Harnessing the Toxicity of Dysregulated Iron Uptake for Killing Staphylococcus aureus: Reality or Mirage?

Nalin Abeydeera[†], Bing Yu [‡], Bishnu D. Pant[†], Min-Ho Kim* [‡] and Songping D. Huang*[†]

[†]Department of Chemistry and Biochemistry and [‡]Department of Biological Sciences,

Kent State University, Kent, OH 44240, USA.

*Contributed equally to this work



Scheme S1. Synthesis of Fe(hinok)₃ in ethanol at room temperature.



Figure S1. UV-vis spectrum of Fe(hinok)₃ and hinokitiol in methanol.



Figure S2. FT-IR spectra of Fe(hinok)₃ and hinokitiol.



Figure S3. Experimental and simulated X-ray powder diffraction patterns of Fe(hinok)_{3.}



Figure S4. Representative images of CFU enumeration results (**a-b**) and MIC test of Fe(hinok)₃ against MSSA (**c**).



Figure S5. Representative images of CFU enumeration results (**a-b**) and MIC test of Fe(hinok)₃ against MRSA (**c**).

DSPA (ATCC 15692)



Concentration of Fe(hinok)₃ - (µg/mL)

Figure S6. Representative images of MIC test for Fe(hinok)₃ against DSPA.



Control

0.25 µg/mL

0.50 µg/mL

Figure S7. Representative images of LIVE/DEAD assay in planktonic DSSA.



(C)

MICs against MRSA (ATCC BAA - 44)				FIC index
Ciprofloxacin only	Ciprofloxacin with Fe(hinok) ₃	Fe(hinok) ₃	Fe(hinok) ₃ with Ciprofloxacin	0.75
16 µg/mL	8 µg/mL	4 µg/mL	1 µg/mL	0.10

Figure S8. Checkerboard assay for $Fe(hinok)_3$ and ciprofloxacin against MRSA with a representative image of MIC assay (**a**), the raw viability data (**b**) and the determination of MIC values and the FIC index of $Fe(hinok)_3$ and ciprofloxacin against MRSA (**c**).



Figure S9. Checkerboard assay for $Fe(hinok)_3$ and ofloxacin against MRSA with a representative image of MIC assay (**a**), the raw viability data (**b**) and the determination of MIC values and the FIC index of $Fe(hinok)_3$ and ofloxacin against MRSA (**c**).



Figure S10. Checkerboard assay for $Fe(hinok)_3$ and vancomycin against MRSA with a representative image of MIC assay (**a**), the raw viability data (**b**) and the determination of MIC values and the FIC index of $Fe(hinok)_3$ and vancomycin against MRSA (**c**).