



Medicinal plants from Cambodia possessing anti-diabetic properties

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Background

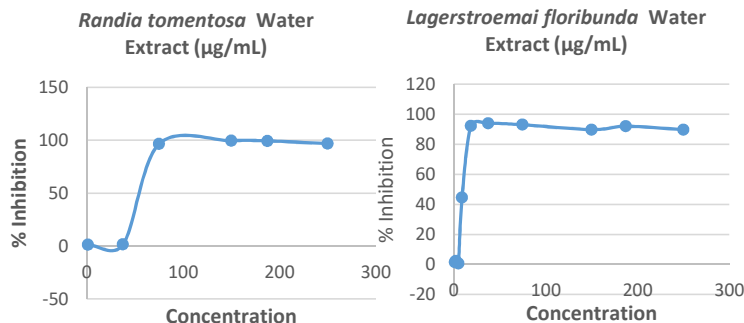
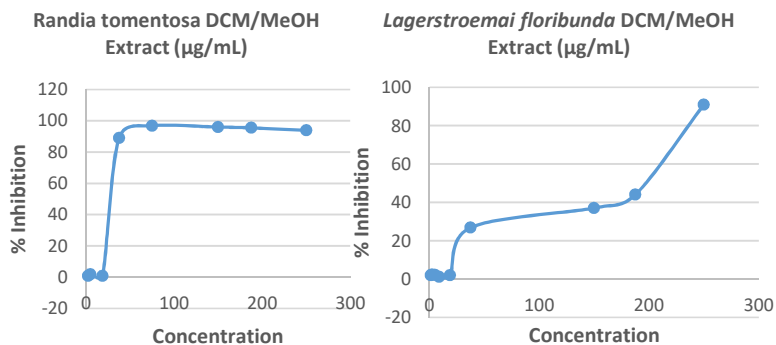
The number of diabetes mellitus patients is increasing rapidly along with population growth. In 2014, 422 million people were reported worldwide to have diabetes (WHO, 2021). This number is likely to increase to at least 552 million by 2030 (Whiting et al., 2011). Thus, diabetes type-2 is a disease of high public health importance. Traditional Khmer medicine (TKM) has used plants for hundreds of years in Cambodia. No less than 78 plant species have been described to be components in Khmer traditional recipes for diabetes treatment. However, few species have been scientifically investigated. The aim of this project to validate and explore the list of medicinal plants from Cambodia to treat diabetes type-2, by evaluating their α -glucosidase and α -amylase inhibitory activities.

Objective

- 1- To validate and expand the list of medicinal plants used to treat diabetes in Cambodia by evaluating their α -glucosidase and α -amylase inhibitory activities.
- 2- To determine the phytochemical content of the extracts.
- 3- To purify the chemical compounds from the plant extracts with the highest potential.

Results

The result of two plants species, *Randia tomentosa* (Rubiaceae) and *Lagerstroemai floribunda* (Lytraceae) of α -glucosidase and α -amylase inhibitory activities are shown here. Acarbose was used as a standard.



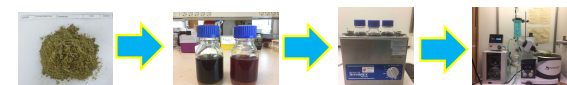
Conclusion

All crude extracts from both plants exhibited good inhibition for α -glucosidase in the range of 89.77 to 99.64 % at the concentration of 250 $\mu\text{g/mL}$, respectively. The only extract with lower activity was the acetonitrile/water (1:1) extract from *Lagerstroemai floribunda* (34.71%). Hence, all of them displayed higher activity than standard acarbose (3%) at the same concentration.

References

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- [3] Kumar, D.; Ghosh, R. and Pal, B. C., 2013. α -Glucosidase inhibitory terpenoids from *Potentilla fulgens* and their quantitative estimation by validated HPLC method. J Funct Foods. 5: 1135-1141.

Plant materials



Biological activities testing (α -Glu and α -Am enzyme)

