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**ABSTRACTS BOOK**

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# ELLAGITANNINS AND GALLOTANNINS AS $\alpha$ -AMYLASE AND $\alpha$ -GLUCOSIDASE INHIBITORS IN TYPE 2 DIABETES

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**Introduction:** Diabetes mellitus is characterized by high blood glucose levels due to hydrolysis of starch by pancreatic  $\alpha$ -amylase and absorption of glucose in the small intestine by  $\alpha$ -glucosidase. The consumption of natural inhibitors could be a therapy for managing postprandial hyperglycemia with minimal side effects. Among healthy natural products, vegetable tannins are currently exploited in the fields of agro-food, cosmetic and over-the-counter (OTC) drug industry (1,2). The objective of this study was to investigate a number of tannins as potential inhibitors for managing early stages of Type 2 diabetes.

**Materials & Methods:** The potential mechanisms of interactions between porcine pancreatic  $\alpha$ -amylase and baker's yeast  $\alpha$ -glucosidase with respect to 14 ellagitannins and 3 gallotannins were investigated by inhibition assays, enzymatic kinetics and fluorescence spectroscopy. The results were compared with those of the antidiabetic commercial drug, acarbose.

**Results:** Most of the analyzed tannins showed high  $\alpha$ -glucosidase inhibitory activity with low to moderate inhibition of  $\alpha$ -amylase. Such profiles have interesting functionality for potentially controlling glucose absorption without generating side effects linked to high  $\alpha$ -amylase inhibitory activity (3).

**Conclusion:** This work would be significant for the development of more powerful anti-diabetes drugs and efficacious utilization of tannins as food supplements in the diet of diabetic patients.

## References

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