

7th Obesity & Endocrinology Specialists Congress

October 10-12, 2016 Manchester, UK

A synergistic effect of *fucus vesiculosus* extracts and alginate on inhibition of lipase

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Obesity is one of the most important issues in global health. Orlistat is the only approved pharmaceutical treatment for obesity. However, side effects may appear in individuals who use Orlistat such as fecal incontinence, oily spotting, and increased defecation frequency. Other lipase inhibitors derived from natural products such as seaweed are being investigated. However, their side effects on lower bowel function are likely to be similar to Orlistat. In order to reduce GI side effects, we are investigating synergistic effects of fibrous alginate and seaweed extracts. Three types of alginate were added to 3 different *f. vesiculosus* extracts, and the ability of the mixtures to inhibit lipase activity was tested. A modification of the method of was used to determine the inhibitory effects of the mixtures of *f. vesiculosus* extracts and alginates on lipase activity. This study showed that all *fucus vesiculosus* extracts tested can inhibit lipase activity. All the extracts had a similar inhibitory effect on lipase activity. Alginate manugel DMB was the best inhibitor on lipase activity assay followed by alginate PH157 and LFR5/60, respectively. The results showed that the synergistic effect between *f. vesiculosus* extracts and alginates (PH157 and LFR5/60) improved the lipase inhibition. However, the mixtures of *f. vesiculosus* extracts and alginate manugel DMB did not show any improvement in lipase inhibition. Further studies need to be carried out in order to characterize the mechanism of *f. vesiculosus* extracts and alginate mixtures on lipase activity.

Biography

Moaz Zulali is an MSc Nutritional Science Graduate of Northumbria University in Newcastle upon Tyne. He is a BSc Biology Graduate of College of Education (Scientific Section) of King Abdulaziz University. He is interested in Physiology and Nutrition Science. Currently, he is studying PhD of Physiology in Institute for Cell and Molecular Biosciences at Newcastle University.

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