



Viral Preservation with Saliva Mimicking Medium in Aerosols

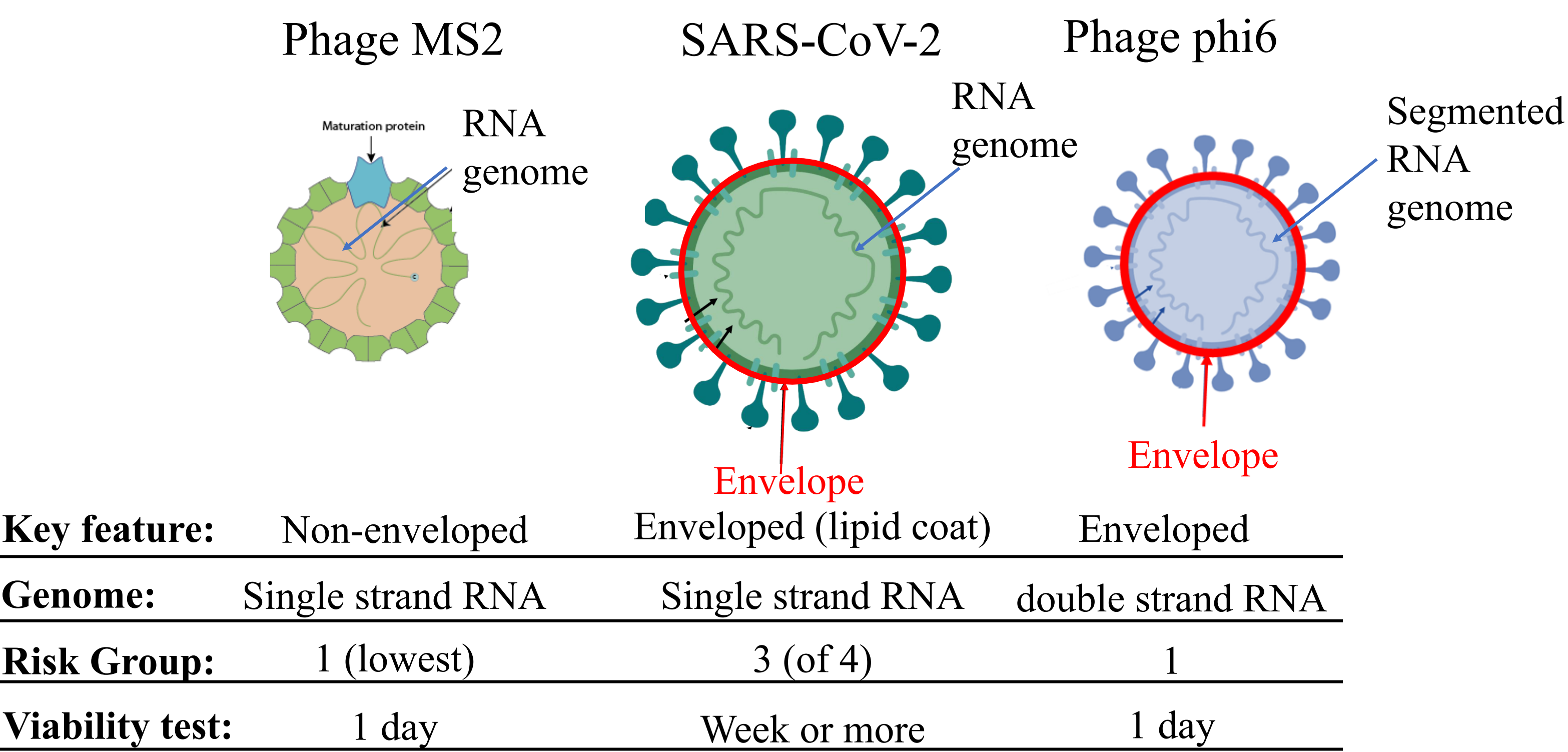
Brittany Humphrey, Matthew Tezak, Mia Lobitz, Anastasia Hendricks, Andres Sanchez, Jake Zenker, Steven Storch, Ryan D. Davis, Bryce Ricken, Jesse Cahill

