## **Supporting Information**

## Morpholine modified Ru-based agents with multiple antibacterial mechanisms as metalloantibiotic candidates against *Staphylococcus aureus* infection

Shijie Lin<sup>a</sup><sup>§</sup>, Yun Song<sup>b</sup><sup>§</sup>, Yajuan Sun<sup>b</sup><sup>§</sup>, Wenjing Lin<sup>b</sup>, Guangying Yu<sup>b</sup>, Xiangwen Liao<sup>b</sup>,

Qiang Yang<sup>c\*</sup>

[a] Department of Pharmacy, Hainan General Hospital (Hainan Affiliated Hospital of Hainan Medical University), Haikou, 570311, China

[b] Jiangxi Provincial Key Laboratory of Drug Design and Evaluation, School of Pharmacy, Jiangxi Science & Technology Normal University, Nanchang, 330013, China

[c] Department of Clinical Pharmacy, Hainan Cancer Hospital, Haikou, 570100, China

§ These authors contribute equally to this work

\* Correspondence author:

Qiang Yang, E-mail: 18789551643@163.com



Figure S2. The <sup>13</sup>C NMR spectrum of the MPLP.







Figure S5. The <sup>13</sup>C NMR spectrum of the Ru(II)-1.



Figure S6. The IR spectrum of the Ru(II)-1.



Figure S8. The HPLC of Ru(II)-1.



Figure S10. The <sup>13</sup>C NMR spectrum of the Ru(II)-2.



Figure S11. The IR spectrum of the Ru(II)-2.









Figure S16. The IR spectrum of the Ru(II)-3







Figure S18. The HPLC of Ru(II)-3.



Figure S20. The <sup>13</sup>C NMR spectrum of the Ru(II)-4.



Figure S21. The IR spectrum of the Ru(II)-4





Figure S24. The <sup>1</sup>H NMR of Ru(II)-5.



Figure S25. The <sup>13</sup>C NMR spectrum of the Ru(II)-5.



Figure S26. The IR spectrum of the Ru(II)-5







Figure S29. The images of the hemolytic effect of Ru(II)-3 on rabbit blood cell.

Table S1. Minimum inhibitory concentration (MIC) values of Ru(II)-3 against drug-resistant S. aureus (MRSA) isolated from the clinic.

| Compound     | MIC µg/mL  |
|--------------|------------|
| Ru(II)-3     | 0.2        |
| Clindamycin  | Resistance |
| Penicillin G | Resistance |