

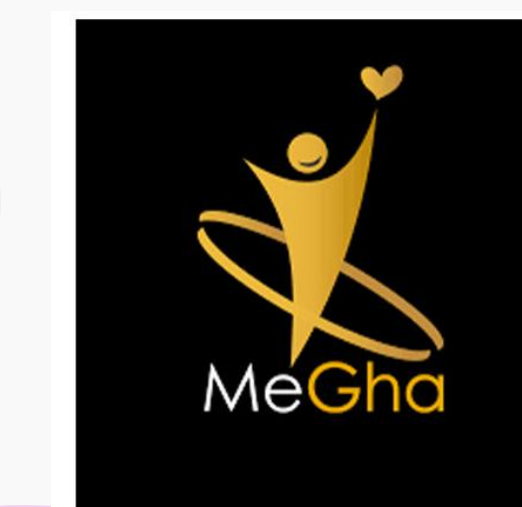


Evaluation of bioactive properties of Megha Vac Recovery and Megha Primal Intake as novel herbal-based food supplements

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Introduction

Herbal supplements are natural products that have been used for centuries by different cultures around the world to enhance overall well-being and manage specific health conditions.

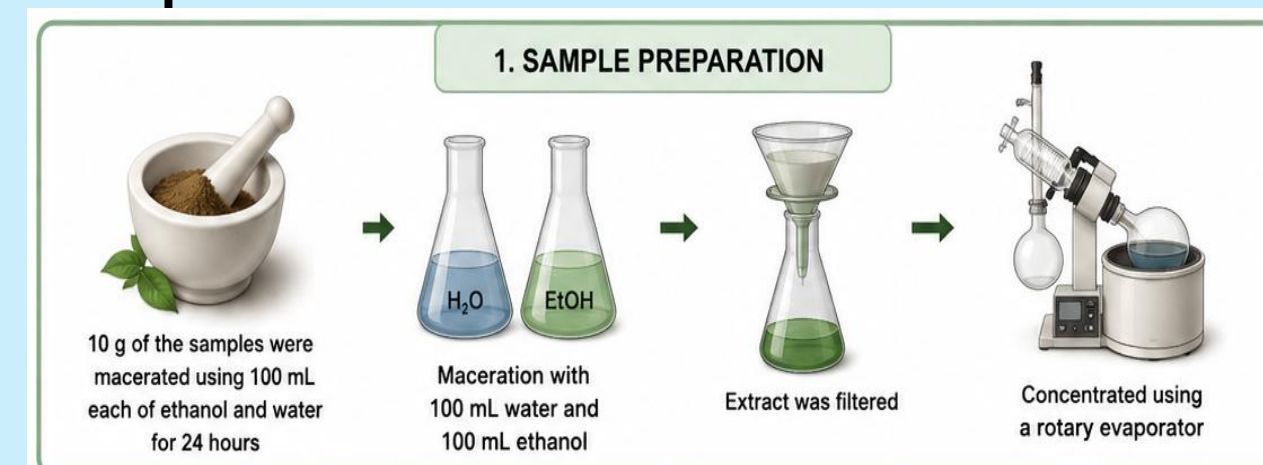
In Sri Lanka, two new herbal-based food supplements, Megha Vac Recovery (MVR) and Megha Primal Intake (MPI), are formulated to bolster the immune system, providing enhanced defense against various infections.

These supplements reflect a broader trend toward embracing natural remedies for health benefits, highlighting the growing enthusiasm for integrating herbal solutions into everyday life. Evaluating the bioactive properties of supplements helps to ensure their effectiveness for health and wellness.

Methodology

Sample preparation

10 g of each sample was macerated in 100 mL of ethanol (EtOH) and water for 24 hours. The extract was filtered and concentrated using a rotary evaporator



Determination of antioxidant activity

Free radical scavenging activity was assessed using the DPPH radical assay

Determination of antidiabetic activity

The antidiabetic potential of the extracts was evaluated through the inhibition of α -amylase and α -glucosidase

