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Cholesterol uptake in mammalian cells supplemented with edible bird nest (EBN) extract**Mokrish Ajat, Akmal M N, Salleh F, Intan-Shameha A R, Mansor R, Aini I, Goh Y M, Ahmad H, Omar A R, Abas F and Song L K**
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Edible bird's nest (EBN) is one of the most expensive health supplements in the market. EBN derives from the secretion of salivary glands produced by male swiftlets (*Aerodramus fuciphagus*) during breeding season. In general, EBN consists of glycoproteins such as; N-acetylneuraminic acid (sialic acid), galactosamine and glucosamine. For centuries, EBN has been used as medicinal remedy in Traditional Chinese Medicine (TCM) with several medicinal properties, such as anti-cancer, immune enhancer, anti-oxidant, energy and metabolism stimulant, anti-aging and anti-viral. However, limited number of research has been conducted to support such claims. This research has been designed to investigate the role of EBN in cholesterol uptake and storage metabolism in mammalian cell lines (Hep-G2). EBN extract was prepared by stewing method in water bath at 70°C for 5 hours. Supernatant consist of EBN aqueous extract was collected and extracted via cold acetone technique before quantified. Cell viability of Hep-G2 against EBN was determined by MTT assay. Hep-G2 cells were supplemented with EBN extracts at different concentrations together with exogenous cholesterol for 24 hours. After overnight incubation, cells collected were analyzed to see the effect of EBN in cholesterol uptake in Hep-G2 cells. Gene expression of LDL-R and enzymes (LCAT and DGAT2) were assessed using conventional PCR and quantitative PCR (qPCR). Distribution of LDL-R associated membrane plasma was also observed via immunofluorescence staining using specific antibody conjugated with immunofluorescence stain. This study provides an important explanation whether EBN can be used as food supplements to reduce cholesterol or LDL in blood circulation hence reduce the possibilities of plaque formation that eventually leads to atherosclerosis.

Biography

Mokrish Ajat holds PhD degree in Biochemistry from Utrecht University, Netherlands. His Doctoral research training focuses on the dynamics of lipid droplets formation in hepatic stellate cells. He is currently attached as a Senior Lecturer in the Faculty of Veterinary Medicine, Universiti Putra Malaysia. His research interest is in elucidating the effects of various compounds on lipid metabolism and lipid related diseases. He is in the supervisory committee of a number of postgraduate students, either as main Supervisor or Co-Supervisor.

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