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

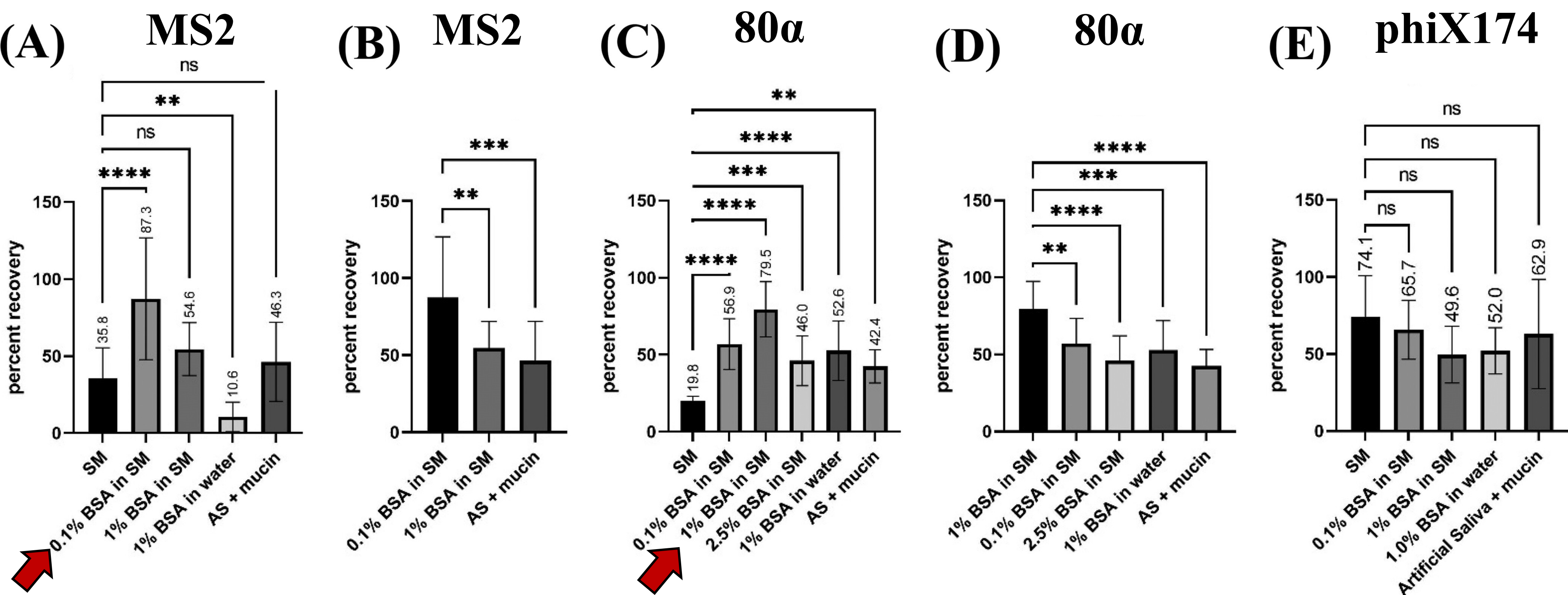
Problem: Surrogate phages are much less stable in aerosols compared to their pathogen counterparts.