Determination of anti-inflammatory activity

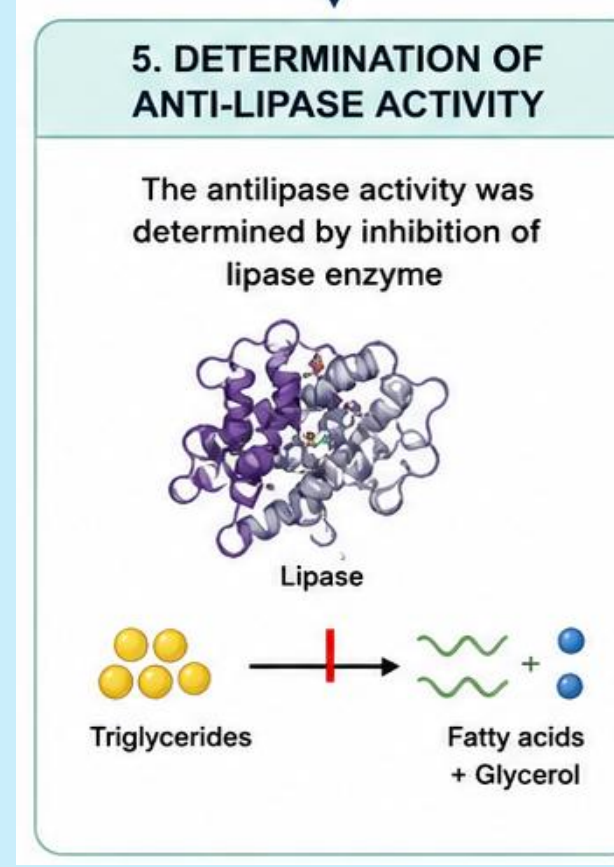
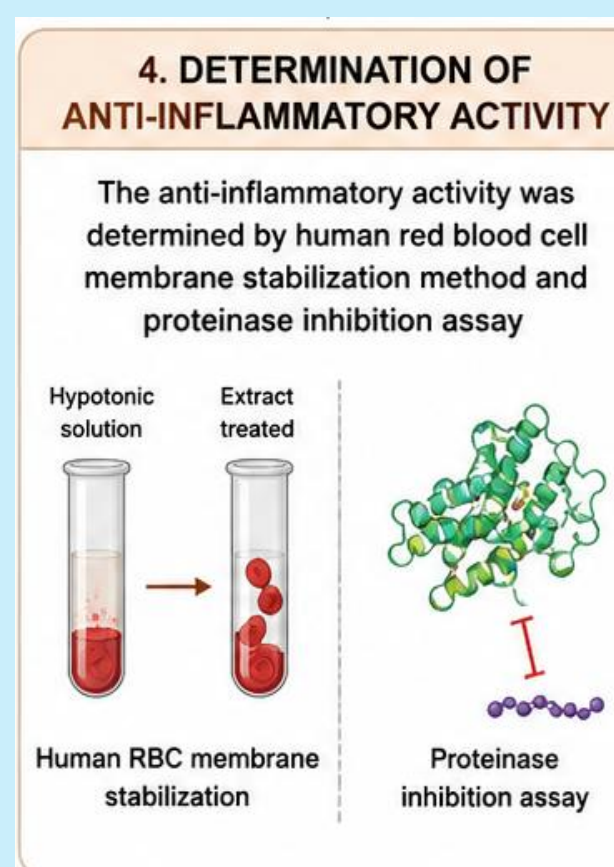
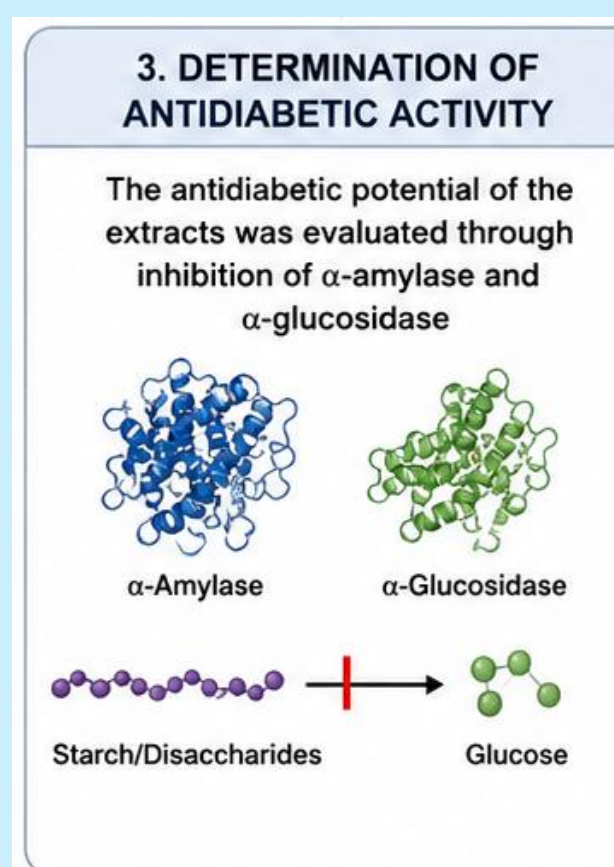
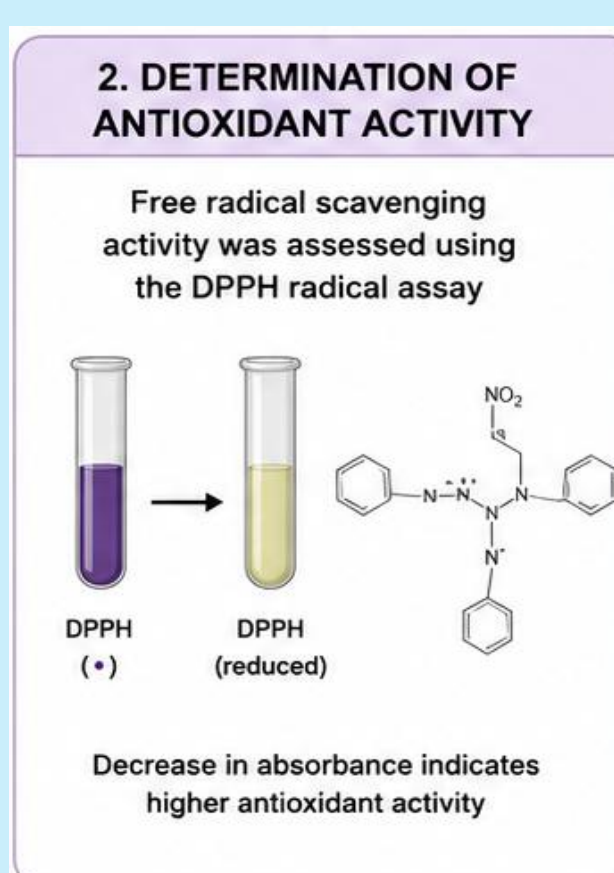
The anti-inflammatory activity was determined by the human red blood cell (HRBC) membrane stabilization method and proteinase inhibition assay

Determination of anti-lipase activity

The anti-lipase activity was determined by the inhibition of the lipase enzyme

Statistical analysis

Statistical analyses were conducted using GraphPad Prism and IBM SPSS Statistics. For group comparisons, one-way analysis of variance (ANOVA) was used with $p < 0.05$ as the threshold for statistical significance.



Results

The bar charts below show the half-maximal inhibitory concentration (IC₅₀) values for MVR and MPI capsules. The tallest bar represents the lowest activity, while the shortest bars indicate higher activity.

