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Acute effects of different dietary polysaccharides added in milk on food intake, postprandial appetite and glycemic responses in healthy young females

Muhammad Umair Arshad[1, 2], **Saima Irfan**[3], **Angela Wong**[2], **Farhan Saeed**[1] and **Ali Imran**[1]
[1]Government College University Faisalabad, Pakistan
[2]University of Toronto, Canada
[3]Government College for Women University Faisalabad, Pakistan

Dietary polysaccharides may contribute to metabolic and physiological regulations, including satiety and glycemia, because of their properties of adding bulk and producing viscosity. In the present study we compared the postprandial glycemic and satiety responses of different dietary polysaccharides when added in milk (2% M.F.). The objective of this study was to evaluate the potential of different polysaccharides against postprandial glucose, appetite responses and food intake at subsequent meal. In a repeated measures crossover trial, 30 female participants (18-30 years) randomly consumed 250 ml milk 2% M.F. (control), or milk containing carrageenan (2.5 g), guar gum (2.5 g) and alginate (2.5 g). An ad libitum pizza meal was served to measure the food intake at 120 min following the treatments. Alginate and guar gum addition resulted in lower food intake as well as cumulative energy intake at subsequent pizza meal compared with control treatment. The post-treatment (0-120 min) as well as cumulative (0-170 min) postprandial glucose levels and average appetite scores were also significantly suppressed following alginate and guar gum compared with control ($P<0.0001$) with more pronounced effect of guar gum during post-treatment time (0-120 min). However, alginate resulted in significantly lower blood glucose mean values ($P<0.0001$) compared with control as well as carrageenan during post-treatment (0-120 min) and cumulative periods (0-170 min). In Conclusion, addition of polysaccharides in milk particularly, alginate and guar gum would be beneficial in the short term regulation of postprandial glycemia and satiety, respectively.

umair.arshad@utoronto.ca

The clinical trials of Au and Ag nanoparticles biosynthesized using *Commelina nudiflora* L., against the functional mechanism of colon cancer

Natanamurugaraj Govindan[1], **Palaniselvam Kuppusamy**[1], **Mashitah M Yusoff**[1], **Solachuddin J A Ichwan**[2], **Mohd Hasbi Ab Rahim**[1] and **Gaanty Pragas Maniam**[1]
[1]Universiti Malaysia Pahang, Malaysia
[2]International Islamic Universiti Malaysia, Malaysia

Commelina nudiflora L. aqueous extract as a reducing and stabilizing agent for the synthesis of metallic gold and silver nanoparticles in green chemistry approaches. The biosynthesized gold and silver nanoparticles have studied their physicochemical and biological properties in nanoscale regime. The synthesized gold and silver nanoparticles physicochemical properties were characterized by various analytical techniques such as UV-VIS, FESEM, XRD and FT-IR. The outcome shows that the physicochemical characterizations of gold and silver nanoparticles were crystalline in nature with size range between 25-45 nm and 50-150 nm respectively. The EDX spectrum was shown strong signal energy peaks of both gold and silver atoms in 2-3 keV. The *in vitro* antioxidant ability of C. *nudiflora* extracts were studied using DPPH and ABTS radical scavenging assay. Moreover the C. *nudiflora* plant extract synthesized gold and silver metal nanoparticles have significantly control the proliferation of HCT-116 colon cancer cells in in vitro. The biosynthesized gold and silver nanoparticles were showed reduced cell viability and increased cytotoxicity on HCT-116 colon cancer cells with IC50 concentration of 200 and 100 µg/ml. Furthermore, the flow cytometry experiments showed that the IC50 concentrations of gold and silver nanoparticles treated cells are increased DNA fragmentation and significant changes were observed in sub G1, S and G2 cell cycle phases compared with positive control. Additionally, the mRNA gene expressions of HCT-116 cells were studied by RT-qPCR techniques. The pro-apoptotic genes are highly expressed in the gold nanoparticles treated HCT-116 colon cancer model. However, the C. *nudiflora* extract as a novel source for synthesis of metallic gold and silver nanoparticles with controlled size and shapes and also it could be potent anti-colon cancer drug in the near future.

natanam80@gmail.com