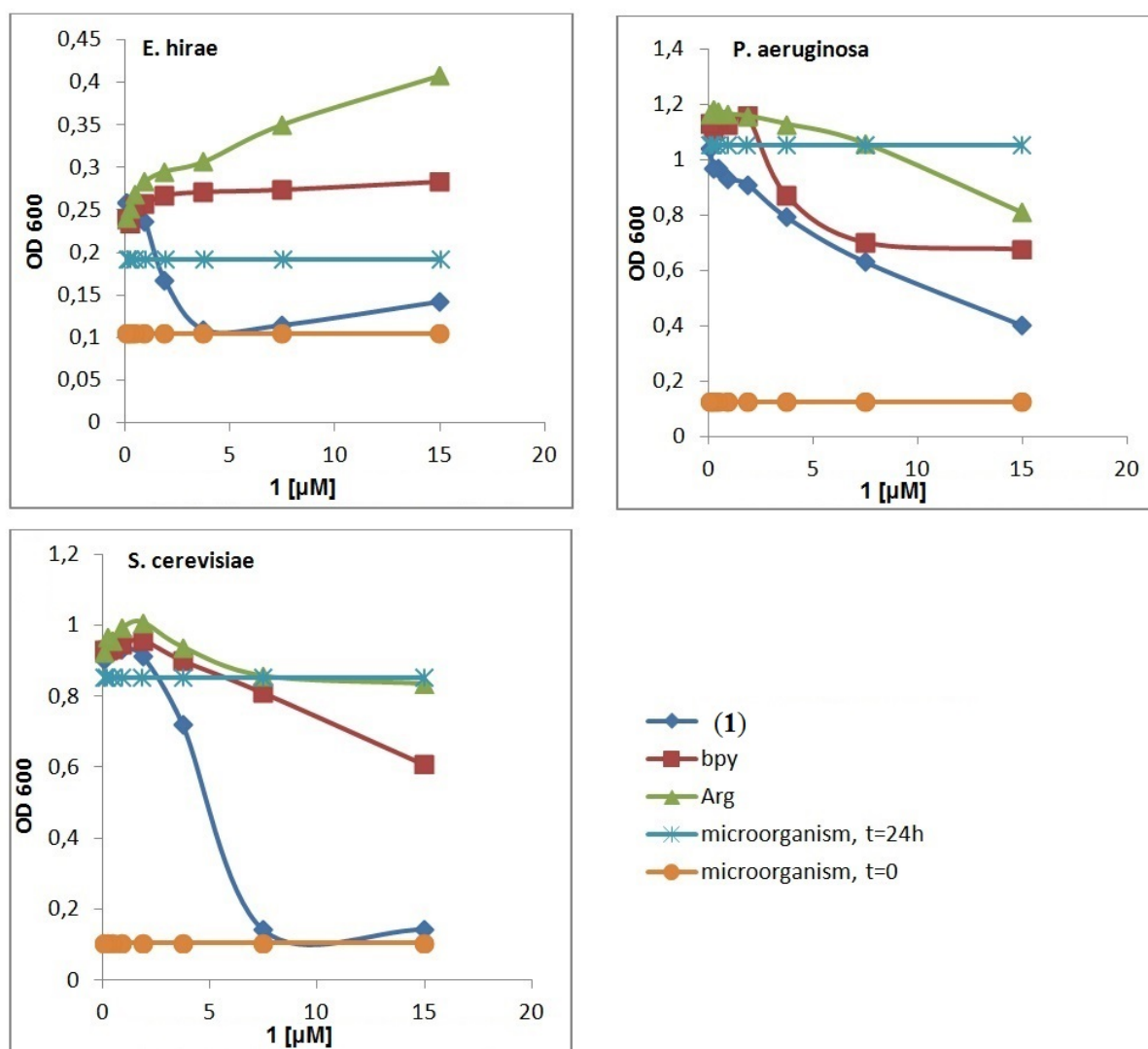


Fig. S7. Antimicrobial activity of complex **1** and its particular compounds.

Table S1. Crystal data, experimental details and structure refinement results of **1**

<u>Crystal data</u>	
Chemical formula	C ₂₂ H ₄₂ N ₁₀ O ₇ Cl ₂ Cu
M _r (g/mol)	FW = 693,1
Crystal system, space group	Trigonal, P 3 ₂ 2 1
Temperature (K)	295
a, b, c (Å)	12.3060, 12.3060, 18.4537
α, β, γ (°)	90, 90, 120
V (Å ³), Z	2420.18, 3
Radiation type	Mo Kα radiation, λ = 0.71073 Å
μ (mm ⁻¹)	0.90
Crystal size (mm)	0.25 × 0.21 × 0.17
<u>Data collection</u>	
T _{min} , T _{max}	T _{min} = 0.813, T _{max} = 1.000
No. of measured, independent and observed [I > 2σ(I)] reflections	2025
Refinement	
R[F ² > 2σ(F ²)], wR(F ²), S	0.057, 0.132, 0.96
No. of reflections	3048
No. of parameters	203
No. of restraints	0
H-atom treatment	H atoms treated by a mixture of independent and constrained refinement
Δ _{max} , Δ _{min} (e Å ⁻³)	0.43, -0.32
Flack parameter	-0.02 (3)