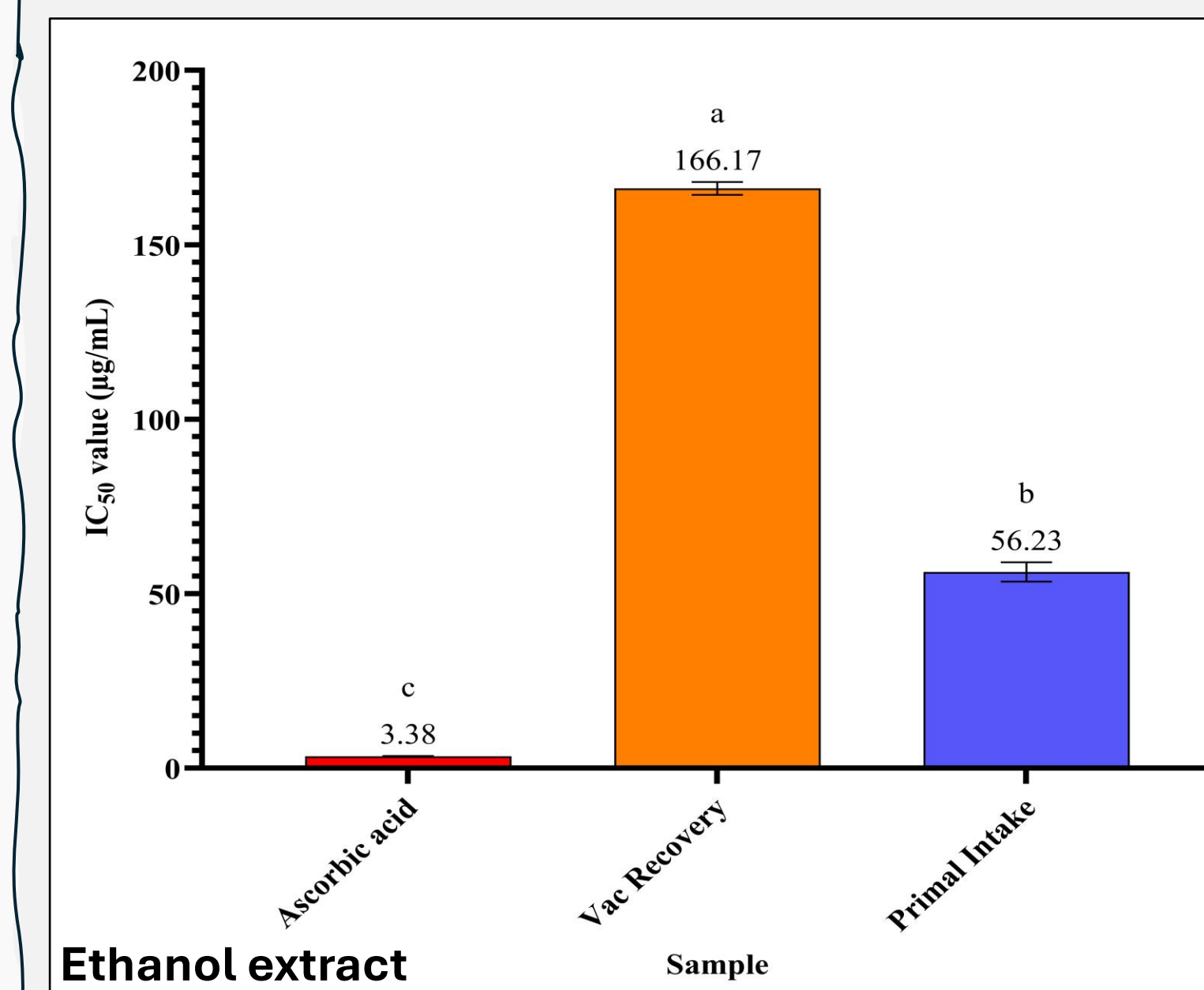


Fig 1. IC₅₀ of antioxidant activity by DPPH assay

