

## SUPPORTING INFORMATION

### Bioactive Nano Metal-Organic Frameworks as Antimicrobials against Gram-Positive and Gram-Negative Bacteria

**Neha Bhardwaj<sup>a,b,§</sup>, Satish K. Pandey<sup>a,§</sup>, Jyotsana Mehta<sup>a,b</sup>, Sanjeev K. Bhardwaj<sup>a,b</sup>, Ki-Hyun Kim<sup>c\*</sup>, Akash Deep<sup>a,b\*</sup>**

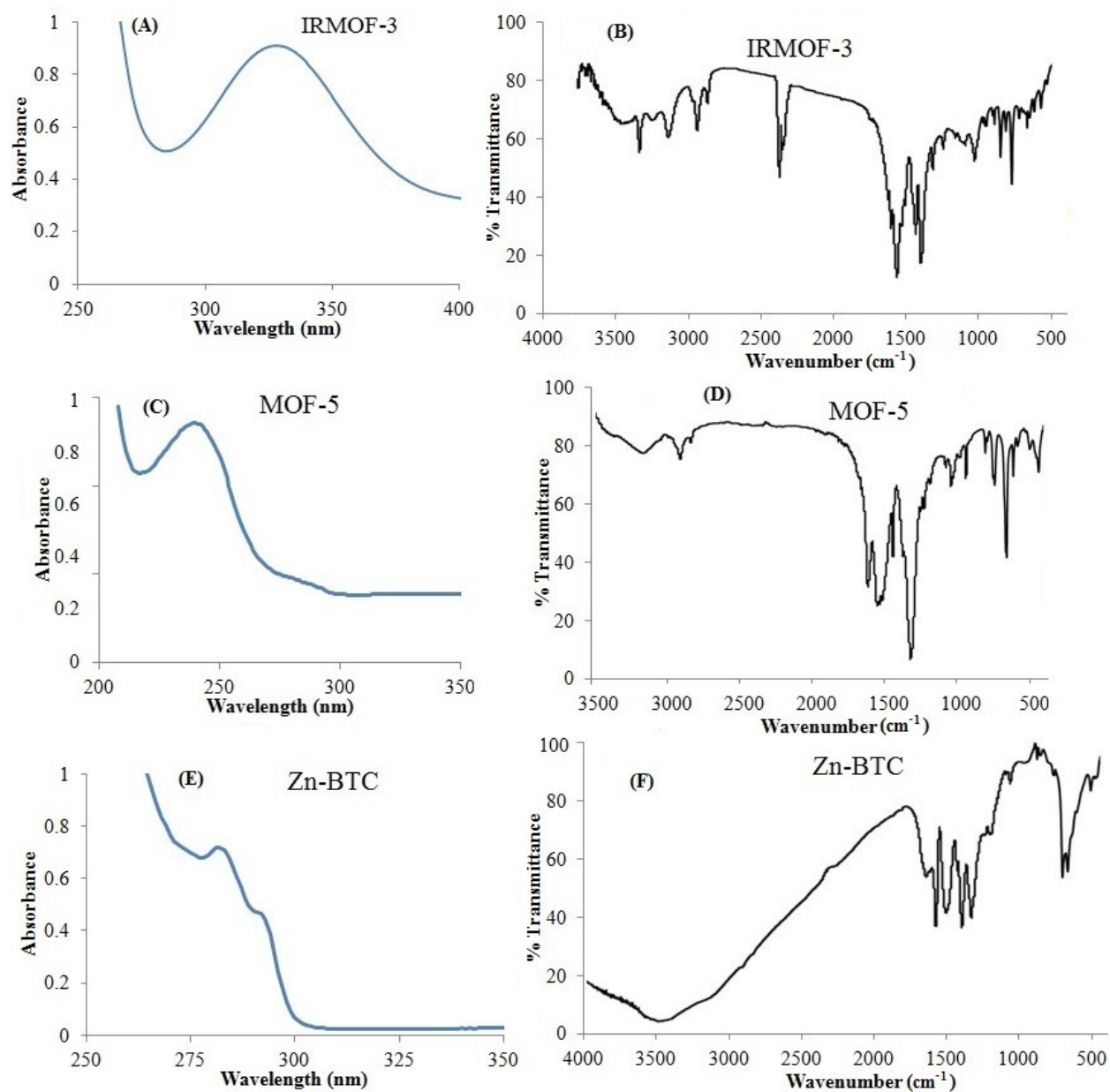
<sup>a</sup>Central Scientific Instruments Organisation (CSIR-CSIO), Sector 30 C Chandigarh, 160030, India; <sup>b</sup>Academy of Scientific and Innovative Research, CSIR-CSIO, Sector 30 C, Chandigarh, 160030, India; <sup>c</sup>Department of Civil & Environmental Engineering, Hanyang University, 222 Wangsimni-Ro, Seoul 133-791, Republic of Korea

<sup>§</sup>Both authors contributed equally.

