

A Comparative Study on the Hypoglycemic Effects of Hydroalcoholic Extracts from *Silybum marianum*, *Camellia sinensis* (Green Tea), and *Urtica dioica* Plants in Diabetic Rats

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Abstract : Diabetes is an endocrine disorder that is commonly treated with insulin. However, long-term usage of insulin and hypoglycemic chemical drugs can result in various side effects. Therefore, it is crucial to explore effective compounds with minimal side effects for diabetes treatment. This study aimed to compare the hypoglycemic effects of hydroalcoholic extracts derived from *Silybum marianum*, *Camellia sinensis* (green tea), and *Urtica dioica* plants. Male Wistar rats were allocated to 5 groups. Group 1 received normal Salin. Other groups were diabetic (induced by Streptozotocin 65 mg/kg Ip), group 2 received normal Salin (Ip, qod. 21 days). Group 3 received *Silybum Marianum* L, hydroalcoholic extract (100 mg/kg, ip.qod, 21 days). Group 4 received *Camellia sinensis* L, hydroalcoholic extract (100mg/kg,ip,qod,21 days), and group 5 received *Urtica dioica* L, hydroalcoholic extract (100mg/kg, ip,qod,21 days). Blood samples were collected at 14 and 21 days after the initial injection to evaluate the blood glucose levels. On the fourteenth day, the blood glucose levels for the diabetic groups were as follows: Group 2: 424.7 ± 34.5 , Group 3: 390.7 ± 10.5 , Group 4: 350.4 ± 16.9 , and Group 5: 340 ± 20.5 . On the 21st day, the respective blood glucose levels were: Group 2: 432 ± 5.0 , Group 3: 410.16 ± 5.0 , Group 4: 264.3 ± 17.5 , and Group 5: 270.7 ± 24.5 . Statistical analysis using the Tukey Anova test indicated that on the fourteenth day, both the green tea and *Urtica* groups exhibited significant hypoglycemic effects. Furthermore, on the 21st day, *Urtica dioica* extract demonstrated comparable effects to *Camellia Sinensis* extract, while *Silybum Marianum* extract did not significantly lower blood glucose levels compared to the diabetic group. In conclusion, the hydroalcoholic extracts from *Camellia sinensis* and *Urtica dioica* plants exhibited promising hypoglycemic effects in diabetic rats. These findings provide valuable insights into the potential use of natural plant extracts as alternative or complementary treatments for diabetes, warranting further investigation to harness their therapeutic benefit effectively.

Keywords : *Camellia sinensis*, glucose, *Silybum marianum*, *Urtica dioica*

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