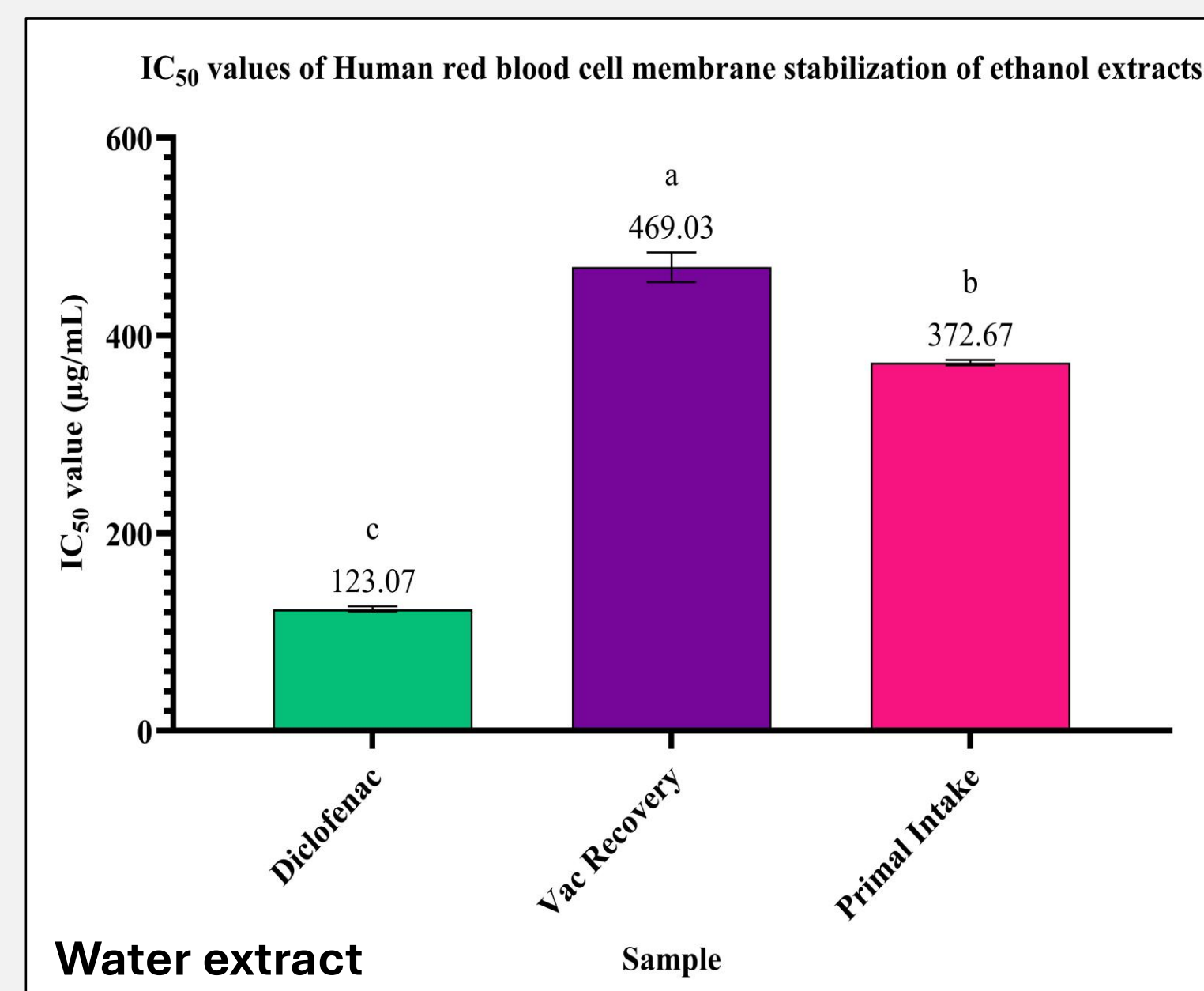
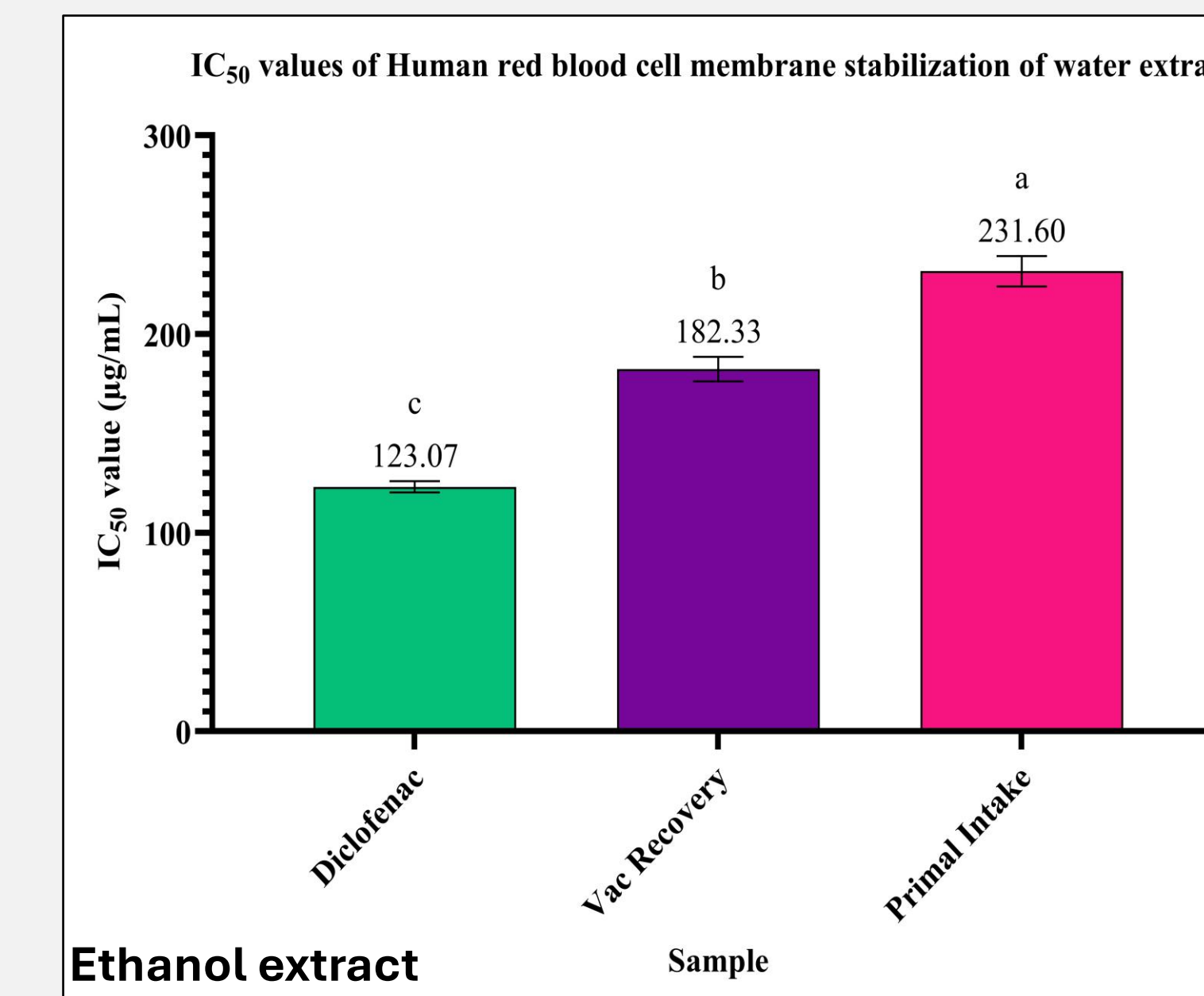
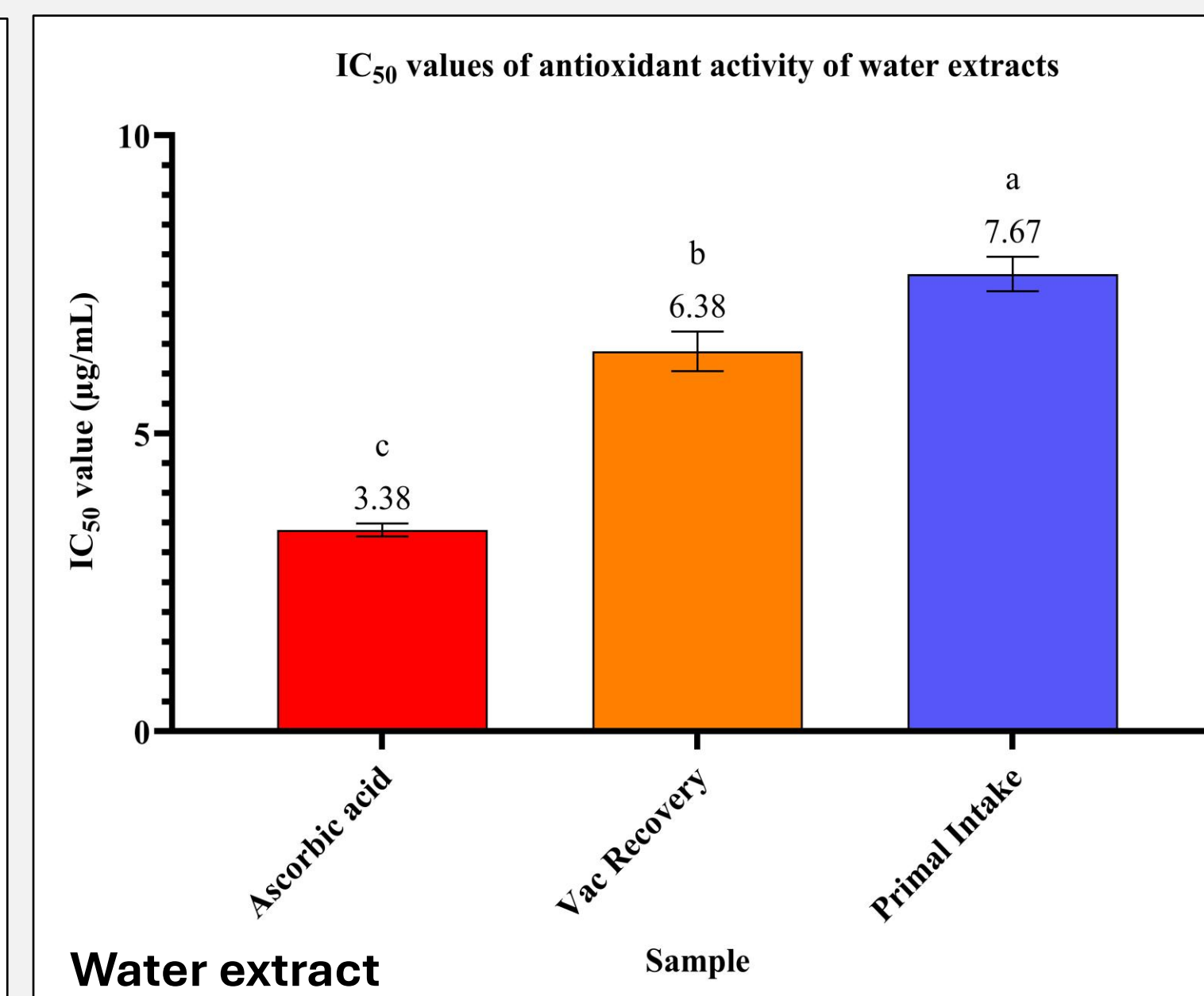


