

Viral Preservation with Saliva Mimicking Medium in Aerossols

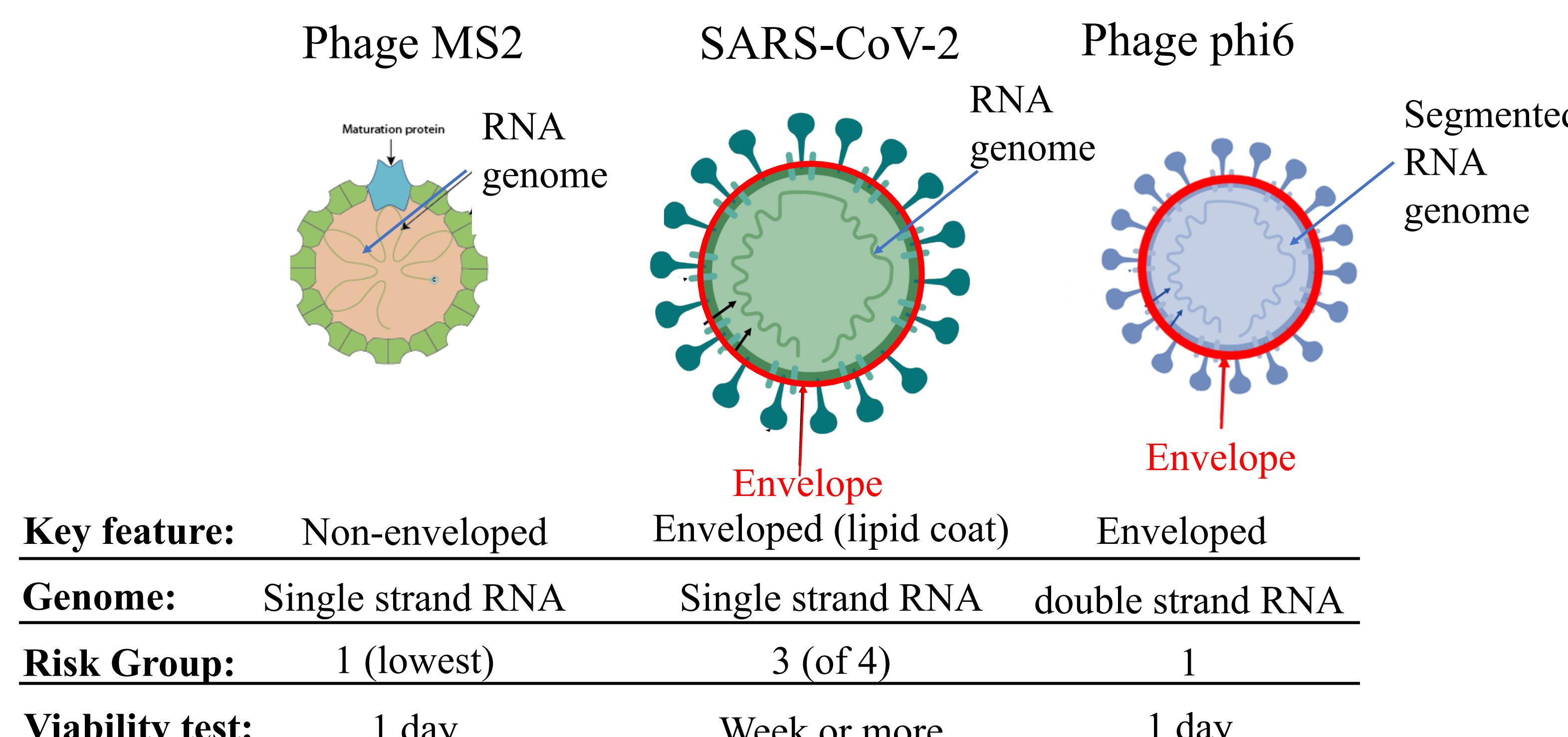
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Context: Need safe tools for measuring the infectivity, spread, and treatment of airborne viruses. Bacterial viruses (phages) serve as surrogates

