22. Evaluation of the Antidiabetic Activity of Roselle (*Hibiscus sabdariffa*) via Inhibition of alpha-Glucosidase Evelyn Ambush & Patience Obih (Evelyn Ambush)

Diabetes mellitus is a chronic disease that has become a global problem. Currently, it is the seventh leading cause of death in the United States and affects more than 25 million Americans. It is associated with many complications such as retinopathy, neuropathy and nephropathy. One of the therapeutic approaches to treat diabetes is to slow down the postprandial hyperglycemia through the inhibition of α-glucosidase. Drugs like acarbose and miglitol that possess this mechanism of action are already in the market. These drugs also produce gastrointestinal symptoms as their side effects. An antidiabetic agent with little or no side effects is preferred and will be a better substitute. The objective of this study was to investigate the inhibitory activities of *Hibiscus sabdariffa* commonly known as hibiscus, roselle, zobo drink, or red tea, on α-glucosidase. Roselle extract obtained by homogenizing the calyces with ethanol in a blender and evaporating the filtrate, was used in enzyme inhibition studies. The study was done in vitro using α-glucosidase obtained from Bacillus Stearothermophilus. The inhibition study was carried out in a 96 well plate using PNPG as the substrate and measured with Thermo Scientific® Multiskan spectrometer. IC_{50} was obtained and compared with that of acarbose. The result showed that roselle has some inhibitory activity on α-glucosidase. However, more studies are needed to elucidate its antidiabetic potential.

23. Angiotensin-(1-7) Decreases Body Weight and Adiposity by Regulating Lipid Metabolism in Rats (Carolina Campos Lima Moreira)

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Objective: The prevalence of obesity and obesity-related diseases, like insulin resistance and metabolic syndrome, continues to increase worldwide. Our purpose was to investigate the role of the peptide angiotensin-(1-7) in the management of adiposity through changes in lipid metabolism.
Methods: We evaluated the lipid metabolism of transgenic rats that overexpress an angiotensin (Ang)-(1-7)-producing fusion protein, TGR(A1-7)3292 (TGR), which induces a lifetime increase in circulating levels of this peptide. Male Sprague-Dawley rats, control (C) and TGR, 12-15 weeks old, were used, and body weight and visceral adiposity index were analysed. Serum levels of triacylglycerols (TAG) and TAG-VLDL were assayed. Lipoprotein lipase (LPL), TAG hydrolases and *de novo* lipogenic activities were evaluated in the epididymal and retroperitoneal adipose tissues. Data are means±SEM ($P<0.05$).
Results: The results obtained in fed rats showed reduction of body weight (20%) and visceral adiposity (35%) in the TGR group in relation to control. Reductions in serum levels of TAG (24%) and TAG-VLDL (14%) were observed in the TGR group when compared to control. Significant reduction of basal lipogenesis in the epididymal (TGR:124±14; C:279±36) and retroperitoneal (TGR:4.4±0.6; C:10.6±0.8) adipose tissues of the TGR group was observed. The transgenic animals also presented decreased LPL activity in the epididymal (TGR:0.70±0.06; C:1.56±0.18) and retroperitoneal (TGR:0.33±0.05; C:0.77±0.11) adipose tissues. TAG hydrolases activity decreased in the epididymal adipose tissue (TGR:0.51±0.03; C:0.71±0.04) and increased in the retroperitoneal adipose tissue (TGR:1.01±0.05; C:0.79±0.05) of transgenic rats.