Fig 4. IC₅₀ of HRBC membrane stabilization

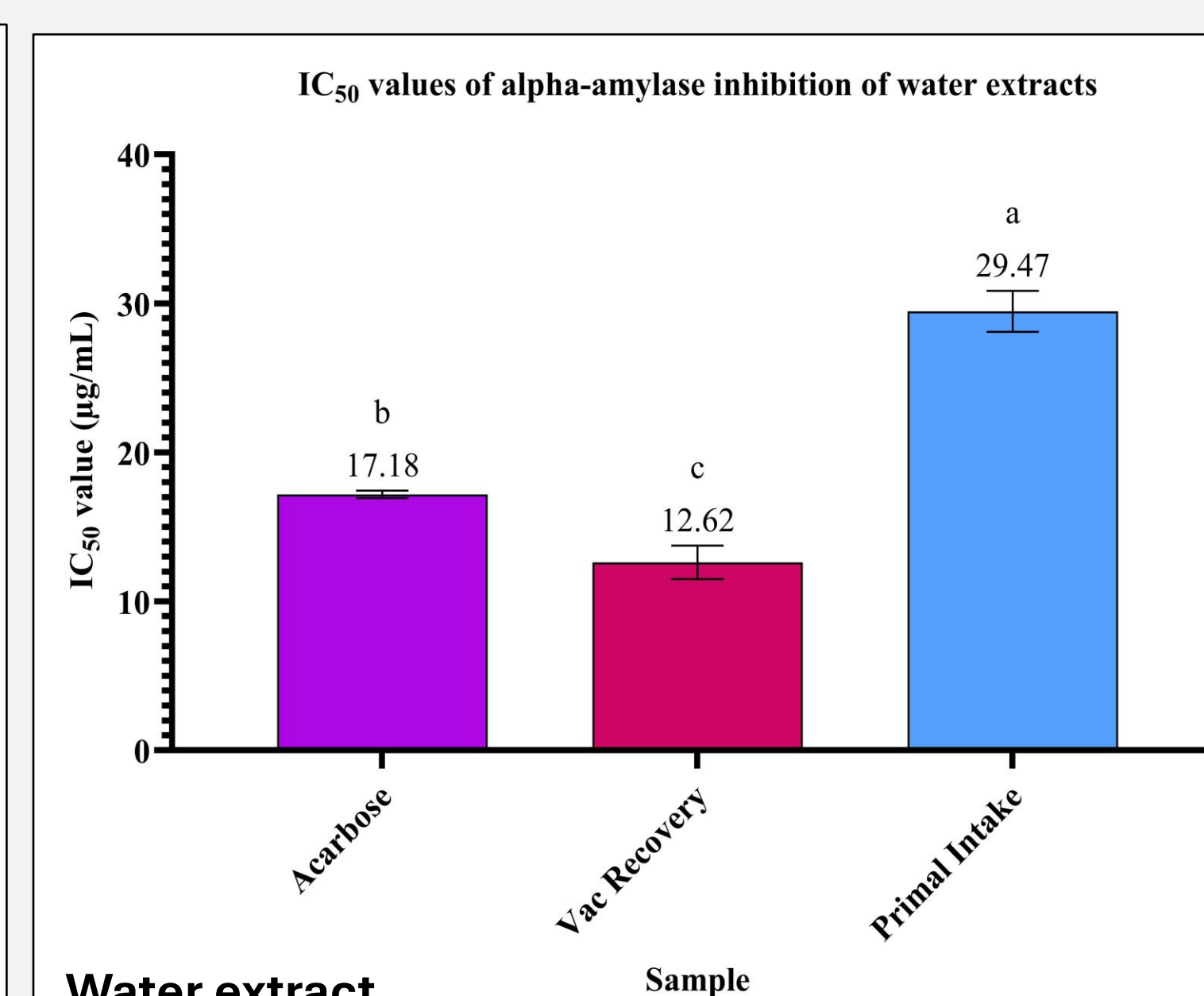
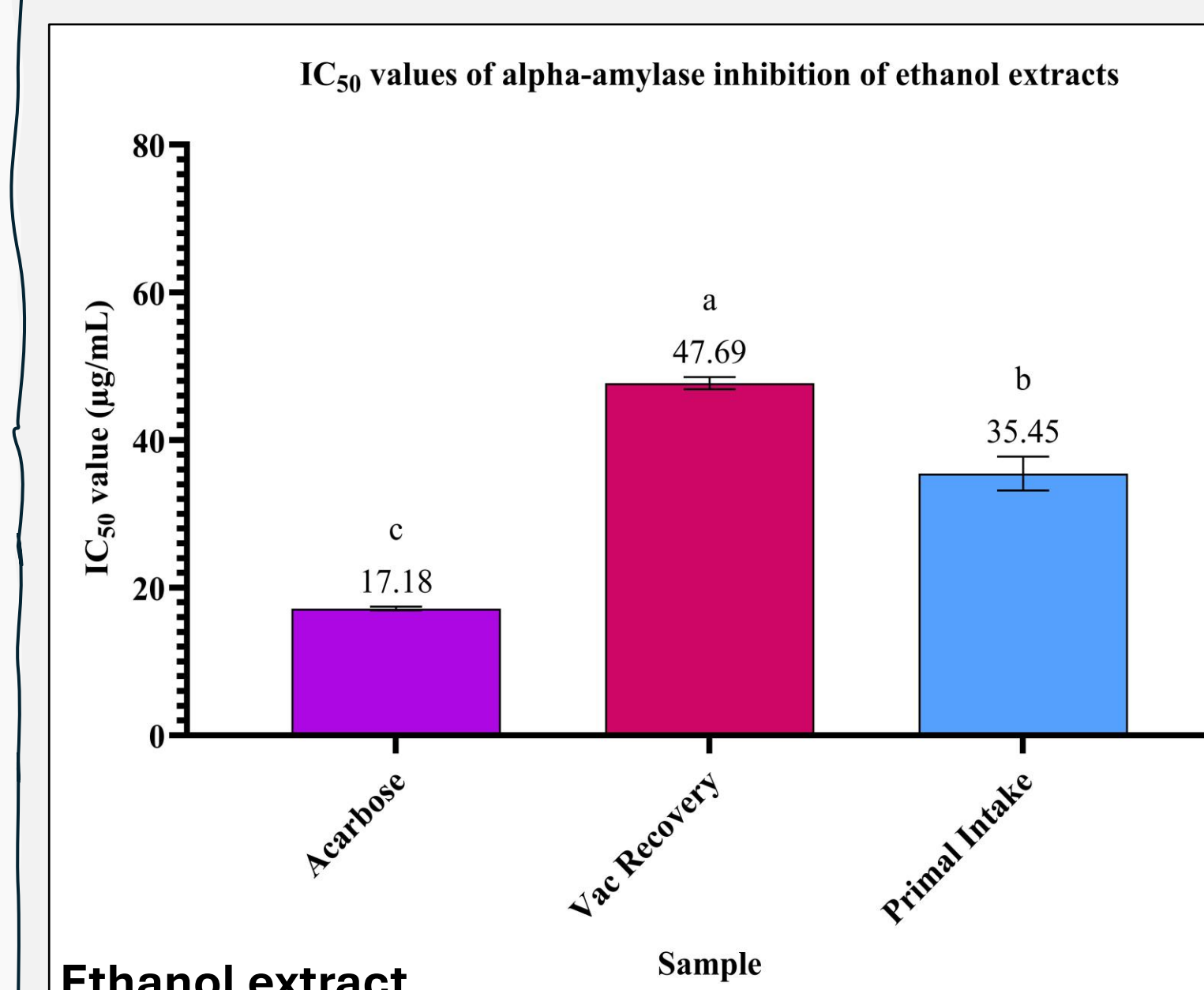


