

Supplementary Table 1. Gradient elution sequence for testing the purity of vancomycin HCl.

Time (min)	Solution A^a (%)	Solution B^b (%)	Elution
0-12	100	0	isocratic
12-20	100-0	0-100	linear gradient
20-22	0	100	isocratic
22-23	0-100	100-0	linear gradient
23-35	100	0	isocratic

^aSolution A: TEA buffer pH 3.2; acetonitrile; and THF (93:6:1).

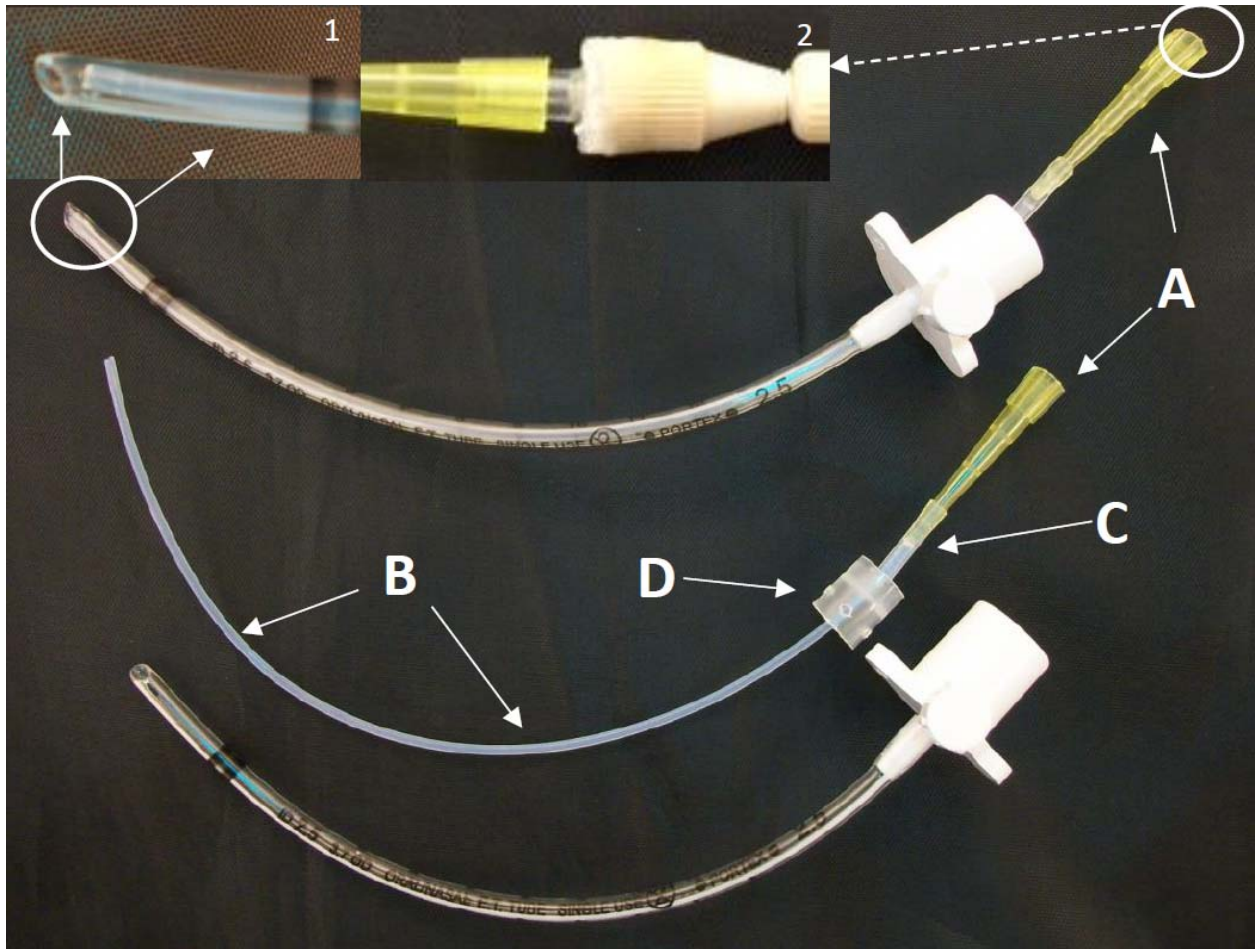
^bSolution B: TEA buffer pH 3.2; acetonitrile; and THF (70:29:1).

Supplementary Table 2. Injection sequence for purity test.

