## Supplementary Information

## Design, synthesis and *in vitro* antimicrobial activity of fused pyridine-pyrimidine hybrids

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## $^{1}$ H NMR, $^{13}$ C NMR, IR, and mass spectra

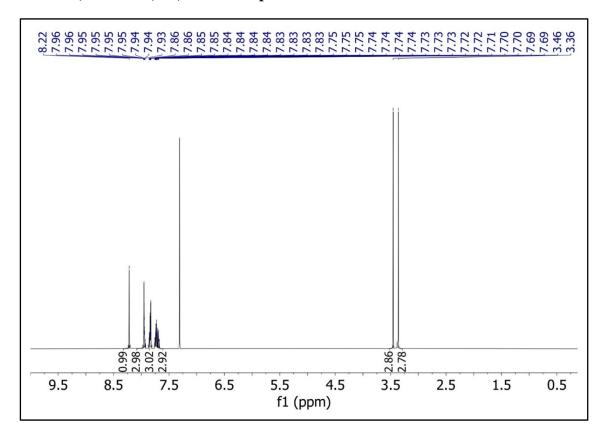


Figure 1S — <sup>1</sup>H NMR spectra of compound 4a

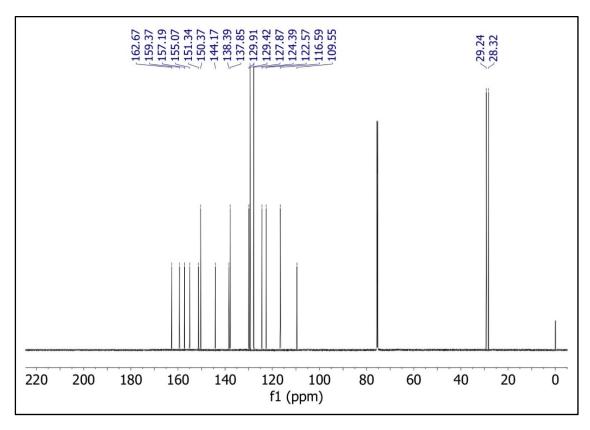


Figure 2S -  $^{13}$ C NMR spectra of compound 4a

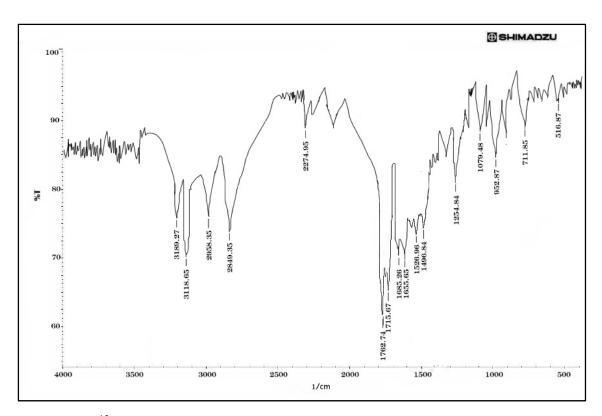


