# Pharmacological screening of *Gymnanthemum coloratum* (Willd.) H. Rob. & B. Kahn (Compositae) and *Terminalia ivorensis* A. Chev. (Combretaceae) from DR Congo: Spotlight on the antisickling, antibacterial and anti-diabetic activities

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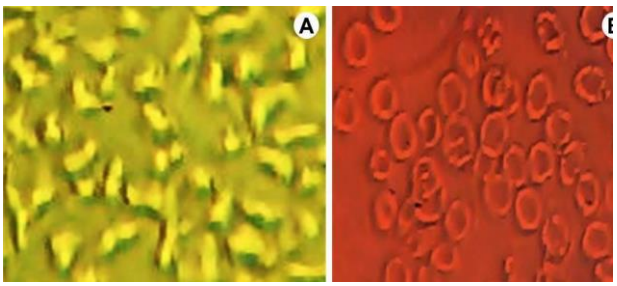
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## I. Abstract

A rare association of two genetic diseases namely sickle cell anemia and diabetes was reported for the first time in a patient from Democratic Republic of the Congo (DRC). Both diseases have a common denominator which is to make patients susceptible to infections and they constitute a serious public health problem in Africa and in DRC. Given the difficult and limited management of these two diseases, the use of traditional medicine and medicinal plants can be an effective alternative. In 2014, leaves of both *G. coloratum* and *T. ivorensis* were collected in Kinshasa and Gbadolite cities respectively and were selected through chemotaxonomic approach. The bacterial strains used for assessing the antibacterial activity were *Staphylococcus aureus* and *E. coli* and mice for the antidiabetic activity. Phytochemical screening was performed according to standard protocol. The phytochemical screening showed the presence of total polyphenols, tannins, flavonoids, linked quinones, saponins, leucoanthocyanins, alkaloids and anthocyanins. The organic extracts of *G. coloratum* and *T. ivorensis* showed an antisickling activity. Only S. aureus was sensitive to the leaves of *T. ivorensis* (MIC < 62.5 µg.mL$^{-1}$) and *G. coloratum* (MIC ≤ 250 µg.mL-1) while no effect was observed on *E. coli*. The mean values for glycemia in treated and untreated mice after 2 hours were 62±14.3 mg.dL$^{-1}$ (Glibenclamide 20 mg.Kg$^{-1}$) and 70.4±16.6 mg.dL$^{-1}$ (ethyl acetate extract of *T. ivorensis* 500 mg.Kg$^{-1}$). To our knowledge, it is for the first time that the antisickling activity of *G. coloratum* and *T. ivorensis* is reported thus validating the chemotaxonomic approach used as a criterion for selecting these two plants. It is also for the first time that anti-hyperglycaemic activity of *T. ivorensis* is reported.

## II. Image:




## III. Reference:

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3 Bongo GN, Ngbolua KN, Ashande CM, Karume KL, Mukiza J, Tshilanda DD, Tshibangu DST, Ngombe NK, Mbemba TF & Mpiana PT (2017) Pharmacological screening of *Gymnanthemum coloratum* (Willd.) H. Rob. & B. Kahn (Compositae) and *Terminalia ivorensis* A. Chev. (Combretaceae) from DR Congo: Spotlight on the antisickling, antibacterial and anti-diabetic activities. *Tropical Plant Res.* 4(3): 441–448

## IV. Biography:

Gedeon Bongo has a MSc degree in Applied Microbiology and he is currently a junior lecturer at University of Kinshasa and University of Gbado-Lité in DRC. He has performed a lot of international trainings and has attended several international schools. His research interests are : Infectious diseases (Tuberculosis) and Medicinal plants, Virology and ecology of Lassa virus and genetic diseases like sickle cell aneamia. Currently, he is a PhD candidate and he is looking for a PhD position.

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