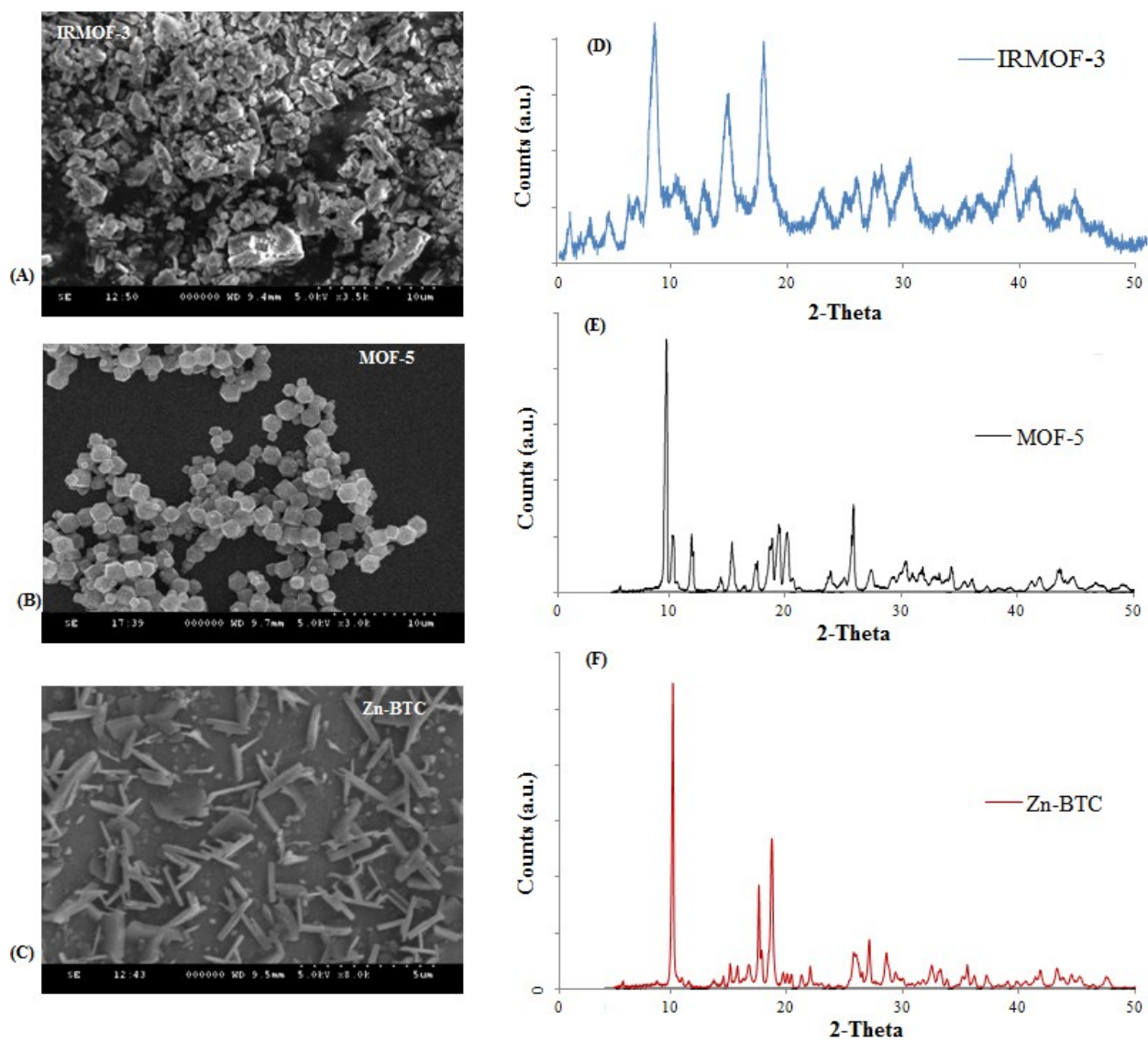
**\*Correspondance:**

**[kkim61@hanyang.ac.kr](mailto:kkim61@hanyang.ac.kr)**<sup>c</sup>, Tel.: +82-22202325. Fax: +82-222201945,

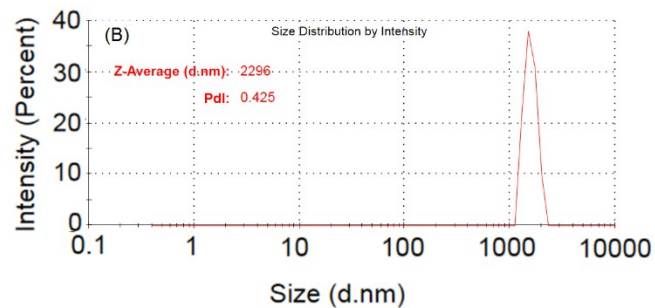
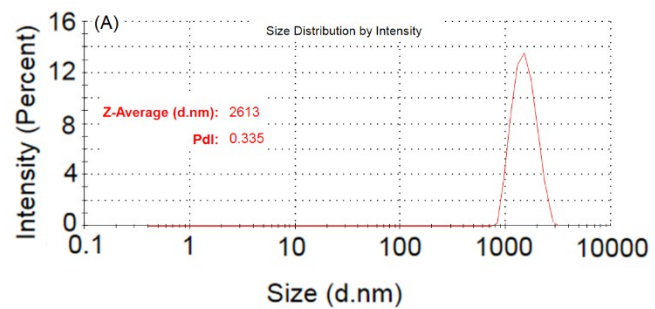
**[dr.akashdeep@csio.res.in](mailto:dr.akashdeep@csio.res.in)**<sup>a,b</sup>. Tel: +91-172-2672236