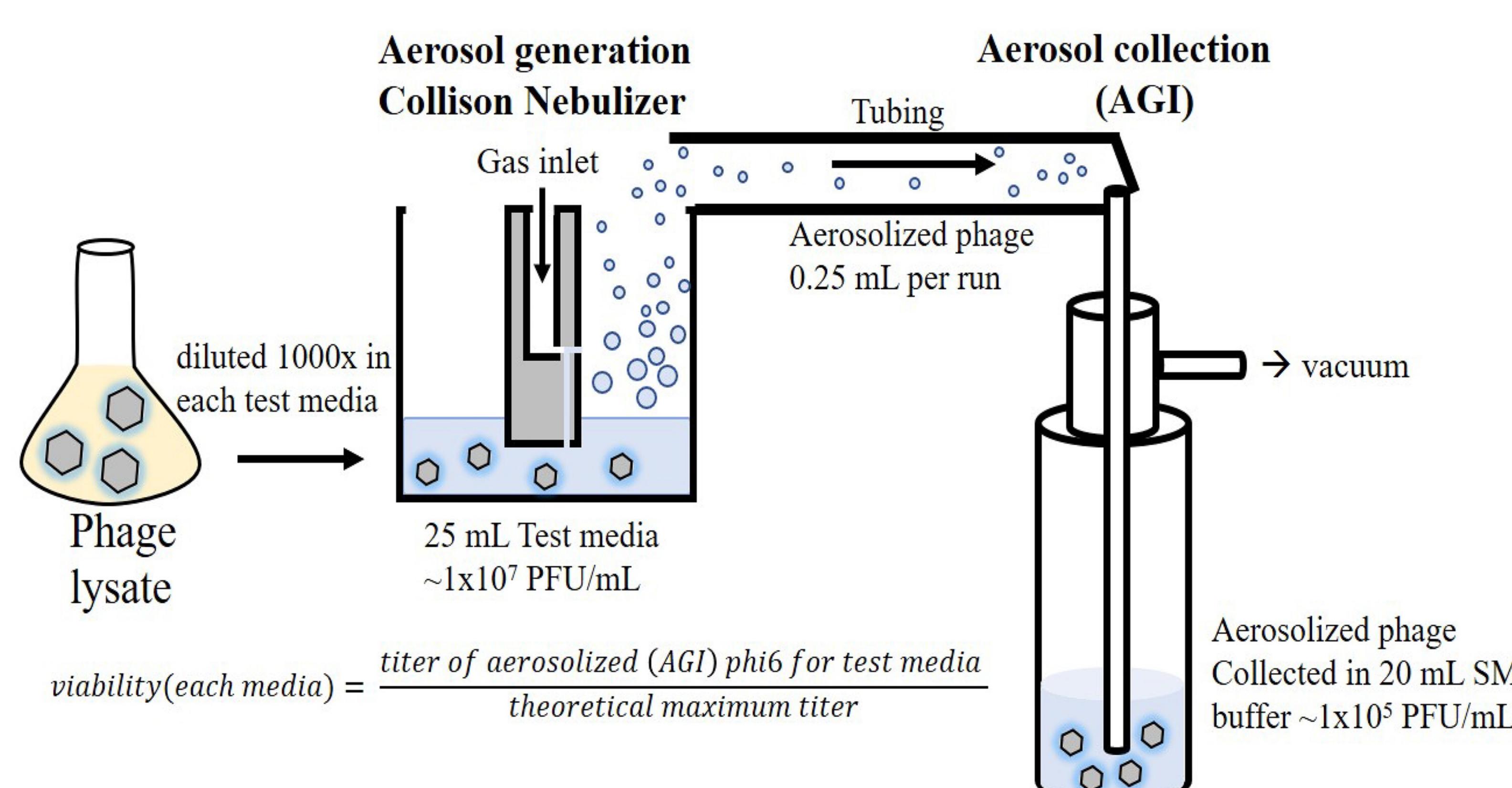
Problem: Surrogate phages are much less stable in aerosols compared to their pathogen counterparts.

