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## Metabolomics Reveals Vicious Cancer-Biofilm Cycle

Cell Metabolism: Colon cancer stimulates growth of cancer-promoting bacterial biofilms that in turn stoke cancer cells

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Department: [Science & Technology](#)  
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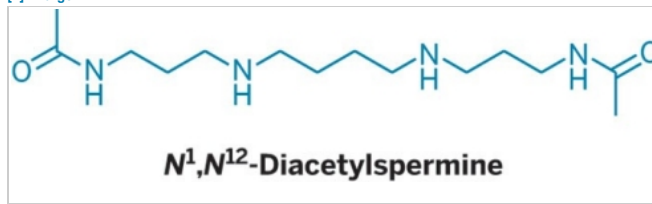
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Researchers have proposed that bacterial biofilms might play a role in colon cancer, but experimental verification for the proposal has been sparse. A new study of the phenomenon now reveals a vicious cancer-biofilm cycle: Colon cancer stimulates further growth of bacterial biofilms in the colon, and the biofilms promote further proliferation of the cancer (*Cell Metab.* 2015, DOI: [10.1016/j.cmet.2015.04.011](#)). The findings show that antibiotic treatment of bacteria eliminates biofilms and therefore might impede cancer development. [Gary Siuzdak](#) of Scripps Research Institute California, [Cynthia L. Sears](#) of Johns Hopkins School of Medicine, and coworkers used metabolomics and nanostructure-initiator mass spectrometry imaging to demonstrate that levels of a cancer-promoting polyamine metabolite,  $N^1, N^{12}$ -diacetylspermine, not only are raised significantly in colon cancer tissue but also are more abundant when biofilms are present in the colon. Antibiotic treatment clears the biofilms and decreases levels of  $N^1, N^{12}$ -diacetylspermine to normal concentrations. "These results show that colonic mucosal biofilms alter the cancer metabolome to produce a regulator of cellular proliferation and colon cancer growth, potentially affecting cancer development and progression," the team writes.

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