

# Polyphenols from *Prunus Spinosa* L. flower extract impact on alpha amylase activity in alloxan induced hyperglycemic C57BL/6 mice

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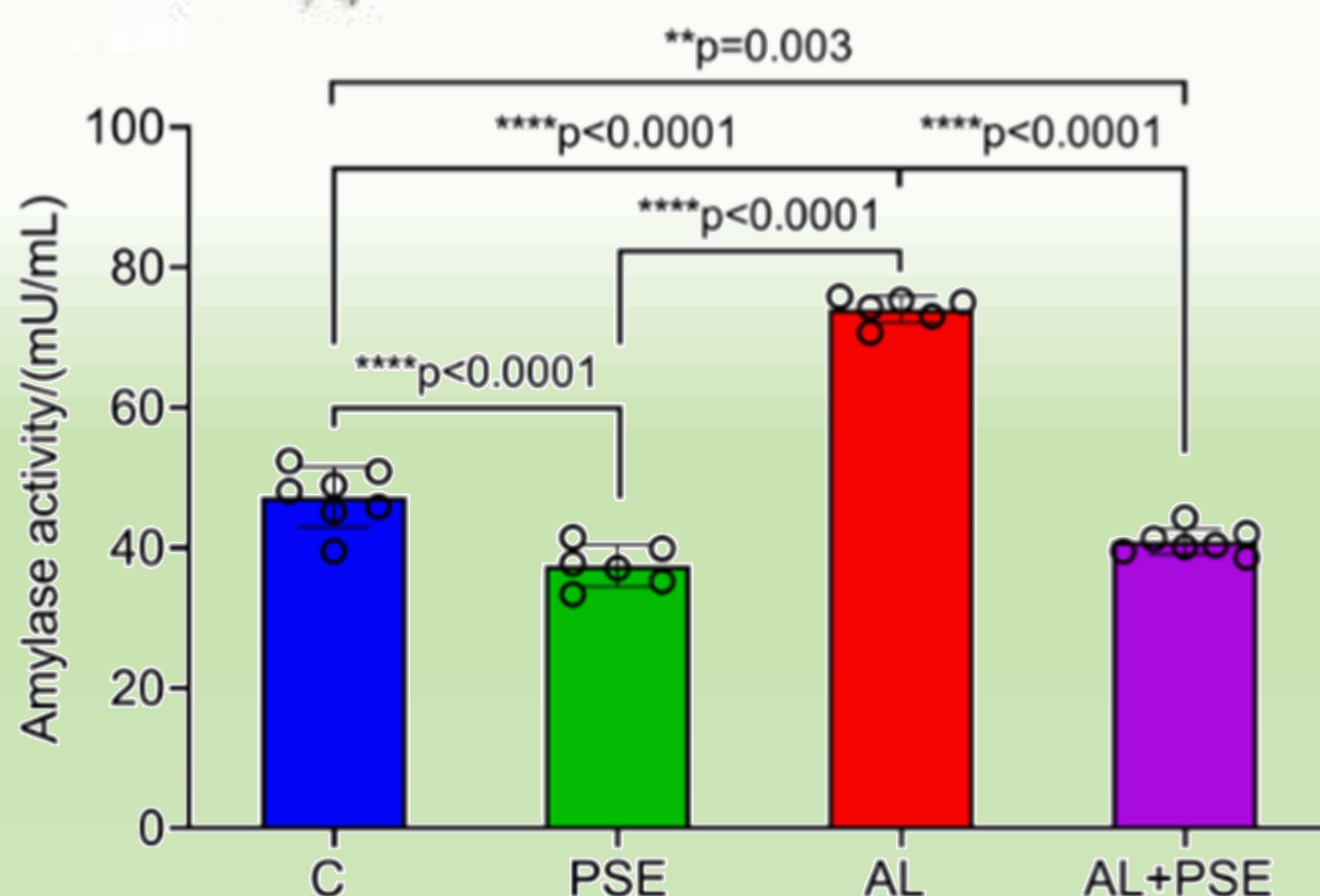
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**INTRODUCTION:** Diabetes mellitus is a chronic disease that is characterized by chronic impaired blood glucose levels and hyperglycemia as a result of compromised insulin secretion or impaired insulin action. The usage of plants and their extracts in treatment of chronic diseases is widely known in traditional medicine and has a big potential for treatment of hyperglycemia and its complications. *Prunus spinosa* L. presents the rich source of phytochemicals, polyphenols including flavonoids, phenolic acids and flavonoids, anthocyanins, flavan-3-ols and has antihyperglycemic effects.

**MATERIALS AND METHODS:**  $\alpha$ -Amylase assay kit was used to determine the influence of polyphenols from *Prunus spinosa* L. (PSE) extract on serum amylase activity after 10 day intake of 25 mg/kg bw of total polyphenols in hyperglycemic C57BL/6 mice. Hyperglycemia was induced with 150 mg/kg bw of alloxan. Mice were divided in 4 groups: (1) as control group (C), (2) as *Prunus spinosa* L. flower extract (PSE), (3) as alloxan group (AL) and (4) as Alloxan group treated with PSE (AL+PSE)

**RESULTS:** The PSE intake resulted in significantly lower serum amylase activity ( $p < 0.0001$ ) in *Prunus spinosa* L. flower extract group compared to control group until 10 experimental day. This means that 10 repeated doses of daily consumption of PSE had the potential to inhibit amylase activity. When the *Prunus spinosa* L. flower extract was administered to the hyperglycemic mice (AL+PSE) there was a significant reduction of  $\alpha$ -amylase activity ( $p < 0.0001$ ) compared to alloxan (AL) group 10 experimental day.

**CONCLUSION:** These findings may be used in designing a nutraceutical polyphenol mixture as supportive therapy in hyperglycemia treatment. The conclusion of this study is that 10 days intake of *Prunus Spinosa* L. flower extract has a potential protective effect on inhibiting serum  $\alpha$ -amylase activity.



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