Solution: Improve the survival of phages in aerosols so that we can better understand airborne viral pathogens

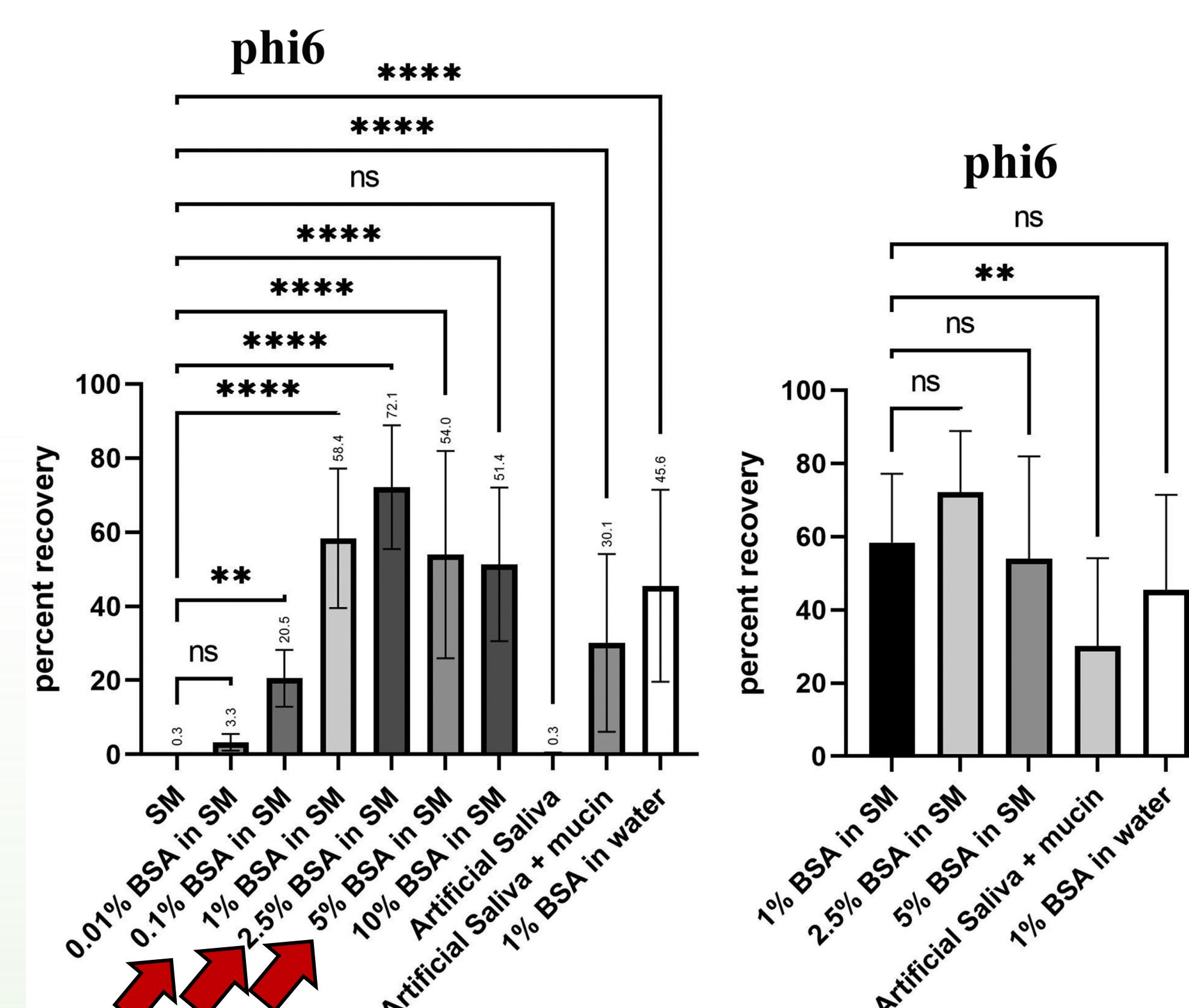
Phages: Safe surrogates of pathogenic viruses