Figure  $3S = {}^{13}C$  NMR spectra of compound 4a

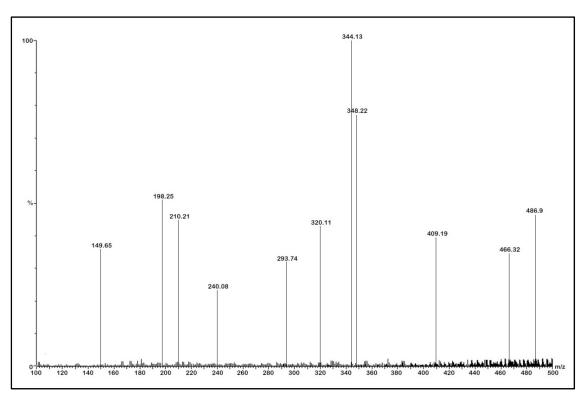


Figure 4S — Mass spectra of compound 4a

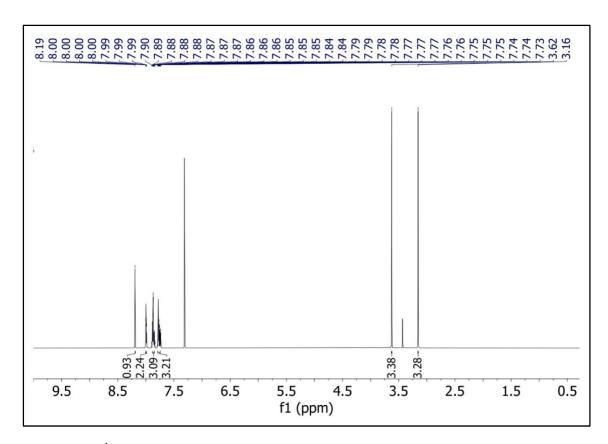


Figure 5S — <sup>1</sup>H NMR spectra of compound 4b

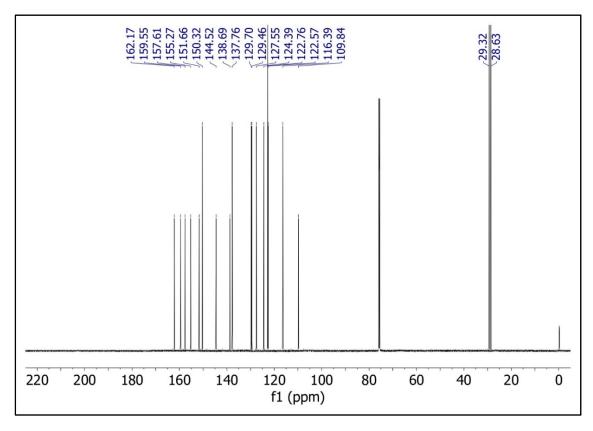


Figure 6S -  $^{13}$ C NMR spectra of compound 4b

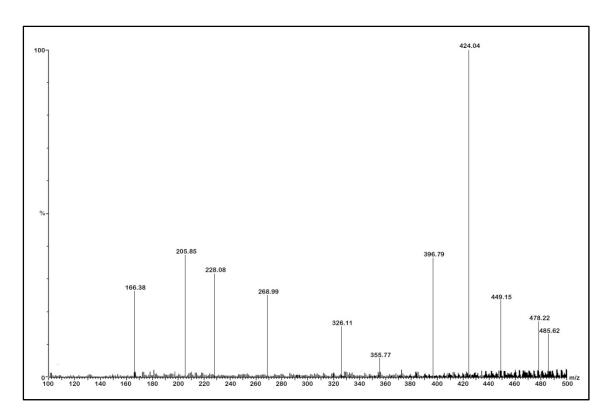


Figure 7S—Mass spectra of compound 4b

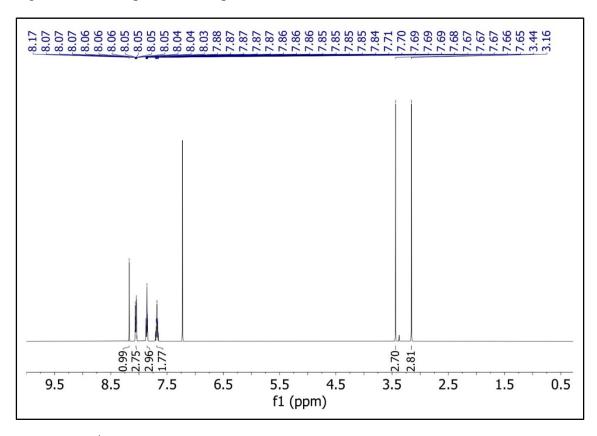


