

Superbugs and Strategies against Multi-Drug Resistant Bacteria

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The “catastrophic threat” of antibiotic resistance has prompted research into new methods of combating bacterial infection. We will discuss the rise of resistance and methods to combat this evolutionary outcome. One such pervasive strategy employs cationic antimicrobial peptides, CAMPs. These peptides use their structure to target and disrupt bacterial membranes. They rearrange membrane constituents, forming pores to leak vital cell components or solubilize the membrane to lyse the cell completely. Most show broad spectrum activity, adequate potency, and minimal resistance. Considering these peptides have been active against pathogens for millions of years and have not developed any broad resistance, they are of particular interest to study.

Professor Susan Gillmor conducts research at George Washington University reflecting her biomaterials and surface science background. Her PhD work at University of Wisconsin-Madison under the guidance of Professor Max Lagally focused on DNA microarrays. While conducting research at Penn State in Paul Weiss’ lab, she began to explore lipids and the fundamental roles in cellular processes. In her lab at GW, they delve into biophysical materials, exploring the fundamental behavior of lipids and antimicrobial peptides.

POSITIONS

Assistant Professor, George Washington University,	Chemistry	2007
Postdoctoral Scholar, The Pennsylvania State University	Chemistry	2004-2006
Senior Staff Scientist, Trex Enterprises	R&D	2002-2003

EDUCATION

Williams College	B.A.	06/96 Chemistry
University of Wisconsin-Madison	M.S.	08/99 Material Science
University of Wisconsin-Madison	Ph.D.	12/02 Material Science
The Pennsylvania State University	Postdoctoral	12/06 Chemistry