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Effect of Nostoc EGY lysate on immune response during HCV infection

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Hepatitis C virus infection represents one of the major health problem that affects human population all over the world. In Egypt 10%-20% of the general population is infected with HCV. Type I interferon was secreted from the intrahepatic immune cells during the early days of infection followed by production of Interferon β (IFN- β) as indicated in HCV infected chimpanzee animal model. At the same time, HCV starts to attenuate the immune response and the production of specific HCV immune clearance. Blue green algae especially Spirulina species was well studied of its modulation on human immune response. In the present study, whole lysate from non-toxic blue green algae isolated from rice fields at River Nile delta in Egypt identified as Nostoc sp EGY (Accession number: JQ220407 and JQ220408) was used in order to determine the exact effect of this lysate on immune response during HCV infection. Our data showed that the component of this lysate can induce immune stimulation of human Peripheral Blood Mononuclear Cells (PBMC) at concentration range of 10-500 μ g/ml as well as viral clearance at low concentration as of 1 ng/ml. On the other hand, concentrations of this crude lysate ranging from 100 μ g-10mg/ml can stimulate normal human neutrophils to ingest (phagocytosis) and kill life Candida in an in vitro test. This indicates that total crude extract from non-toxic blue green algae can represent good candidate for preparation of safe and effective immune therapy for HCV treatment.

Biography

Sahar M F Fathy is currently working as a Lecturer of Microbiology, Faculty of Allied Medical Sciences, Pharos University in Alexandria, Egypt. She completed her PhD in Microbiology from Alexandria University, Egypt. She has published several research articles and presented several biotechnology posters in many national and international conferences. Her Research expertise is in Microbiological Evaluation of pharmaceutical products, natural products, tissue culture and biotechnology.

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