

## Supplementary method

### The PK data variation of colistin and imipenem

Serum was collected for measurements of antibiotics concentration by a biologic method (agar diffusion) as reported previously employing *Streptococcus* sp. EB68 (imipenem) or *Bordetella bronchiseptica* ATCC4617 (colistin), respectively. The coefficient of variation (CV) of slope rate of the standard diameter-log concentration curves (n=6) is 3.0% of colistin and 3.5% of imipenem. R<sup>2</sup> of linear relationship of standard diameter-log concentration curve is 0.981-0.998. Inhibition zones were measured with a precision of 0.03 mm. The intraday CV of concentration detection (n=10) is 3.3-4.2% of colistin and 3.5-4.5% of imipenem. The between-day CV of concentration detection (n=10) is 3.1-5.0% of colistin and 3.0-4.8% of imipenem. The detection limit is 1µg/ml (colistin) and 0.2µg/ml (imipenem).