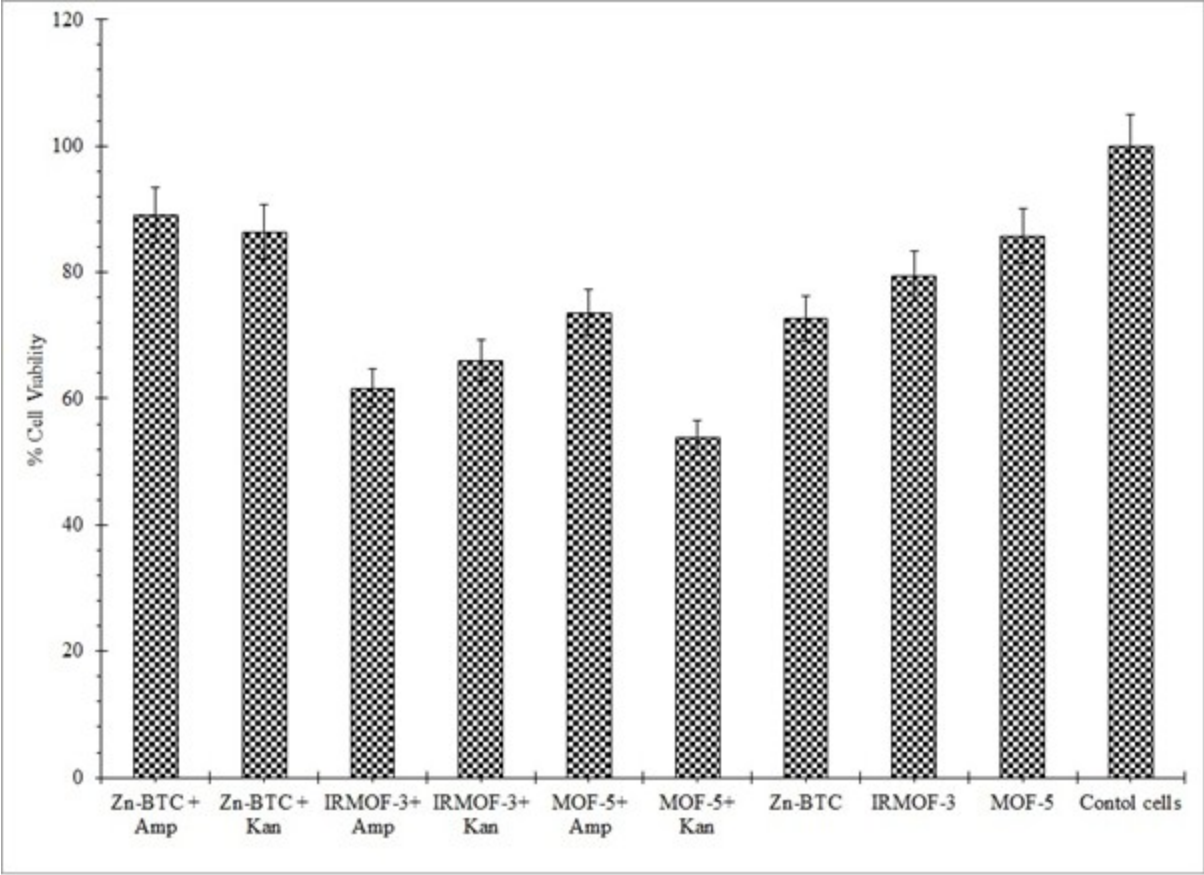
**Fig. S1.** Spectroscopic analysis of Zn-nMOF formulations: (A) UV-VIS spectrum of IRMOF-3; (B) FTIR spectrum of IRMOF-3; (C) UV-VIS spectrum of MOF-5; (D) FTIR spectrum of MOF-5; (E) UV-VIS spectrum of Zn-BTC; and (F) FTIR spectrum of Zn-BTC.



**Fig. S2.** Morphological and structural analysis of Zn-nMOF formulations: (A) FE-SEM image of IRMOF-3; (B) XRD pattern of IRMOF-3; (C) FE-SEM image of MOF-5; (D) XRD pattern of MOF-5; (E) FE-SEM image of Zn-BTC; and (F) XRD pattern of Zn-BTC.



**Fig. S3.** Zeta potential distribution of particle size analysis of MOF-5: (A) before and (B) after the loading of ampicillin.



**Fig. S4.** Cytotoxicity of nMOFs alone and combined with antibiotics on HaCaT cells. Mean values from triplicate analysis are shown.