

## **Edible bird's nest (EBN) supplementation ameliorates the progression of hepatic changes and atherosclerosis in hypercholesterolaemic-induced rats**

### **ABSTRACT**

Persistence consumption of high-fat diet (HFD) is mainly attributed with the development of hypercholesterolaemia, which served as the major factor for the development of atherosclerosis in the blood vessels. As the hypercholesterolaemia progress, hepatic manifestation will occur including non-alcoholic fatty liver diseases (NAFLD). Therefore, the vascular and hepatic system is the most affected organs when chronic hypercholesterolaemia developed. In the present study, we have adopted consistence consumption of HFD and synergic xenobiotic administration (Triton X-100- TX100) to induce hypercholesterolaemia. This study involved 30 (N) male Sprague Dawley rats aged 10 weeks that randomly assigned into five different groups (n=6), including baseline control (normal diet rat- BC) and hypercholesterolaemic groups (HG) that consist of negative control (HFD and TX100- NC), positive control (HFD, TX100 and Simvastatin- PC), EBN soup-treated group (HFD, TX100 and EBN soup- EBNS) and EBN extract-treated group (HFD, TX100 and EBN extract- EBNE). After 12 weeks, the rats were euthanized and liver and cranial thoracic aortic were collected and processed accordingly for histological evaluation (H&E) and scanning electron microscope (SEM). Based on our observation, hepatic parenchyma of EBNS group had the least hepatic changes compared to PC and EBNS groups (which both groups have the same magnitude of hepatic changes); and moderately improved than NC group. Meanwhile, EBNS and PC showed great anti-sclerotic effect, while the EBNE had no effect in preventing atherosclerosis formation (equivalent with NC group). These findings suggested that EBNS have a good effect in slowing down hepatic changes and atherogenesis.

**Keyword:** Edible bird's nest (EBN); Hypercholesterolaemia; Liver; Atherosclerosis; Microscopic evaluation