



[\[Journal Home Page\]](#) [\[Search the Journals\]](#) [\[Table of Contents\]](#) [\[PDF version of this article\]](#) [\[Download to Citation Manager\]](#)

Langmuir, **23** (17), 8670 -8673, 2007. 10.1021/la701067r S0743-7463(70)01067-3

Web Release Date: July 21, 2007

Copyright © 2007 American Chemical Society

Single-Walled Carbon Nanotubes Exhibit Strong Antimicrobial Activity

Seoktae Kang, Mathieu Pinault,† Lisa D. Pfefferle, and Menachem Elimelech*

Department of Chemical Engineering, Yale University, P.O. Box 208286, New Haven, Connecticut 06520-8286

Received April 12, 2007

In Final Form: June 12, 2007

Abstract:

We provide the first direct evidence that highly purified single-walled carbon nanotubes (SWNTs) exhibit strong antimicrobial activity. By using a pristine SWNT with a narrow diameter distribution, we demonstrate that cell membrane damage resulting from direct contact with SWNT aggregates is the likely mechanism leading to bacterial cell death. This finding may be useful in the application of SWNTs as building blocks for antimicrobial materials.

[\[Full text in html\]](#)

[\[Full text in pdf\]](#)