Fig 2. IC₅₀ of α -amylase inhibition

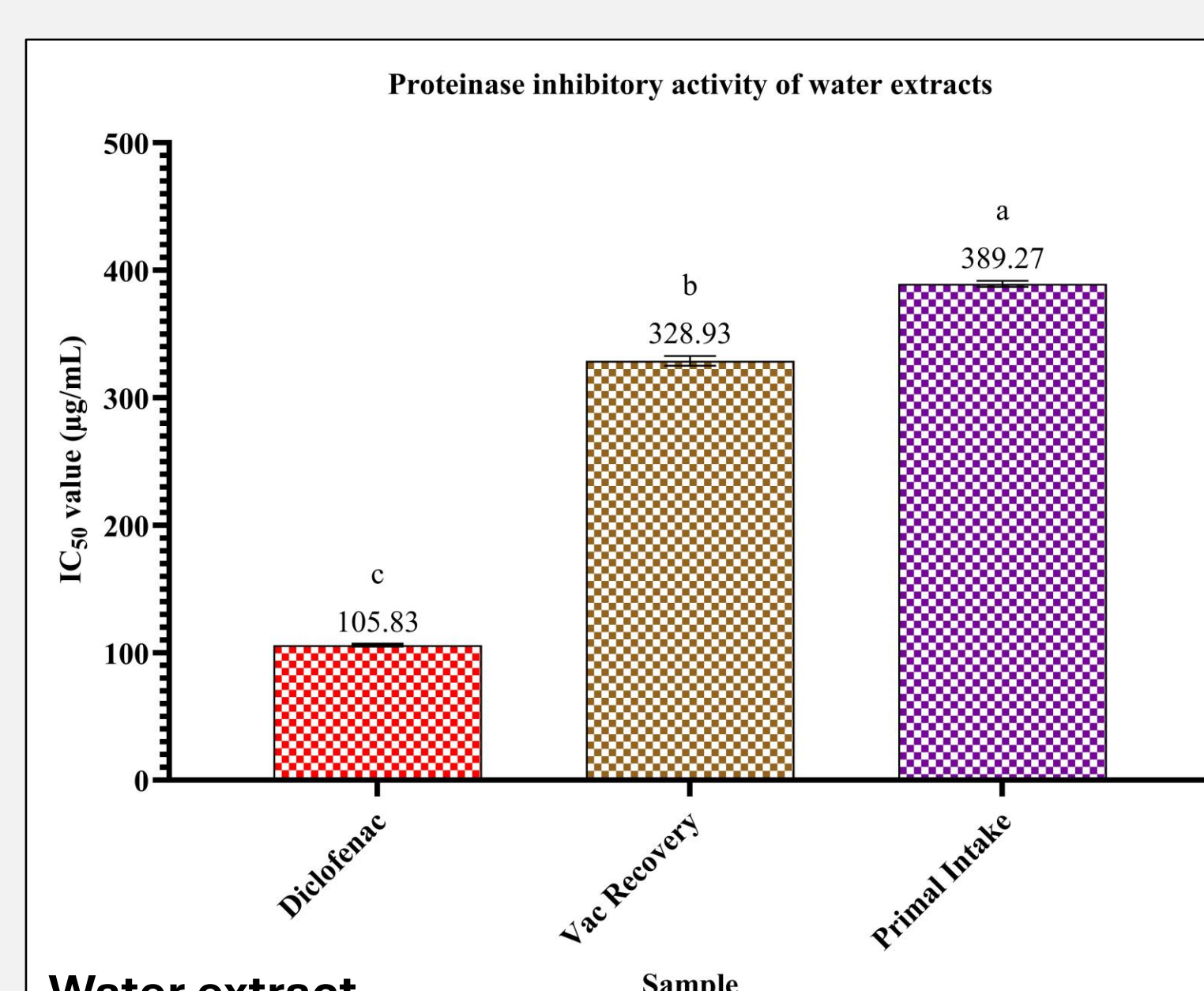
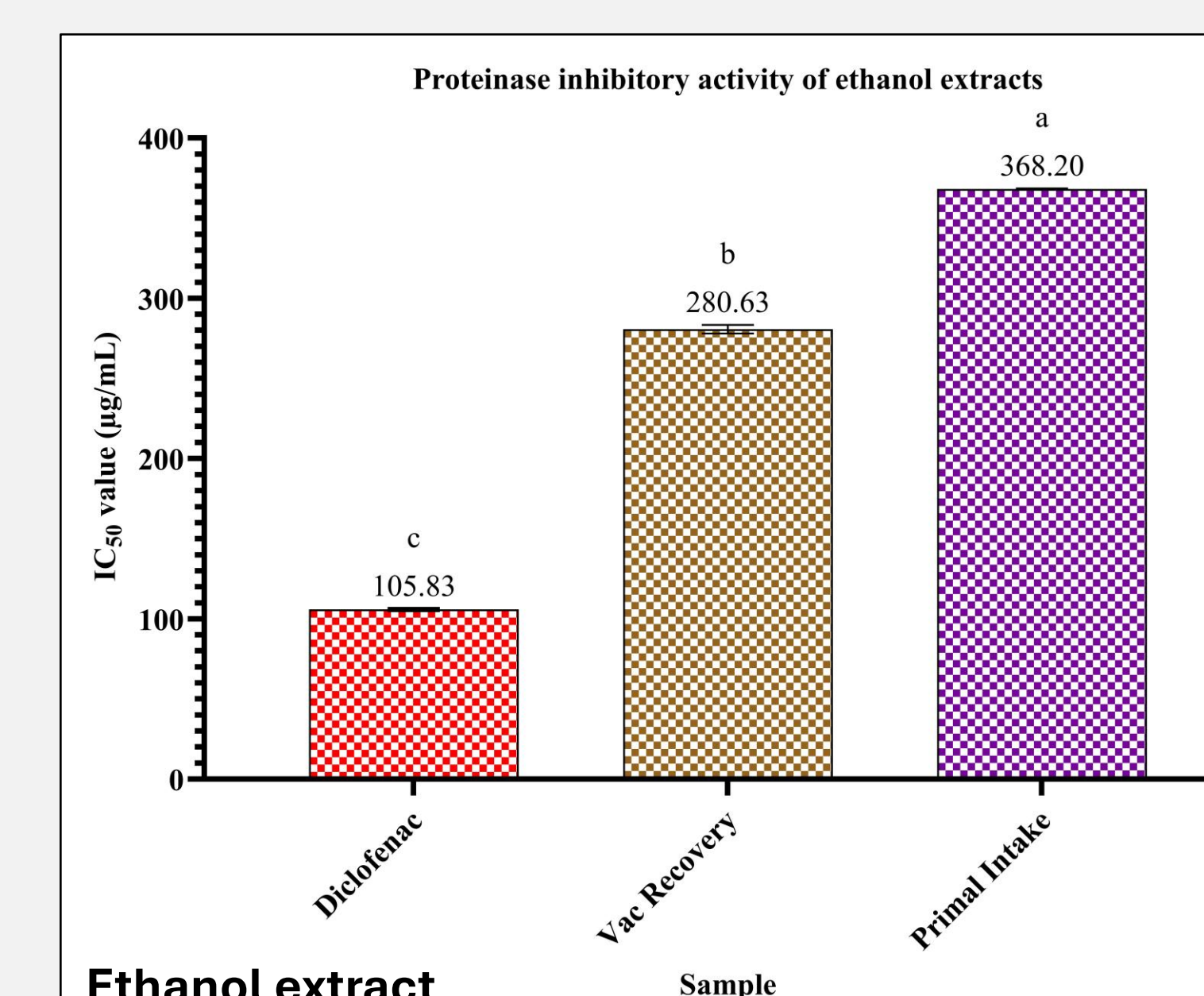