Figure  $8S = {}^{1}H$  NMR spectra of compound 4d

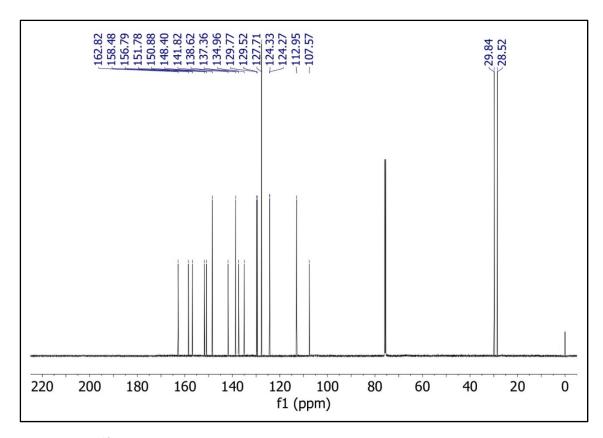


Figure 9S -  $^{13}$ C NMR spectra of compound 4d

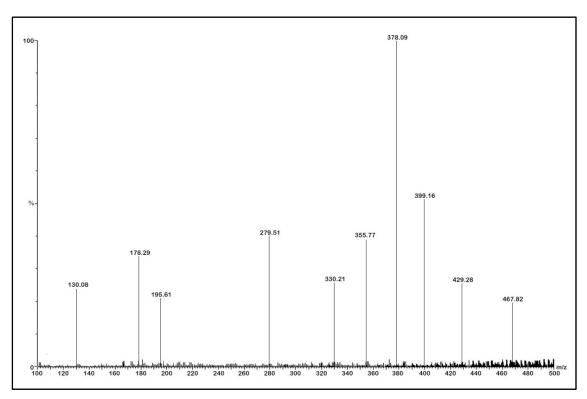


Figure 10S — Mass spectra of compound 4d

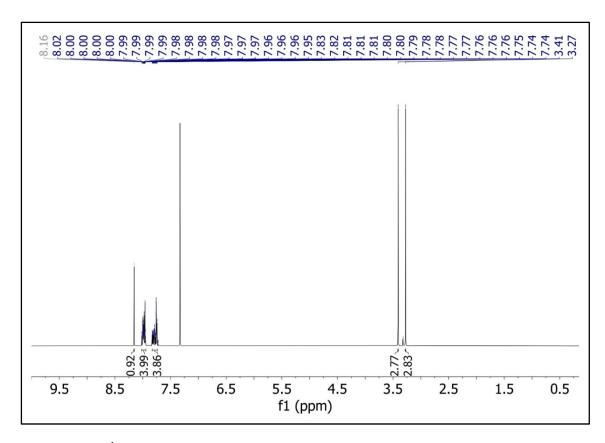


Figure 11S — <sup>1</sup>H NMR spectra of compound 4f

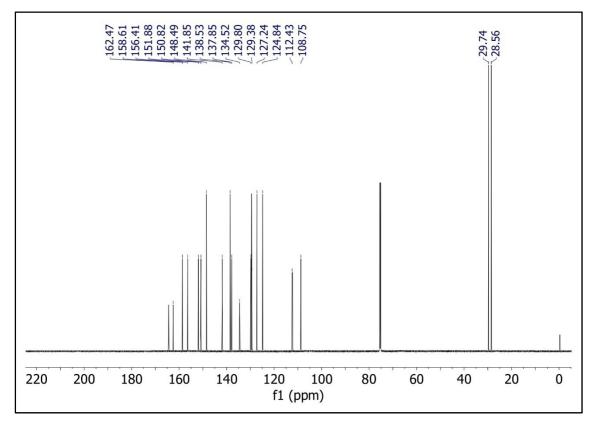


Figure  $12S - {}^{13}C$  NMR spectra of compound 4f

