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“Lyme disease. Novel composition of phytochemicals as an approach against Lyme disease”

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Lyme disease is a multi-systemic bacterial infection transmitted by ticks. Because LD has emerged as the most common vector-borne disease worldwide and has been associated with a significant health care concern after treatment with conventional antibiotic therapies, new treatment approaches are needed. Naturally derived substances that could work synergistically to display higher efficacy compared to the individual components may serve as such resource to combat both active and latent forms of *Borrelia sp.* that cause Lyme disease. Using checkerboard assay, we investigated the anti-borreliae reciprocal interactions of phytochemicals and micronutrients against two species of *Borrelia*, selected as prevalent causes of Lyme disease in the US and Europe. Moreover, we tested them in form of defined mixture in vitro and *in vivo*. Tested combinations of polyphenols and fatty acids revealed synergistic or additive effects against active and/or dormant forms *Borrelia sp.* Moreover, define mixture of theses polyphenols and fatty acids were effective in Lyme disease animal model. In summary, the results show that specific composition of phytochemicals may play a supporting role in combating *Borrelia sp.* and serve either as an adjunct or alternative treatment for Lyme disease.

Biography

Anna Goc obtained her MS and PhD from the Jagiellonian University, Cracow, Poland. She conducted her Postdoctoral training at Case Western Reserve University, Cleveland, OH, and the University of Georgia, Athens, GA. She also worked as a Research Biologist at the VA Medical Center, Augusta, GA. Currently, as a Head of Infectious Diseases Division at Dr. Rath Research Institute, Santa Clara CA, she leads a Lyme disease project. She has published over 30 peer-reviewed publications, two book chapters, and has presented her research at numerous national and international scientific meetings. She is also an active member on one editorial board and the recipient of several national and international awards.

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