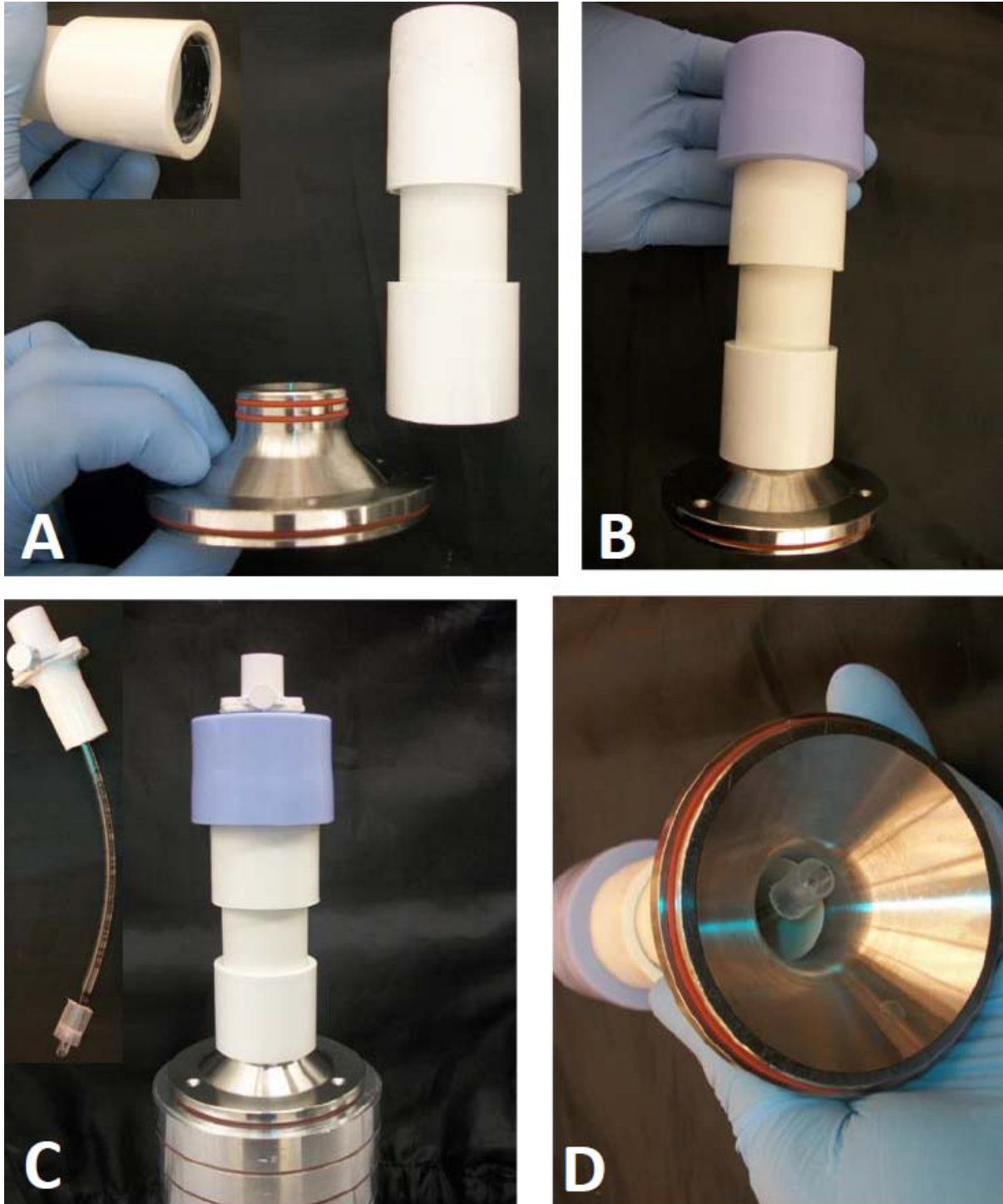
Sample no.	Solution	Composition	Number of injections
1	System Suitability Solution	1 mg/mL of vancomycin reference standard powder in Solution A	5
2	Resolution Solution	0.5 mg/mL of vancomycin reference standard powder in water heated to 65 C for 48 h and cooled to room temperature	1
3	Diluent	Solution A	1
4	Test Preparation A	Tested powder in Solution A in a concentration of 10 mg/mL	1
5	Test Preparation B	Dilution of Test preparation A with Solution A to a concentration of 0.4 mg/mL	1
6	Resolution Solution	0.5 mg/mL of vancomycin reference standard powder in water heated to 65 C for 48 h and cooled to room temperature	1



Supplementary Fig. 1. Modified Insufflator with 5 mL syringe and custom luer slip fitting (inset).



Supplementary Fig. 2. Drug Reservoir and Endotracheal Tube Catheter. Custom drug reservoir (A) linked to endotracheal tube catheter (B) by adjoining collar (C). A ported spacer (D) is used to promote proper placement of the catheter preventing the end of the catheter from protruding out of the endotracheal tube (inset 1). Image inset 2 depict the modified insufflator leuc slip and drug powder reservoir interface.



Supplementary Fig. 3. Anderson Cascade Impaction with a straight throat that was fabricated from 1" PVC pipe (A). An airtight seal with the O-Ring inlet cone was created by over laying rubber tape in the base of the throat base (A inset). The top of the throat was milled to fit the silicone mouthpiece (B). (C) Image depicts the custom endotracheal tube: Monodose® fitting inserted into the strait throat and (D) the tip of the endotracheal tube (and spacer) protruding into the O-ring inlet cone.