Biological Aerosol Exposure Testbed



Protein in spray media stabilizes phi6 in aerosols

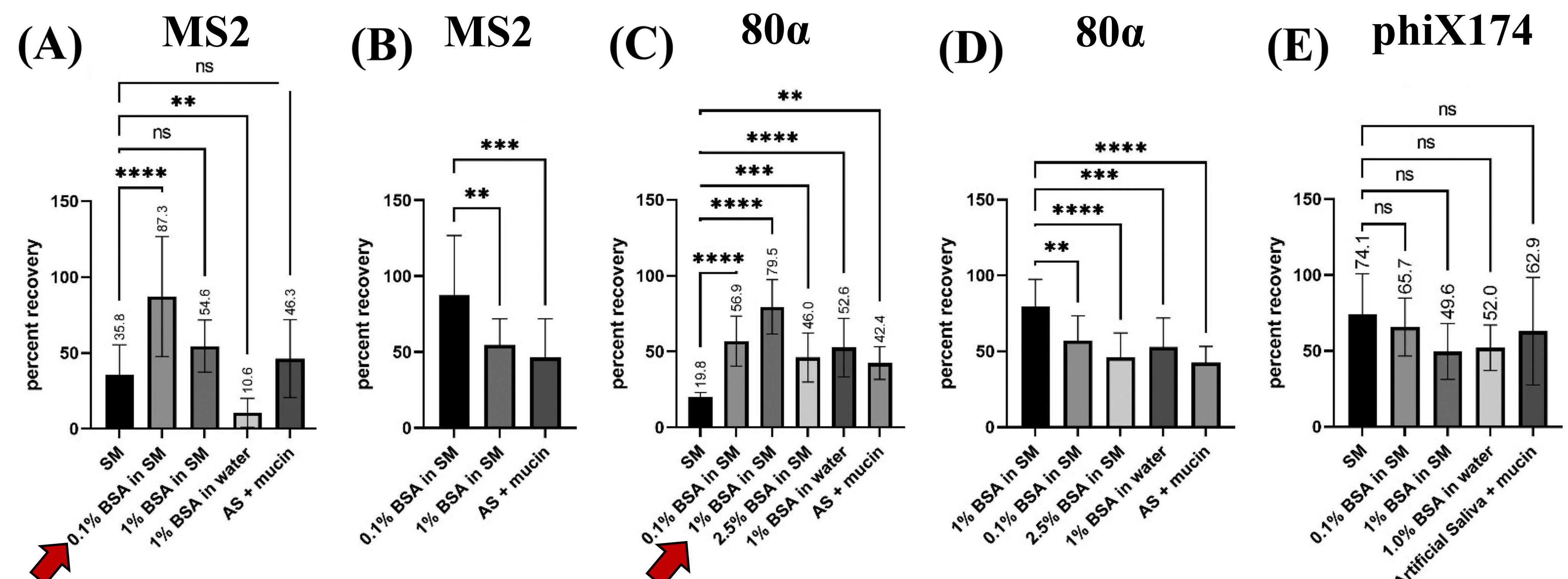


Our spray media consists of two components:

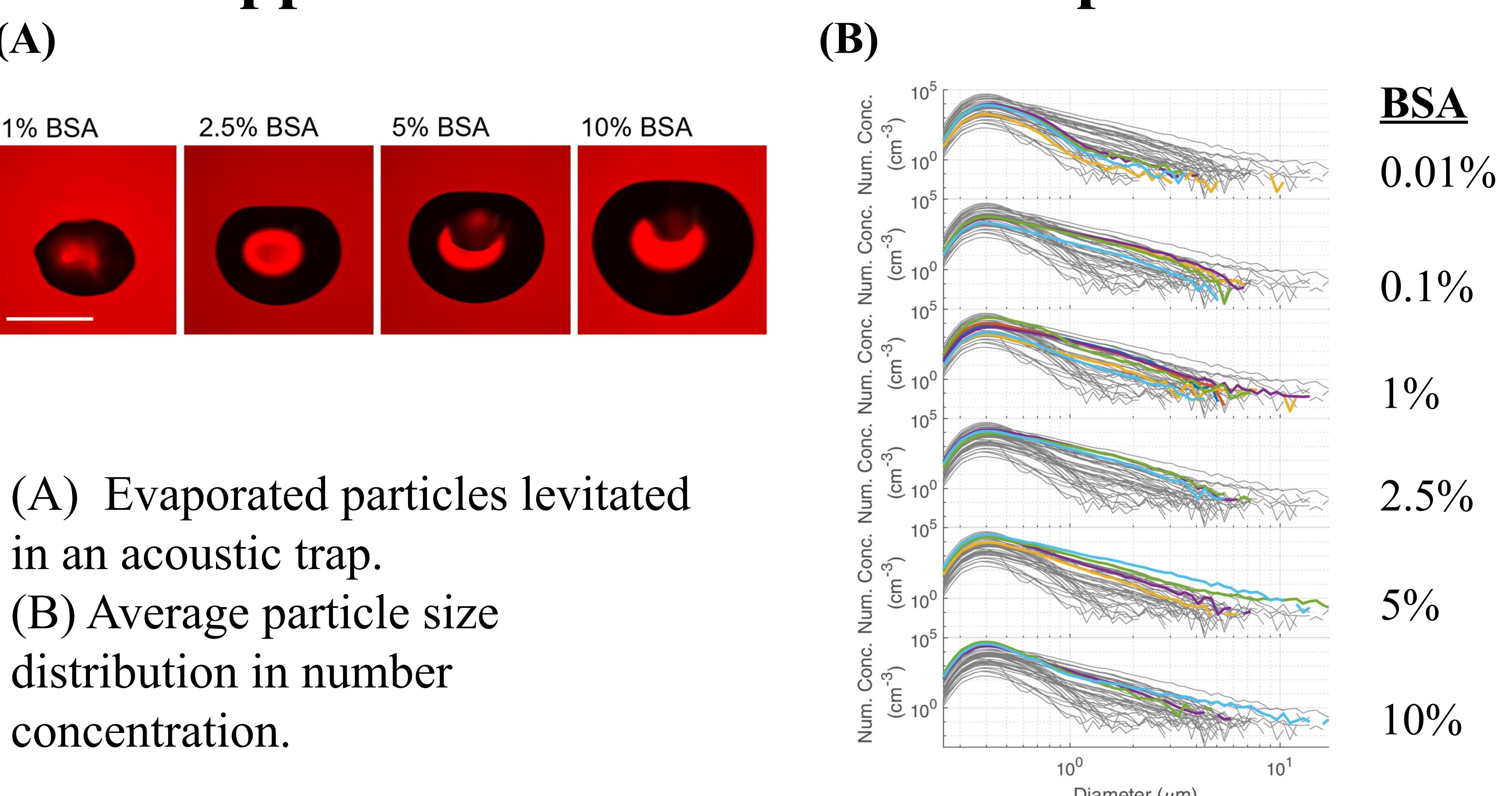
1. BSA (Bovine Serum Albumin) protein
2. Suspension Media (SM) buffer

Media outperforms commercial artificial saliva product.

Spray media protects two other phages



BSA supplementation increases droplet size



Impact, Significance, Future Work

- Spray media enables us to use surrogate phages for R&D efforts on killing, capturing, containing, and detecting viruses.
- Saliva is generally protective for airborne viruses. Results imply that the soluble protein content in saliva is a key contributor to this effect.
- Future studies should investigate if this media preserves viability of phages or other microbes on dried droplets or static aerosols.