Fig 5. IC₅₀ of proteinase inhibition

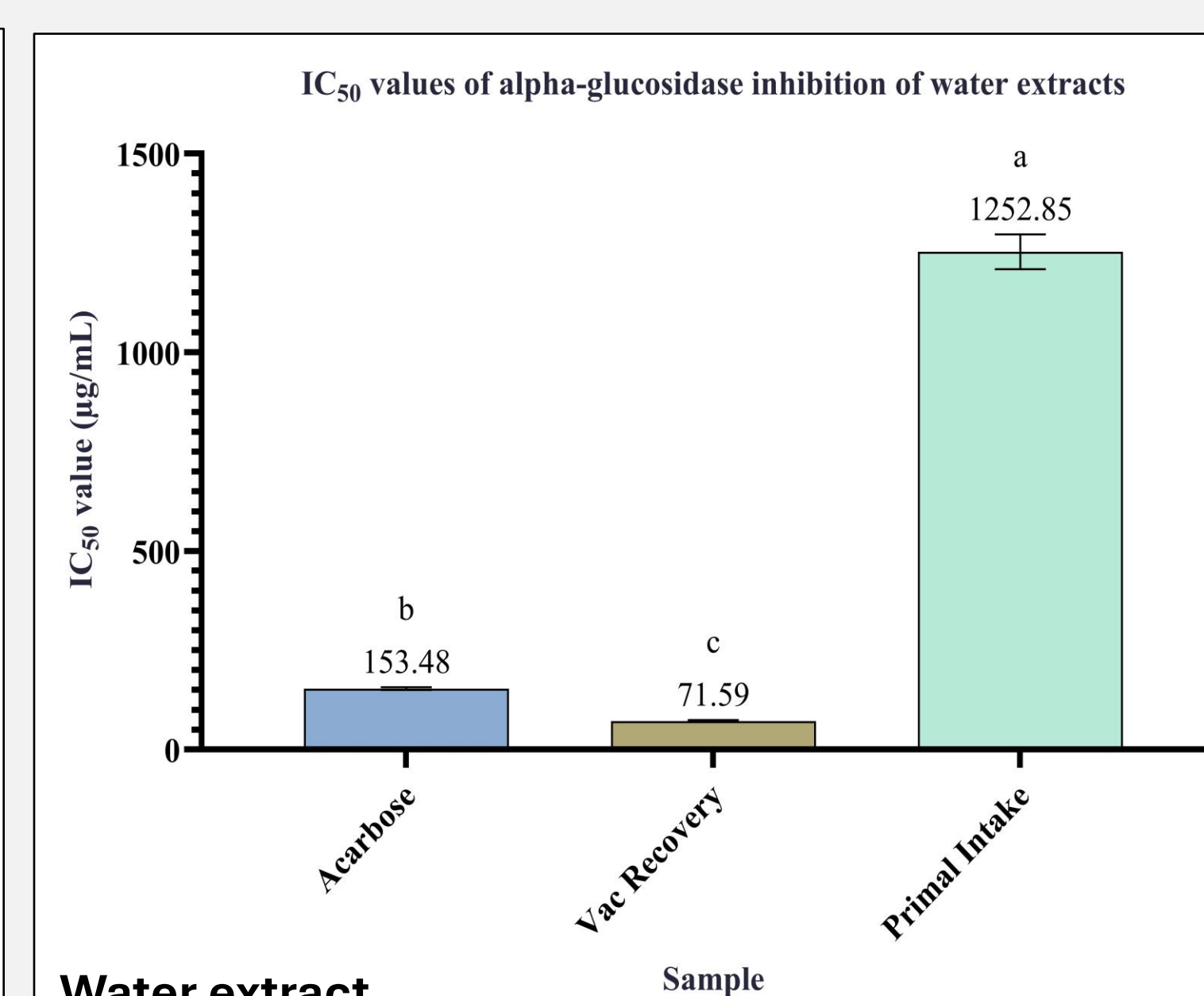
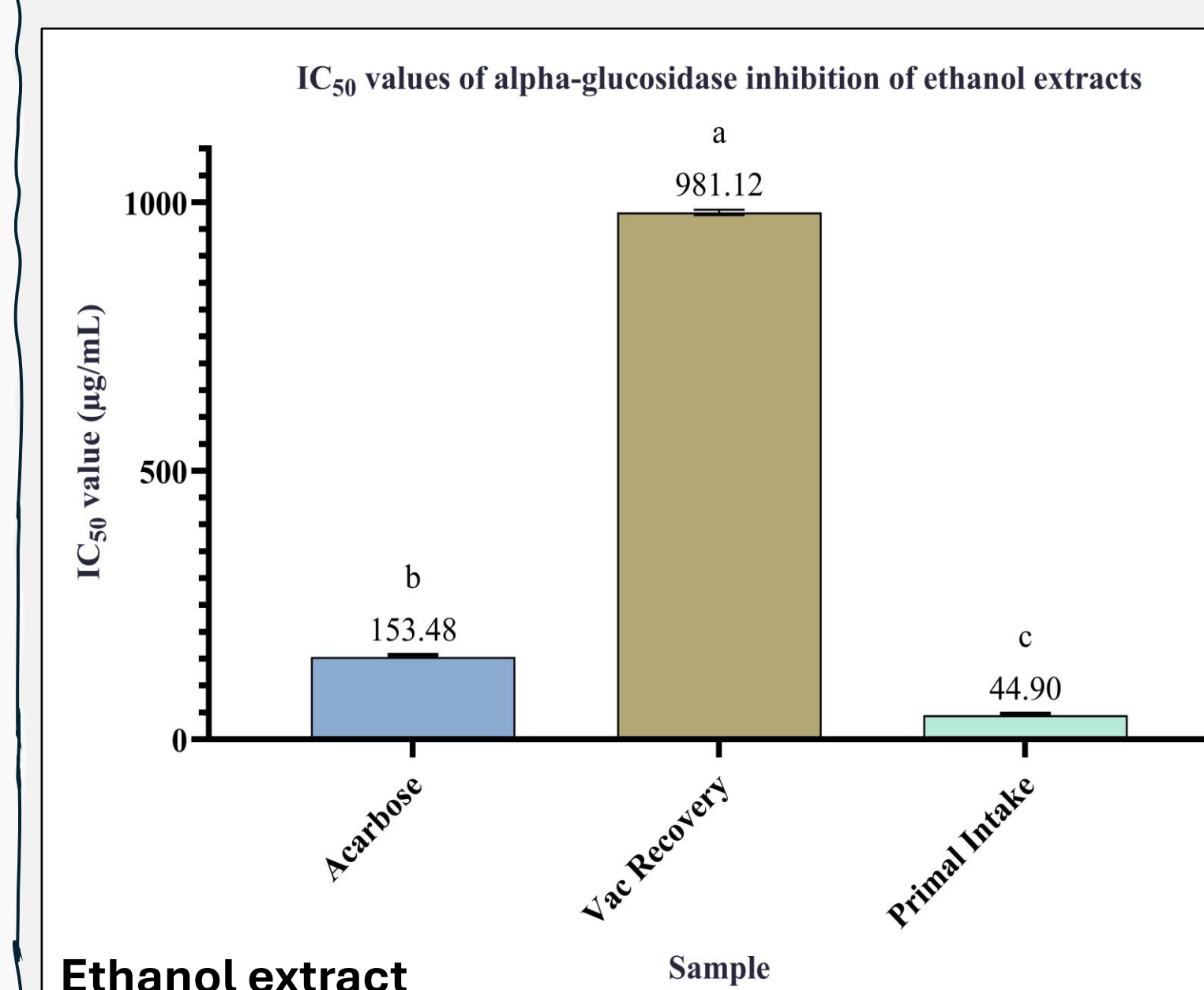


