

Supplementary Data

Vancomycin Analogue Restores Meropenem Activity against NDM-1 Gram-negative Pathogens

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I. Supplementary Figures

Figure S1. Schematic representation of agarose gel (2%) showing the 475 bp amplified product by conventional polymerase chain reaction. Lane 1, 100 bp DNA ladder; Lane 2, positive control- NDM-1 producing *K. pneumoniae* (ATCC-BAA-2146); Lane 3, negative control- *E. coli* (ATCC-25922); Lane 4, *E. coli* R3336 confirm the NDM-1 gene, Lane 5, multi-drug resistant (MDR) *K. pneumoniae* R3421 which was negative for NDM-1 gene; Lane 6, *K. pneumoniae* R3949 and Lane 7, *K. pneumoniae* R3934 confirm the NDM-1 gene.

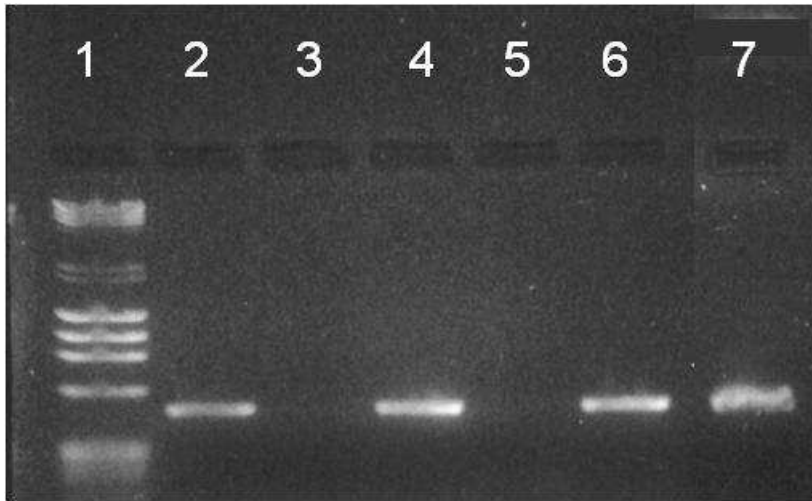


Figure S2. The complex formation of Dipi-van with Zn^{2+} (Incubation of Dipi-van with zinc sulfate). Structure of $\text{Dipi-van-Zn}^{2+}\cdot 2\text{H}_2\text{O}$ and the complex confirmed by mass-spectrometry.