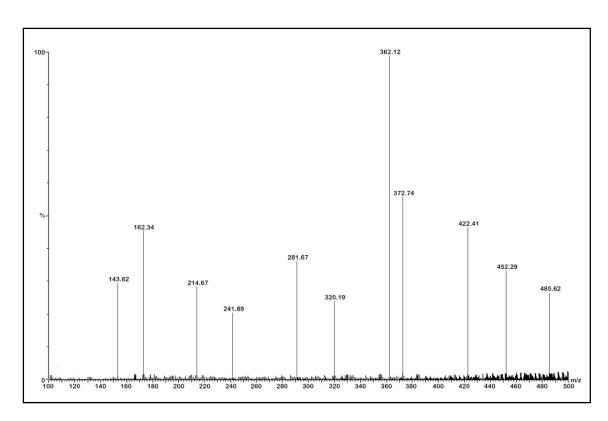


Figure 13S — Mass spectra of compound 4f

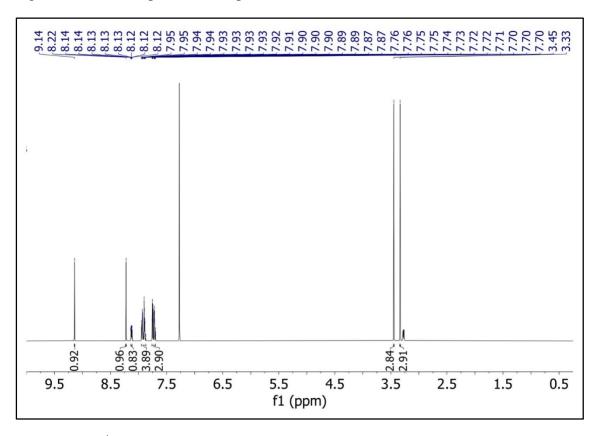


Figure  $14S = {}^{1}H$  NMR spectra of compound 4g

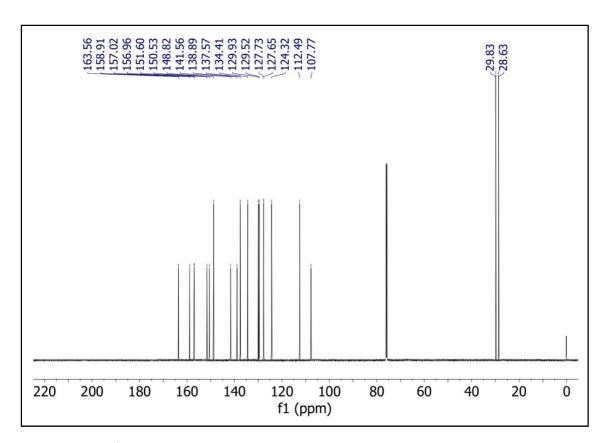


Figure  $15S - {}^{13}C$  NMR spectra of compound 4g

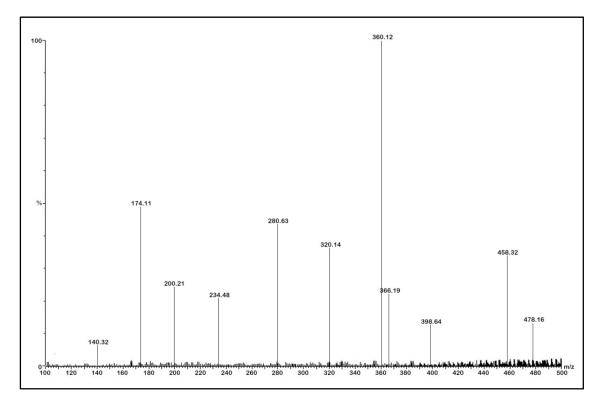


Figure 16S — Mass spectra of compound 4g

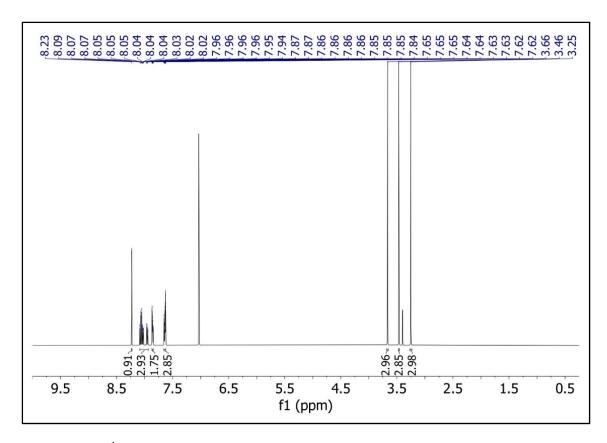


Figure 17S — <sup>1</sup>H NMR spectra of compound 4j