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

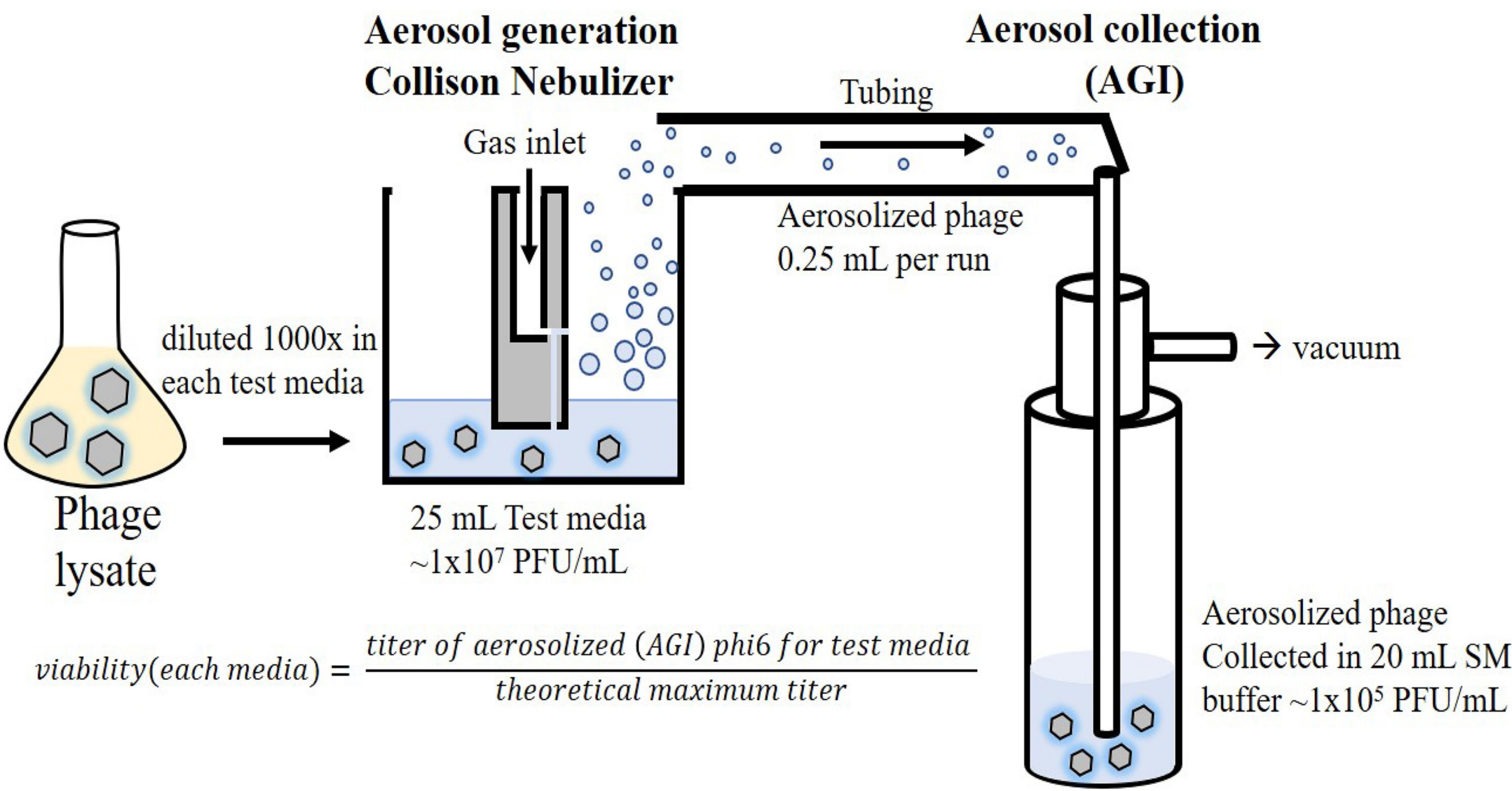
Phages: Safe surrogates of pathogenic viruses



