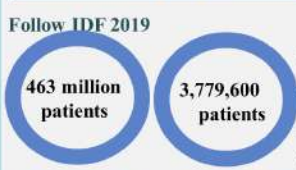


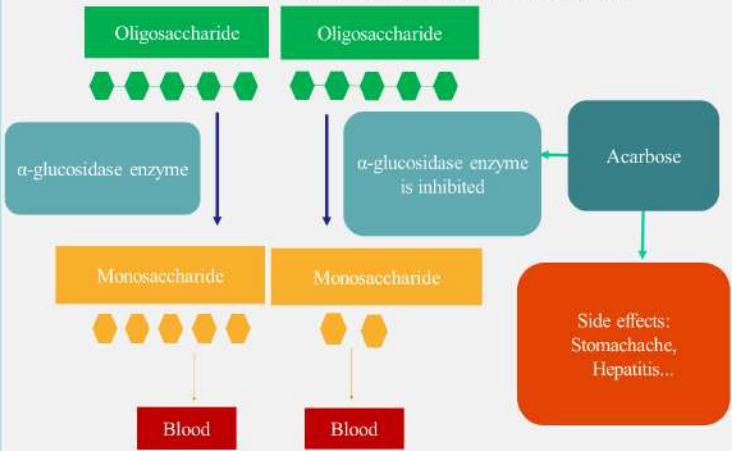
α -GLUCOSIDASE INHIBITORY AND PHYTOCHEMICAL INVESTIGATION OF *LUDWIGIA OCTOVALVIS* COLLECTED IN VIETNAM



DIABETE



Diabetes mellitus is a common metabolic disease in modern society. In fact, it is the third disease leading cause of death (after cancer and cardiovascular disease) for humans. Type-II diabetes mellitus characterized as non-insulin-dependent is accounted for more than 90% of all diabetic patients. Previous reports revealed that the effective control of hyperglycemia in Type-II diabetes mellitus is very important to reduce complications and mortality. One therapeutic approach for the treatment of Type-II diabetes mellitus is to decrease postprandial hyperglycemia using inhibition of the α -glucosidase enzyme.[1]



The enzyme inhibitors currently in use have many side effects, so research into new sources to inhibit the enzyme α -glucosidase is needed. *Ludwigia octovalvis* is capable of supporting and treating diabetes and easy to find on the banks of the fields and riverside in the city area. Ho Chi Minh City should be researched methodically, scientifically, selectively, and in accordance with new standards of testing.

Ludwigia octovalvis

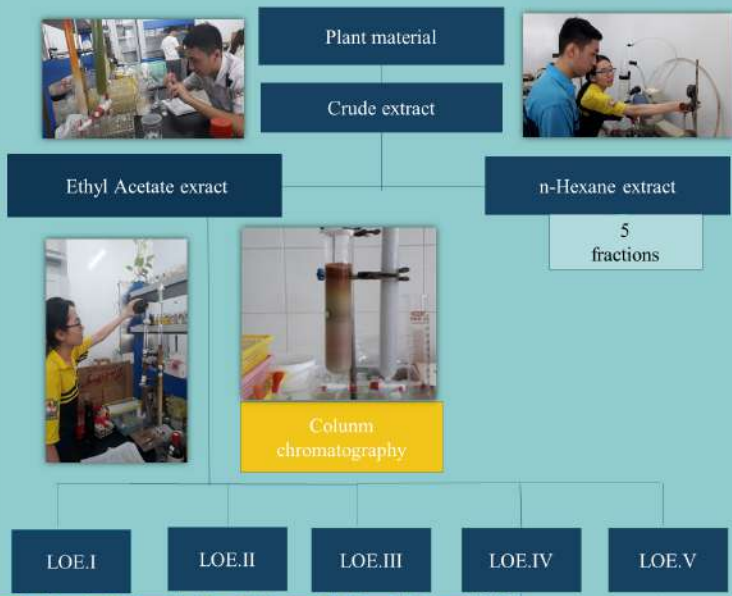
Distribution: mainly in the tropics, abundant in humid regions, the trees grow everywhere from the plains to the midlands and mountainous area



Materials collected in Binh Chanh District, Ho Chi Minh City.



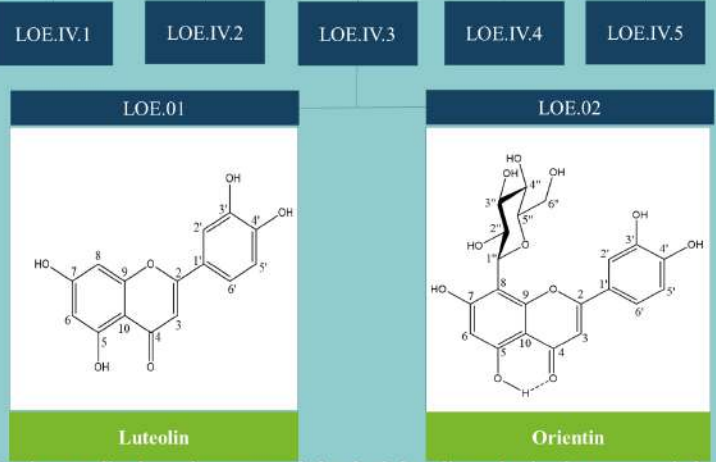
PROCESS



α -Glucosidase inhibition of all fractions

As result, four fractions (LOH.II, LOE.I, LOE.IV, & LOE.V) expressed potential inhibition of enzyme α -glucosidase (IC₅₀ ranged from 71.57 to 92.03 μ g/mL). Among of them, fraction LOE.IV possessed the most α -glucosidase inhibitory effect (IC₅₀ value of 71.57 \pm 2.55 μ g/mL). Therefore, this fraction was further clarified on phytochemical constituents.

Samples	Inhibition (%)	IC ₅₀ (μ g/mL)
	100 μ g/mL	
LOH.I	16.51	>100
LOH.II	88.76	83.99 \pm 4.18
LOH.III	12.31	>100
LOH.IV	7.72	>100
LOH.V	9.63	>100
LOE.I	60.12	89.74 \pm 3.52
LOE.II	-	-
LOE.III	-	-
LOE.IV	89.63	71.57 \pm 2.55
LOE.V	68.53	92.03 \pm 6.55
Acarbose		214.51 μ M
- Inhibition < 1%		



Previous studies have demonstrated that both luteolin and orientin compounds have very strong α -glucosidase inhibitory activity compared with acarbose with IC₅₀ of 13.07 and 23.30 μ M, respectively [16].

CONCLUSION

In summary, the systematic study on the chemical composition of the whole plants of *Ludwigia octovalvis* collected in Binh Chanh District, Ho Chi Minh City was described from sample collection, sample identification, purification, characterization of isolated compounds. Phytochemical investigation of the active extracts notification two flavonoids that both have very strong inhibitory activity on the enzyme α -glucosidase to clarify and improve the value of using local spinach and suggesting more in-depth studies on the composition of active ingredients as well as the mechanism of action of this species in the reduction and treatment of type-II diabetes.