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## AN EX VIVO CHELATING EFFECT OF 0.75 mg AND 1.125 mg *MANGIFERA FOETIDA* L. LEAVES WATER EXTRACT ON SERUM OF THALASSAEMIA PATIENTS

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### Background:

*Desferioxamine* is an iron-chelating agent that supports thalassaemia patients with regular blood transfusion to prevent iron overload complication, but it is expensive and has harmful side effects. Therefore, it needs naturally alternative medicine that is safer and more affordable, namely mangiferin, a *C-Glucosylxanthone* contained in *Mangifera indica* L. stem. We used *Mangifera foetida* L. (bacang mango) leaves which is rarely used and contains highest mangiferin among other cultivars. The purpose of this study is to examine the effectiveness of *Mangifera foetida* L. leaves water extract as a chelator agent to serum of thalassaemia patients by ex vivo.

### Materials & Methods:

This is an experimental study using 7 serum (each ferritin equals to 200 $\mu$ M iron) of thalassaemia patients from the Department of Child Health, Cipto Mangunkusumo Hospital in 2009-2010. The experiments which were carried out in standard medium and citrate consist of placebo (serum only), mangiferin 100 $\mu$ g, *desferoxamine* 200 $\mu$ g, and *Mangifera foetida* L. leaves water extract at the dose of 0.75mg and 1.125mg. There were two control groups which consist of mangiferin and *desferoxamine* without serum. Reaction of serum and intervention groups were measured by spectrophotometer at  $\lambda$ =190nm-400nm. Data was analyzed using One-Way Anova,  $p=0.05$ .

### Results:

Data were taken from a spectrophotometer graph which showed that the free extract of 0.75mg, 1.125mg and mangiferin were 2.16, 1.52 and 0.86 respectively. The absorbance peak of most interventions was 280nm. ANOVA analysis showed that data of serum, extract 0.75mg, extract 1.125mg, and mangiferin had significant difference,  $p=0.022$ .

### Conclusion:

It is concluded that *Mangifera foetida* L. leaves water extract at the dose 1.125mg ( $p=0.498$ ) has greater chelating effect to serum ferritin of thalassaemia patients than the dose 0.75mg ( $p=0.044$ ). Mangiferin however, still has the best effectiveness in binding iron among others.

### Keywords:

thalassaemia, *Mangifera foetida* L., chelating effect