

Title: Protective effect of Spirulina against bone fragilty induced by *Garcinia cambogia* on high fat diet obese rats.

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Obesity problems are getting epidemic nowadays, many people prefer taking weight loss supplement rather than go for exercise. However they are unaware that some of the supplement may contain ingredients that may be have negative effect. *Garcinia cambogia*, an ingredient which is mostly found in weight loss supplement have been found to cause bone fragility as a result of its weight reducing properity. Spirulina have been reported to protect the bone against bone fragility caused by STZ-induced diabetes. Therefore this study was aimed at evaluating the protective effect of Spirulina on bone fragility caused by Garcinia cambogia on high fat diet obese rats. Thirty-six Sprague Dawley rats (100 – 150 g) were divided into 6 groups (n=6). High fat diet and high fat emulsion were administered via oral gavage to 6 weeks old female Sprague Dawley rats to induce obesity. After 6 weeks of obesity induction, the rats were orally administered with Spirulina (300mg/kg), *Garcinia cambogia*, GC (400mg/kg) and Phenylbutric acid, PBA (300mg/kg) Spirulina ,and spirulina in combination with GC and PBA, reduced BMI significantly ($p<0.05$) below obese range (0.68g/cm^2) as compare to GC and PBA alone. The combination also increased bone mechanical strength test parameters (Maximum force, stress and strain) significantly ($p<0.05$). The result of this experiment shows that spirulina was able to contribute to reduction of weight as well as protect the bone against bone fragility caused by GC and PBA. There are ongoing research on the mechanism of action of spirulina by this study on the gene expression and blood bone markers.

Keywords: Garcinia cambogia, Spirulina, obesity, bone fragility

Biography: Cho Xinyi has completed her degree in Food Science with Nutrition from UCSI University (KL campus), Malaysia and continue with her postgraduate studies from UCSI University as well. Her current study on this topics is a further study on her degree's final year project.

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