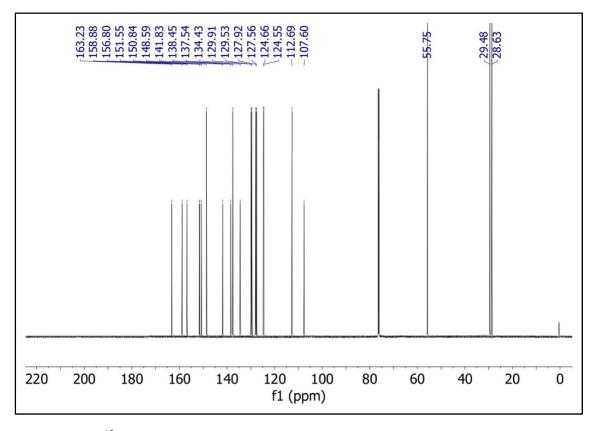


Figure  $18S = {}^{13}C$  NMR spectra of compound 4j

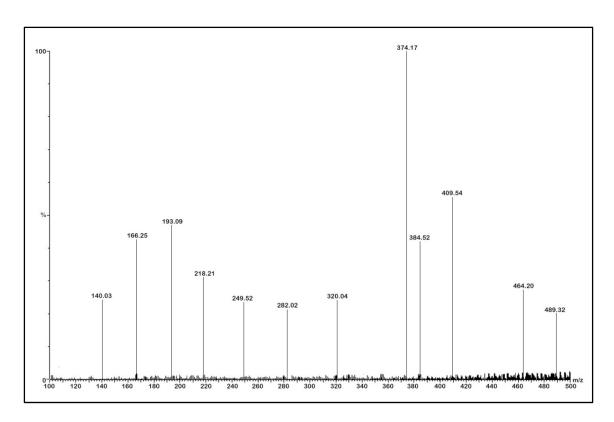


Figure 19S — Mass spectra of compound 4j

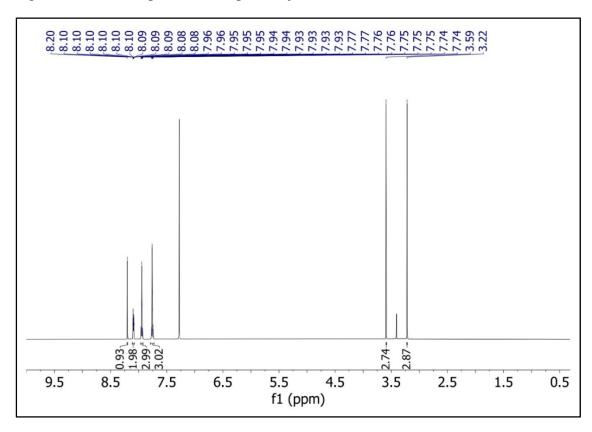


Figure  $20S - {}^{1}H$  NMR spectra of compound 41

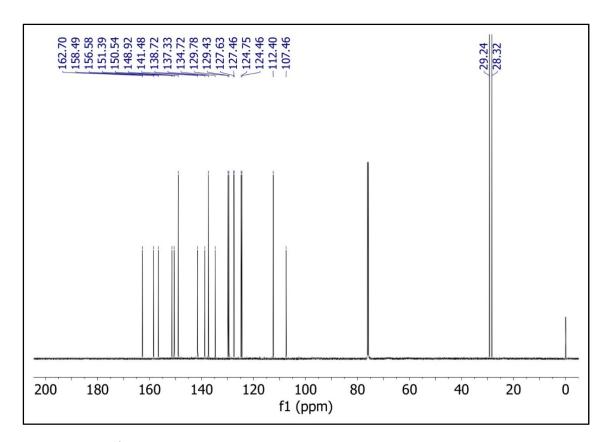


Figure 21S -  $^{13}$ C NMR spectra of compound 4l

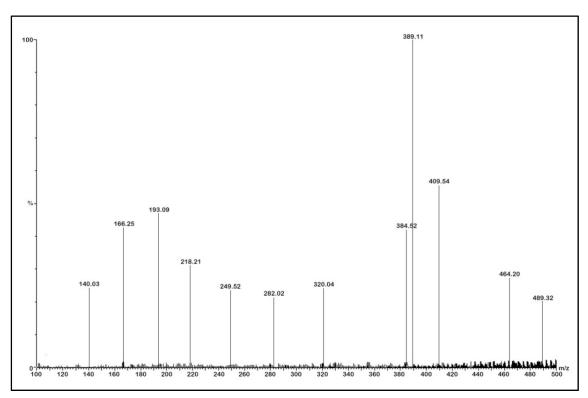


Figure 22S — Mass spectra of compound 41