

Babar K. Khan MS, MT
Curriculum Vitae
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EDUCATION

- Master of Science** - Biology; Certificate in Stem Cell Biology 2011
University of Medicine and Dentistry (UMDNJ), New Jersey
Research Thesis: *The Effect of Dispersin B on colonization of biomaterials by Staphylococci*
- Bachelor of Science**- Environmental and Organismal Biology 2008
State University of New York at New Paltz, New Paltz, NY
Dean's List
- Associate of Arts** – Liberal Arts and Humanities 2006
State University of New York at Ulster, Stone Ridge, NY

PROFESSIONAL & EDUCATION AFFILIATIONS

- American Society for Microbiology (ASM), *Member* 2011- Present
- American Association for the Advancement of Science (AAAS), *Member* 2014- Present
- Clinical and Laboratory Standards Institute (CLSI), *Contributor* 2012- Present
- Medical Laboratory Scientist, *NYS License #015611* 2011- Present
- New York Academy of Science, *STEM Mentor* 2012- Present
- NJ SEEDS, *Science Tutor* 2010- 2011
- SUNY Biology Club, *Vice President* 2007- 2008

WORK/RESEARCH EXPERIENCE

Sr. Associate Scientist, Manager of Microbiology Affairs 07/2011 – 01/2014
ContraFect Corporation, Yonkers, NY

CF-301, Lead Drug Candidate

Characterization and development of a *Staphylococcus* bacteriophage endolysin, to support investigational new drug (IND) application to the Food and Drug Administration (FDA).

- Pre-IND microbial work, including MIC, Check-board, lytic, and time-kill assays in accordance to CLSI guidelines.
- Automation and optimization of microbial and immunological assays
- Develop and validate bacteremia infection models in mice *in vivo*
- Coauthor reports for submission of IND to the FDA (pre-clinical section)

Biofilm Agents Program

Self-directed research focused on developing and executing corporate anti-biofilm program.

- Attended conferences and reviewed current literature to design relevant experiments.
- Manage research staff to accelerate discovery and development by assessing detachment, inhibition and activity spectrum on a range of pathogenic microbes.
- Liaison with business development and provide reports to Senior Executives (CEO/CSO/VP)

Microbiology Affairs

Assist VP of Research in developing research plan and conduct research meetings. Control literature library resource. Project planning and resource management.

Machine Learning, Automation

Worked alongside Sr. Scientific Director to design, develop, and validate High-Throughput System for Antimicrobial Susceptibility Testing using Tecan's EVO Freedom platform in compliance with CLSI standards.

Biosciences Scientist**01/2011- 07/2011**

General Electric Global Research Center, Niskayuna, NY

Next Generation Anatomical Pathology

Developed technology platform for highly multiplexed (20+) immunofluorescence (IF) microscopy imaging and analysis instrument to design specialized oncological panels.

- Screen traditional Immunohistochemistry antibody for known oncological biomarkers using tissue arrays.
- Conjugate Cy3/Cy5 IF dye to down-selected Primary Ab from initial screen.
- Characterize novel IF Ab in relation to traditional IHC staining.
- Validate on lung, breast and skin cancer arrays.
- Generate report for pathologist and department review.

Medical Laboratory Scientist; Immunohistochemistry Technologist I**07/2010 – 01/2011**

LabCorp (formally Genzyme Genetics), Manhattan, NY

High throughput oncological and genetic diagnostics

- Assisted in HT testing of incoming clinical samples using semi-automation on Leica BondMax and Ventana ISH Stainer.
- Quality Control/ Quality Assurance of outgoing samples, with Pathologist follow-up as needed.

Laboratory Research Associate**01/09 – 07/2010**

Laboratory of Jeffrey Kaplan PhD, Newark, NJ

DispersinB

Research on assessing synergies and investigation of scope of DispersinB, a biofilm dispersal enzyme discovered by Kaplan. Extensive work with *Staphylococcus aureus* and *S. epidermidis* biofilm inhibition and detachment. Collaborated to:

- Assess synergies between Pulmozyme and DispersinB in biofilm detachment.
- Incorporation into biomaterials (tissue scaffolding) and hydrogel matrices to prevent bacterial attachment based on local triggers (pH, acidification).

PUBLICATIONS & POSTERS

R. Schuch, H. Lee, **Babar Khan**, B. Schneider, K. Suave, C. Law, J. Rotolo, Y. Horiuchi, D. Couto, Assaf Raz, V Fischetti, D. Huang, R. C. Nowinski, M. Wittekind 2013. **Combination Therapy with Lysin CF-301 and Antibiotic is superior to Antibiotic alone for treating MRSA-induced Murine Bacteremia.** *Journal of Infectious Diseases*

R. Schuch, **Babar Khan**, M. Wittekind, R. Nowinski, D. Huang, V. Fischetti. **CF-301, a Phage Lysin, is a Potential Eradicator of *Staphylococcus aureus* Biofilms.** 53rd ICAAC 2013 Conference

R. Schuch, **Babar Khan**, K. Suave, C. Law, A. Raz, M. Wittekind, R. Nowinski, D. Huang, V. Fischetti. **CF-301, a Phage Lysin, Demonstrates Rapid Bactericidal Synergistic Activity Against *Staphylococcus aureus*.** 53rd ICAAC 2013 Conference

S. Pavlakhina, J. Kaplan, L. Xu, W. Chang, X. Yu, S. Madhyastha, N. Yankandawala, A. Mentbayeva, **Babar Khan**, S. Suskhisvili 2012. **Noneluting enzymatic Antibiofilm coatings.** *ACS Applied Materials & Interface*

RELEVANT HONORS, ACHIEVEMENTS, AND AWARDS

- Mentored team to 3rd place finish in Intel International Science and Engineering Fair for work entitled, “Reinventing Antibiotics: A Study to Determine If the Addition of a Gram-Positive Lysin Can Prevent the Development of Resistance to Vancomycin and Daptomycin in MRSA (Phoenix, AZ, 2013)
- Helped author “CF-301 in combination with other anti-staphylococcal agents for the treatment of *Staphylococcus aureus* blood stream infections, including those infections with right-sided infective endocarditis, caused by methicillin-susceptible and methicillin-resistant isolates” (IND# 113473; 2013)