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Novel use of grape seed extract and delta-tocotrienol as supplements in induction of pro-inflammatory cytokines in mice liver

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Non-alcoholic fatty liver disease (NAFLD) includes a broad spectrum of liver abnormalities ranging from steatosis to non-alcoholic steatohepatitis (NASH). The present study was designed to observe the effect of grape seed extract (GSE) and delta-tocotrienols (d-T3) as supplements in C57BL/6 mice fed a high fat diet (HFD). In that aim, 64 male C57BL/6 mice were randomized into eight groups for 20 weeks; AIN-G (7% fat) diet, a HFD (42% fat) as control groups. GSE and d-T3 as supplements for 10 weeks with either GSE alone (1%; 2%) or d-T3 (0.025%; 0.5%), and in combination with HFD respectively. Being asymptomatic, fatty liver is often undetected, with no accurate laboratory diagnostic tool for it. Liver histology was done using three separate staining methods. Mice mean body weight and dietary intake was measured. All liver triglycerides content was measured by standard spectrometric technique. Fluorescence detection using a confocal microscope (Nikon, Inc) primary antibodies CD4+, CD8+ and alpha-smooth muscle actin (alpha-SMA) was used. One-way ANOVA ($p \leq .05$) were considered as significant (SPSS, version 15). Mice on GSE supplemented groups reached lower total body weights and relative liver weights and total adipose tissue weights ($p \leq .05$) compared to control groups. Similarly, there was decrease in the steatosis and fibrosis. The immunofluorescent liver histomicrographs, showed differences in number of hepatic cells stained for CD4+, CD8+ and alpha-SMA respectively. The staining was lowest in GSE combination groups. Supplementation alone and in combination of GSE and d-T3 may ameliorate the histopathological features in C57BL/6 mice.

Biography

Sharadha Sodhani has completed her PhD in Nutrition and Food Science with a subdiscipline of Molecular Biology at Texas Woman's University, USA in 2012. Sharadha Sodhani found a job immediately after the degree completion and has worked for General Nutrition Center, Inc. Pittsburgh, USA. Currently, she is assistant professor at Amity University, India one of the premier private institutes in the country. She has published in reputed journals and has been serving as an editorial board member of repute. Shradha has been active in presenting at National meeting and local meetings.

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