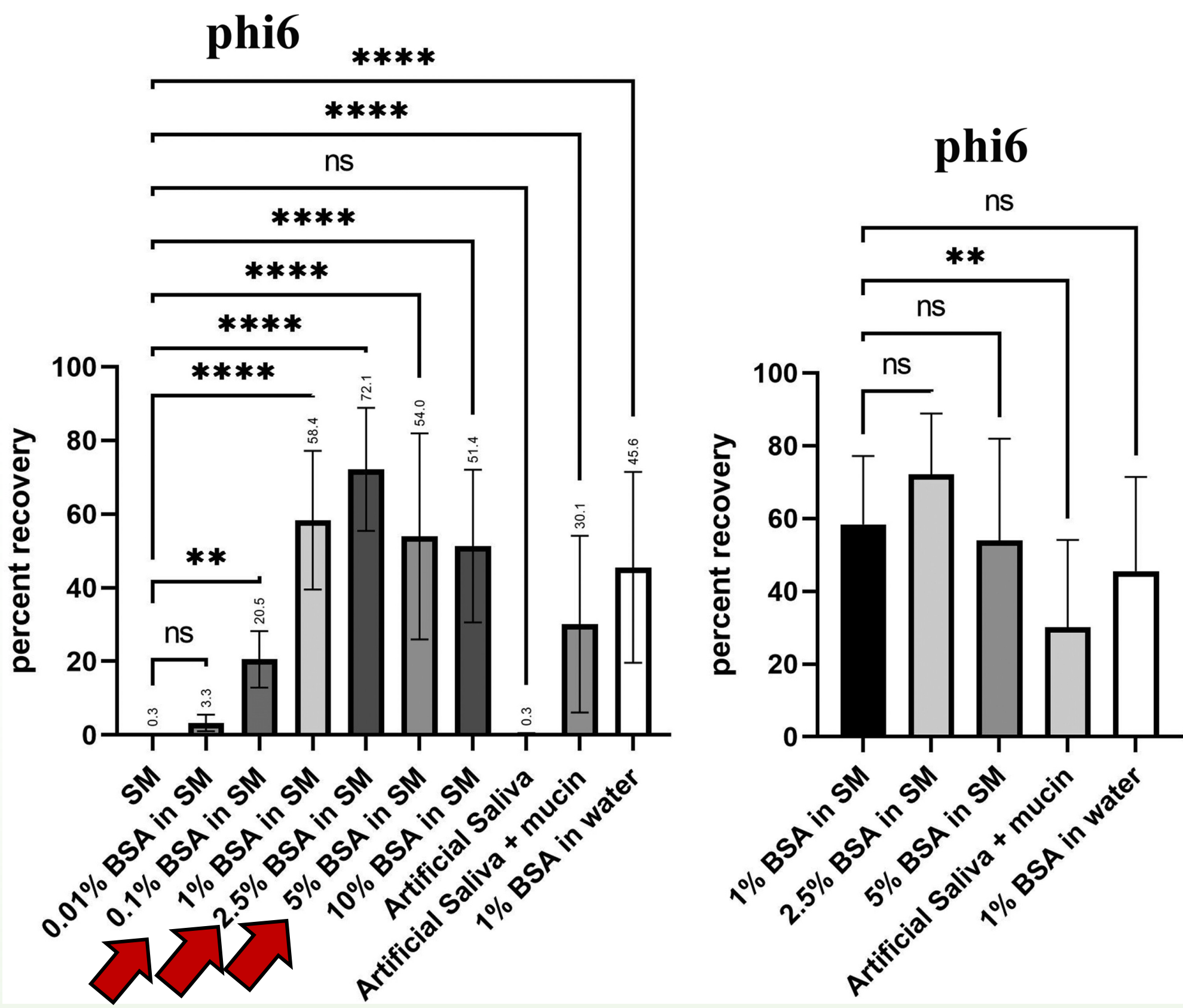
Spray media protects two other phages



Biological Aerosol Exposure Testbed



Protein in spray media stabilizes phi6 in aerosols

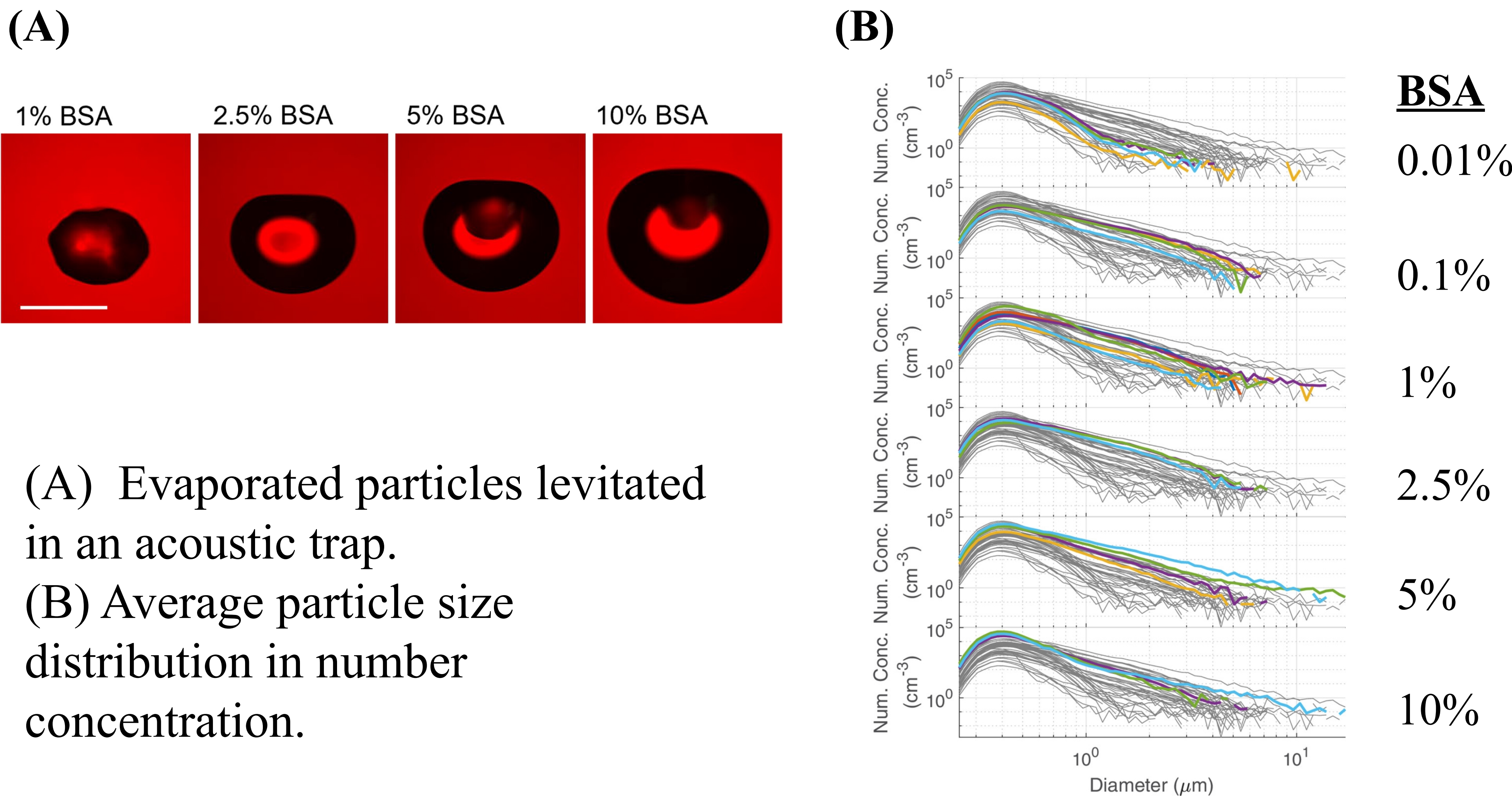


Our spray media consists of two components:

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

Media outperforms commercial artificial saliva product.

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.

