



Chemical screening and antifalcemic evaluation of *Cajanus cajan* L. (Fabaceae), a species from the Congo

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ABSTRACT

Sickle cell disease is a genetic disorder that is a public health problem. Given the high cost of treatment, patients turn to traditional medicine with the use of plants, including *Cajanus cajan* L. (pois d'angole).

Objective: The objective of this work was to carry out a phytochemical study and to evaluate *in vitro* the antifalcemic effect of *C. cajan* seeds.

Methodology and Results: This experimental study was carried out in two phases: one devoted to the characterization of the seeds and the other concerned the study of the antifalcemic activity *in vitro* of these seeds. The study of antifalcemic activity was carried out on blood samples from 12 homozygous sickle cell patients aged between 4 and 22 years. The addition of plant extracts to the collected blood made it possible to evaluate the antifalcemic activity by detecting sickle cells under a light microscope. *C. cajan* seeds contain sterols, polyterpenes, polyphenols, flavonoids, tannins and alkaloids. The aqueous, methanolic and dichloromethane extracts decreased sickle cell counts by about 30 minutes of contact.

Conclusion and Application of Results: It appears from this study that *C. cajan* is cited as one of the plants used against sickle cell anaemia. This plant has shown antifalcemic activity *in vitro*, thus confirming the information obtained in traditional medicine and in the literature. This plant could therefore be used as food to relieve those who suffer from this chronic disease. This study showed that *Cajanus cajan* seeds have antifalcemic properties.

Keywords: *Cajanus cajan*, phytochemical screening, anti-sickle cell disease, sickle cell anaemia.