Fig 3. IC₅₀ of α -glucosidase inhibition

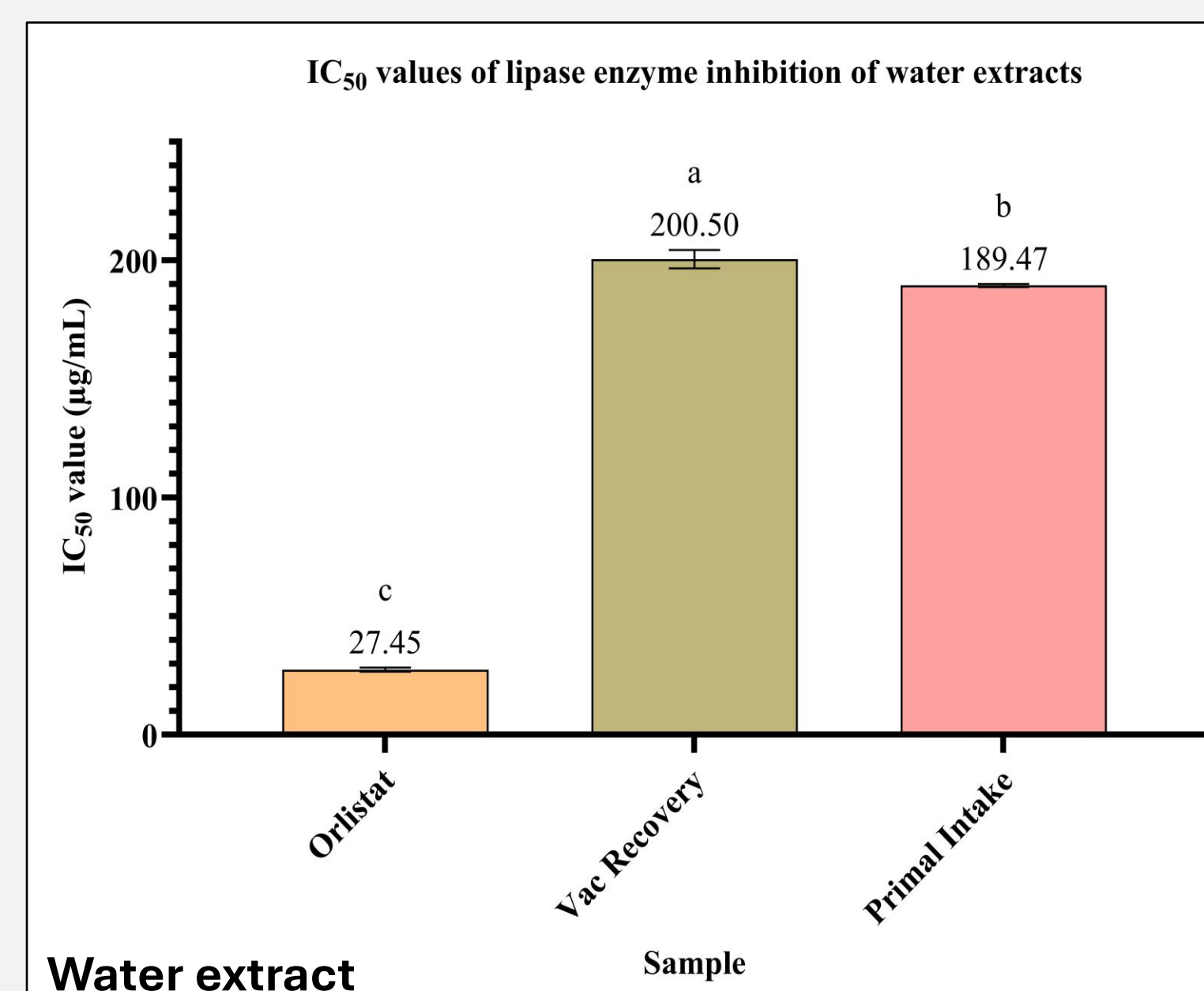
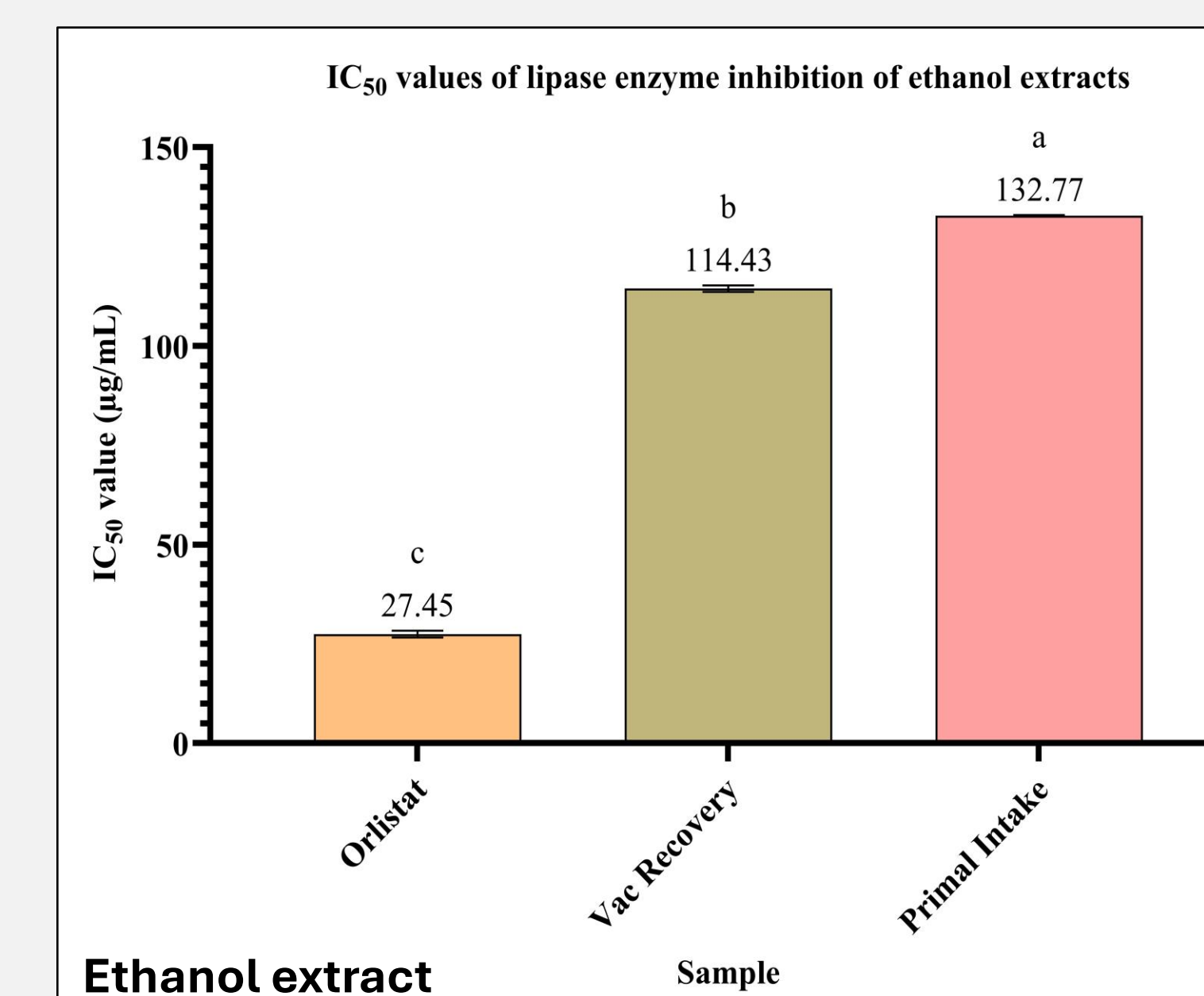


Fig 6. IC₅₀ of lipase inhibition

Conclusion

These findings indicate that MVR and MPI capsules have moderate bioactive properties and significant antidiabetic and anti-inflammatory potential. Among the two capsules, MVR demonstrates a more pronounced ability to inhibit the digestion of carbohydrates and shows a significant capacity to mitigate inflammation.

Reference

Mošovská, S.; Nováková, D.; Kaliňák, M. Antioxidant Activity of Ginger Extract and Identification of Its Active Components. Acta Chim. Slovaca 2015, 8 (2), 115–119. <https://doi.org/10.1515/acs-2015-0020>.