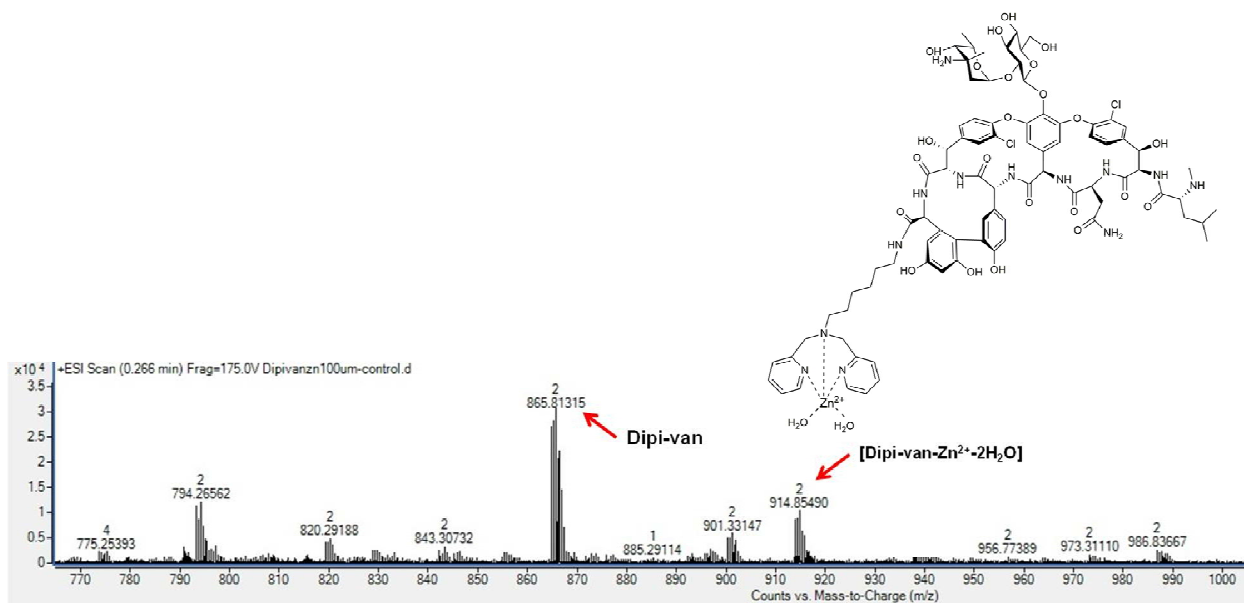
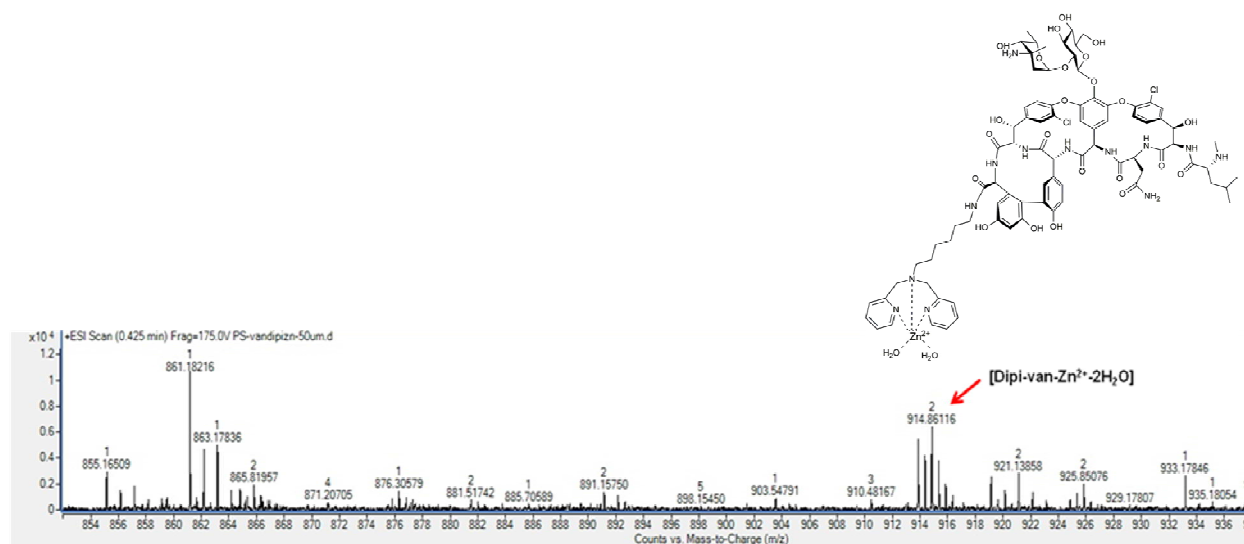


Figure S3. The complex formation of Dipi-van with Zn^{2+} from NDM-1 enzyme (Incubation of Dipi-van with NDM-1 enzyme). Presence of $\text{Dipi-van-Zn}^{2+}\cdot 2\text{H}_2\text{O}$ confirms the depletion of metal ion from the enzyme by Dipi-van.



II. Supplementary Tables

Table S1. Antibacterial activity of common antibiotics against carbapenem-resistant NDM-1 positive Gram-negative clinical isolates

NDM-1 expressing bacteria	Minimum Inhibitory Concentration (µg/mL)					
	Colistin	Tigecycline	Ciprofloxacin	Erythromycin	Kanamycin	Minocycline
<i>K. pneumoniae</i> R3949	0.5	0.5	>250	>250	>250	32
<i>K. pneumoniae</i> R3934	0.5	0.5	>250	>250	>250	62
<i>K. pneumoniae</i> ATCC BAA2146	0.5	0.5	>250	125	>250	62
<i>E. coli</i> R3336	0.5	0.5	125	>250	>250	32

Table S2. Antibacterial efficacy of meropenem with or without Dipi against NDM-1 positive clinical isolates

NDM-1 expressing bacteria	Minimum Inhibitory Concentration (µg/mL)	
	- Dipi	+ Dipi (100 µM)
<i>K. pneumoniae</i> R3949	>100	50
<i>K. pneumoniae</i> R3934	>100	>50
<i>K. pneumoniae</i> ATCC BAA2146	>100	50
<i>E. coli</i> R3336	>100	>50