

EVALUATION OF ALPHA-GLUCOSIDASE INHIBITORS FROM INDONESIAN PLANTS

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BACKGROUND



90% of world population suffered diabetes type 2.



Indonesia is the 4th country with the highest number of people suffered from diabetes.



As Indonesia has the second largest, we want to find diabetes treatment plants.

OBJECTIVES



- Evaluation of Alpha-glucosidase inhibitors (AGIs) activity from 57 Indonesian plant samples
- Observed the best extraction solvents for extracting AGIs active compound(s)
- Evaluation of antioxidant activity from 5 best samples

MATERIALS & METHODOLOGY



57 Indonesian Plants



Chopped



Drying



Extraction using 50% methanol

ANALYSIS



57 Plants

AGIs activity
Rat Intestinal Glucosidase Assay

Antioxidant activity

General antioxidant activity
DPPH Radical Scavenging Activity

Phenolic Content
Folin-Ciocalteu Method

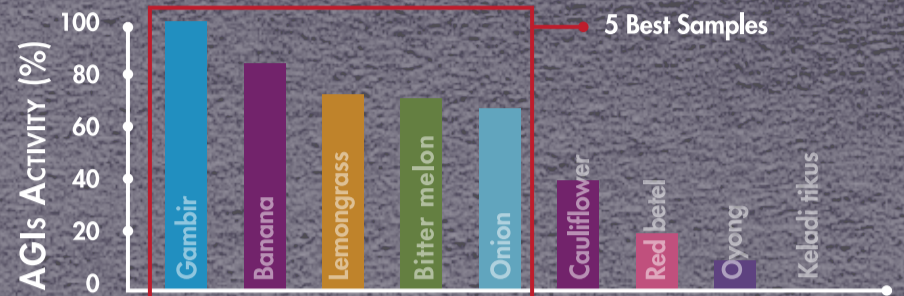
Flavonoids Content
Aluminum-Chloride Assay

5 BEST SAMPLES

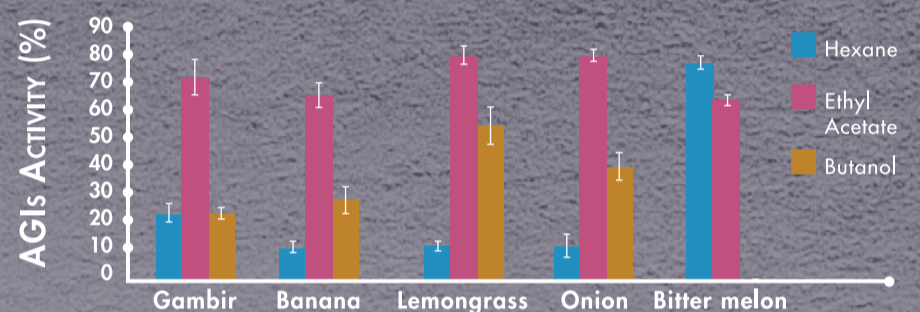
RESULT

SCIENTIFIC NAME	LOCAL NAME	PART
<i>Uncaria Gambir</i>	Gambir	Fruit
<i>Musa Paradisiaca</i>	Banana	Peel
<i>Cymbopogon Citratus</i>	Lemon grass	Stem
<i>Momordica Charantia</i>	Bitter melon	Fruit
<i>Allium Cepa L.</i>	Onion	Bulb

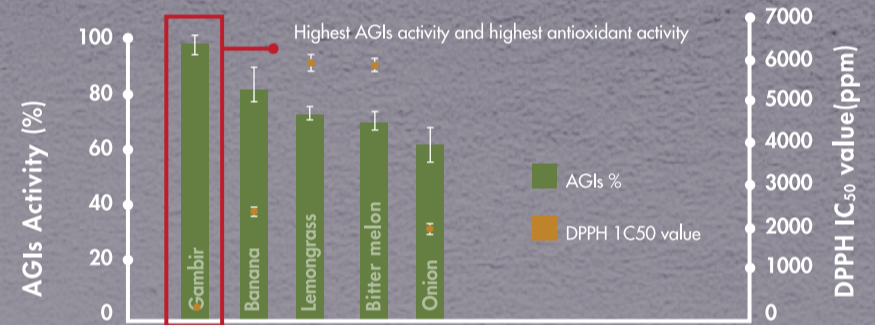
AGIs ACTIVITY AT CONCENTRATION OF 0.02 G/ML



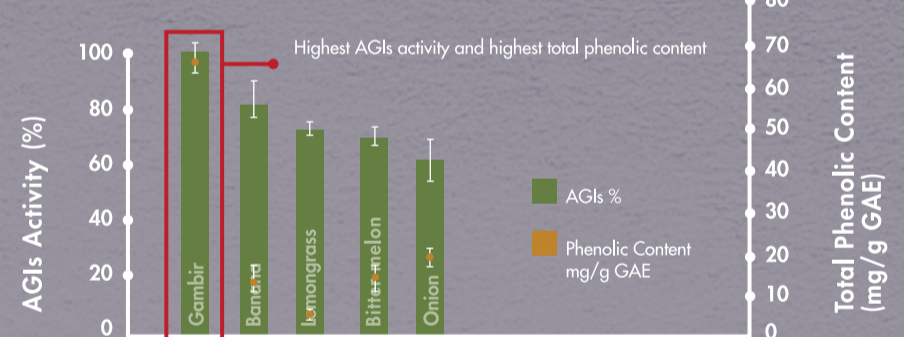
AGIs ACTIVITY OF THE GRADIENT EXTRACTION OF GAMBIR, BANANA, LEMONGRASS, ONION AND BITTER MELON AT CONCENTRATION OF 0.05 G/ML



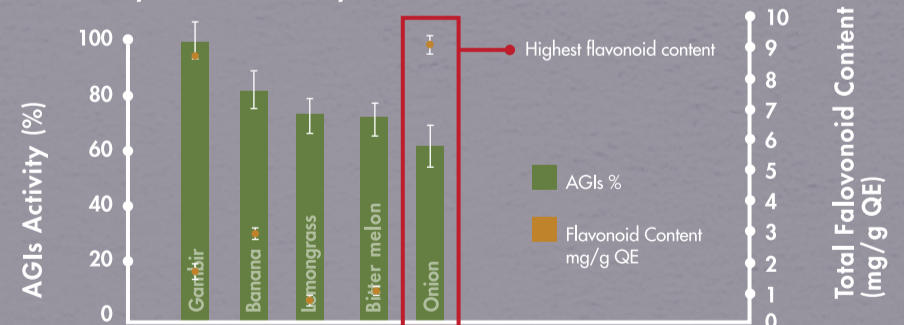
EVALUATION OF AGIs ACTIVITY AT CONCENTRATION OF 0.05 G/ML AND ANTIOXIDANT ACTIVITY OF GAMBIR



EVALUATION OF AGIs ACTIVITY AT CONCENTRATION OF 0.05 G/ML AND TOTAL PHENOLIC CONTENT OF GAMBIR, BANANA, LEMONGRASS, ONION AND BITTER MELON



EVALUATION OF AGIs ACTIVITY AT CONCENTRATION OF 0.05 G/ML AND TOTAL FLAVONOID CONTENT OF GAMBIR, BANANA, LEMONGRASS, ONION AND BITTER MELON



CONCLUSION

- Gambir has the highest AGIs activity followed by banana, lemongrass, bitter melon and onion
- Ethyl acetate was found as the best solvent to extract AGIs active compound(s) indicating that the compound(s) might be a moderately polar compound(s)