

Are We in Post-Antibiotic Era?

A Three-Minute Pitch for Policy Makers

(2nd Runner-up during DOST-PCHRD 3-minute Pitch for Policy Makers)

Dr. Supachai Basit



Dr. Supachai A. Basit is a highly accomplished academic leader, educator, and researcher with over 28 years of service in the fields of medical technology, microbiology, and science education. He currently holds the position of Founding Dean of the School of Medical Technology and former Director for Research and Development of Emilio Aguinaldo College in Cavite. Dr. Basit also serves as a PROFESSORIAL Lecturer at institutions such as the University of Santo Tomas and Centro Escolar University. He was the past national president of Philippine Society for Microbiology.

He holds a Ph.D. in Science Education (major in Biology) from De La Salle University in Manila where he received

Outstanding Dissertation, Master of Science in Medical Technology from Philippine Women's University, and a Master's in Biology Education from the University of Santo Tomas. In 2022, Dr. Basit completed the post-graduate training in the Community College Administrator Program at Florida State University, furthering his expertise in educational leadership and administration through the scholarship program granted by the U.S. State Department.

Dr. Basit has received numerous prestigious awards, including the Crisanto Almarino Memorial Award for Research in 2011 given by the Philippine Association of Medical Technologists (PAMET), Outstanding Professional of the Year in Medical Technology (2017) from the Professional Regulation Commission and the Most Outstanding Medical Technologist (2017) given also by PAMET. He was also awarded the International Leadership Grant for Microbiology Educators (2015) by the American Society for Microbiology, among other honors for his excellence in teaching, research, and community service. He was recently awarded as one of the outstanding medical technologists diamond honorees during the 60th Diamond PAMET Convention.

#hugot

I am Dr. Supachai Basit, the 2017 PAMET and PRC's Most Outstanding Medical Technologist and a son of a diabetic. My mom was diabetic and her foot was amputated because of an infection with multidrug resistant or MDR bacteria known as MRSA or *Methicillin Resistant Staphylococcus aureus*.

According to the latest report of the Anti-microbial Resistant Surveillance Program of the Department of Health, there were 123,949 reported MDR bacteria from 24 sentinel sites in the Philippines. The profound finding is 22.8% year-over-year increase for MRSA or Methicilline Resistant *Staphylococcus aureus* (MRSA). Aside from MRSA, resistance is also seen in *Escherichia coli* and *Pseudomonas aeruginosa*. And in 2050, the World Health Organization predicted that 10 million people will die from MDR worldwide!

#scary

The number of multidrug resistant rates have steadily been increasing each year. However, the ultimate research gap is there has been no significant discovery of natural antibiotics since 1987. #NotAFakeNews

Based on these tenets, we conducted research on bacteriophages. Bacteriophages, the viruses that could prey on bacteria by means of lysing or destroying its bacterial cell like the one that was captured in one of our electron micrographs. We have been collecting bacteriophages from sewages in Dasmarinas using multidrug resistant bacteria as host cells such as *S. aureus*, *E. coli*, and *Pseudomonas*. Our findings showed that these bacteriophages had significantly caused lysis and destruction of the bacterial cells even if they are multidrug resistant. And since viruses are host specific, they will only target the bacterial cells not the human host cells. Even in high doses, they are reported not to cause damages in the ears, kidneys and liverthe common problems that most clinicians are encountering when prescribing high dosages of antibiotics.

The results of our study indicate that there is an alternative for our problems. However, we cannot use them yet because there have been no clinical trials. Therefore, I am here to urge our DOH Secretary to endorse a policy that could change the lives of many Filipinos. This is the endorsement of using bacteriophages for randomized controlled clinical trials. I am also urging the CEOs of pharmaceutical companies present in this room to take the challenge. Invest in Science! Sponsor clinical trials of bacteriophages for a healthier Philippines, one research at a time!

Before I end, I would like to answer the lone question in the slide. Are we in post-antibiotic era? The answer is, not yet! But are we waiting for such a day to come? The answer lies in your hands!

This has been Supachai Basit and I am reminding everyone that we can do all things through Christ who strengthens us. Good afternoon!