

1. PURPOSE

This test method aims to characterize swab uptake volume (i.e. absorbency) of nasal swabs (e.g., nasopharyngeal, mid-turbinate). This test protocol is a precursory test required to determine the concentration of inoculum in a swab elution test. The results from the test also provide a quantitative adsorption value that is not intended to be an absolute indicator of a performant swab, but rather serves as a comparative measure that, when combined with other laboratory testing, provides a more comprehensive analysis of swab performance in a clinical laboratory environment. Data obtained from this test is intended to be followed up with a formal clinical trial during less critical times to establish swab efficacy more rigorously.

2. SIGNIFICANCE AND USE

- 2.1 Measure swab uptake volume / adsorption
- 2.2 Determines inoculum concentration required for elution test

3. MATERIALS / EQUIPMENT

- 3.1 Twenty (20) test swabs per type of swab tested (e.g., standard of care swabs, 3D printed swab design "A", "B")
- 3.2 Twenty (20) 5mL test tubes for each test swab condition
- 3.3 0.85% Saline Solution (1000mL)
- 3.4 High resolution scale (+/- 0.1 mg)

4. PROCEDURE

1. Fill each of the 20 test tubes with 100 microliters (μL) of bacterial solution.
2. Weigh each of the 20 test tubes and record starting weight.
3. Immerse swab in solution for 15 sec.
4. Remove swab from tube, weigh test tube again, and record ending weight.
5. Repeat for all 20 swabs.
6. Calculate adsorption as the difference in mass (starting weight – ending weight).
7. If multiple swab types need to be tested, repeat steps 1-6 for each swab type in question.

5. RESULTS

The average adsorption value \pm standard deviation for each swab type (n=20) will be reported in milligrams (mg).

Revision History

Revision	CHANGE DESCRIPTION	AUTHOR	APPROVAL	DATE
1.0	Start revision management	Arrianna Willis	pending	7.10.2020
1.1	Absorption changed to Adsorption, change in Materials/Equipment	Arrianna Willis	Pending	10.7.2020