



Conference Abstract

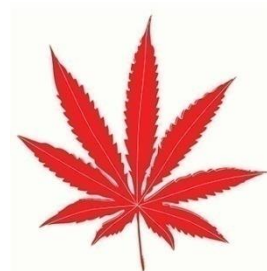
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A Response to COVID-19

International Conference of Pharmaceutical and Medical Sciences

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Faculty of Pharmacy For Girls - Al Azhar University, Cairo, Egypt.



Conference Abstract

A PROBIOTIC VACCINE VECTOR AND ITS IMPACT ON IMMUNE RESPONSE AND THE MICROBIOME

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The authors declare no competing
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ABSTRACT

The potential role of probiotic bacteria as adjuvants in vaccine trials led to their use as nonparenteral live mucosal vaccine vectors. Yet, interactions between these vectors, the host and the microbiome are poorly understood. In this presentation we evaluate impact of three probiotic, *Lactobacillus acidophilus*, vector strains, and their interactions with the host's immune response, on the gut microbiome. One strain expressed the membrane proximal external region from HIV-1 (MPER). The other two expressed MPER and either secreted interleukin-1 (IL-1 β) or expressed the surface flagellin subunit C (FliC) as adjuvants. We also used MPER with rice bran as prebiotic supplement. We observed a strain dependent, differential effect suggesting that MPER and IL-1 β induced a shift of the microbiome while FliC had minimal impact. Joint probiotic and prebiotic use resulted in a compound effect. We concluded that careful consideration of constitutive adjuvants and use of prebiotics is needed depending on whether or not to target microbiome modulation to improve vaccine efficacy. No clear associations were observed between total or MPER-specific IgA and the microbiome suggesting a role for other immune mechanisms or a need to focus on IgA-bound, resident microbiota, most affected by an immune response

Speaker's Biography

Much of his work has been focused on microbiome research and the relationship between host immune system and the microbiome as it is influenced by external perturbations including vaccination, prebiotics, probiotics, antibiotics and other factors such as viral, or

Additional information is available
at the end of the article.

other, infections. He studies viral evolution including Avian Influenza and Rabies. He also studies plasmid transfer and evolution as it impacts acquisition, transmission, and maintenance of antimicrobial resistance. Another major line of research within his lab, is developing inferential and predictive models and machine learning methods to facilitate understanding of these biological systems.

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