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Understanding the Bacterium that Causes Syphilis

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(PhysOrg.com) -- An article published in this week's *Proceedings of the National Academy of Sciences* goes a long way toward improving understanding of the bacterium that causes syphilis and may lead to novel therapeutic approaches for the disease.

"Syphilis continues to be a major global public health problem," says Dr. Justin Radolf, a professor in the Departments of Medicine and Genetics and Developmental Biology. "In fact, more children in underdeveloped countries are born with syphilis than with HIV."

Syphilis is a sexually transmitted infectious disease caused by the spirochete Treponema pallidum. Radolf, along with researchers from Wake Forest University School of Medicine and the Centers for Disease Control and Prevention, evaluated the major protective antioxidant systems of the bacterium.

"Research on this organism is challenging because it cannot be cultivated in vitro, greatly complicating our efforts to understand how the pathogen survives in people for such long periods of time," explains Radolf.

"The work presented in this paper is important because only a very few of the normally wide variety of antioxidant proteins are expressed in these pathogens, suggesting that they may provide most or all of the oxidant protection afforded to the long-lived bacteria which persist in a very highly inflammatory environment rife with white blood cell-generated oxidants."

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