



Evaluation of the anti-aging potential of *Rajata Bhasma* in D-galactose-induced oxidative stress in Wistar rats

U. H. Poornima Jeewanthi¹, P. A. Paranagama^{1*}, Kapila N. Seneviratne¹, N. Jayathilaka¹, S. Wickramarachchi¹, Mukesh B. Chawda², Ketan M. Bhapkar³, R. V. Gudi³

¹Department of Chemistry, Faculty of Science, University of Kelaniya, Sri Lanka, ²Medical Services Solumiks Herbaceuticals Limited, India, ³Shree Dhootapapeshwar Limited, India

Introduction

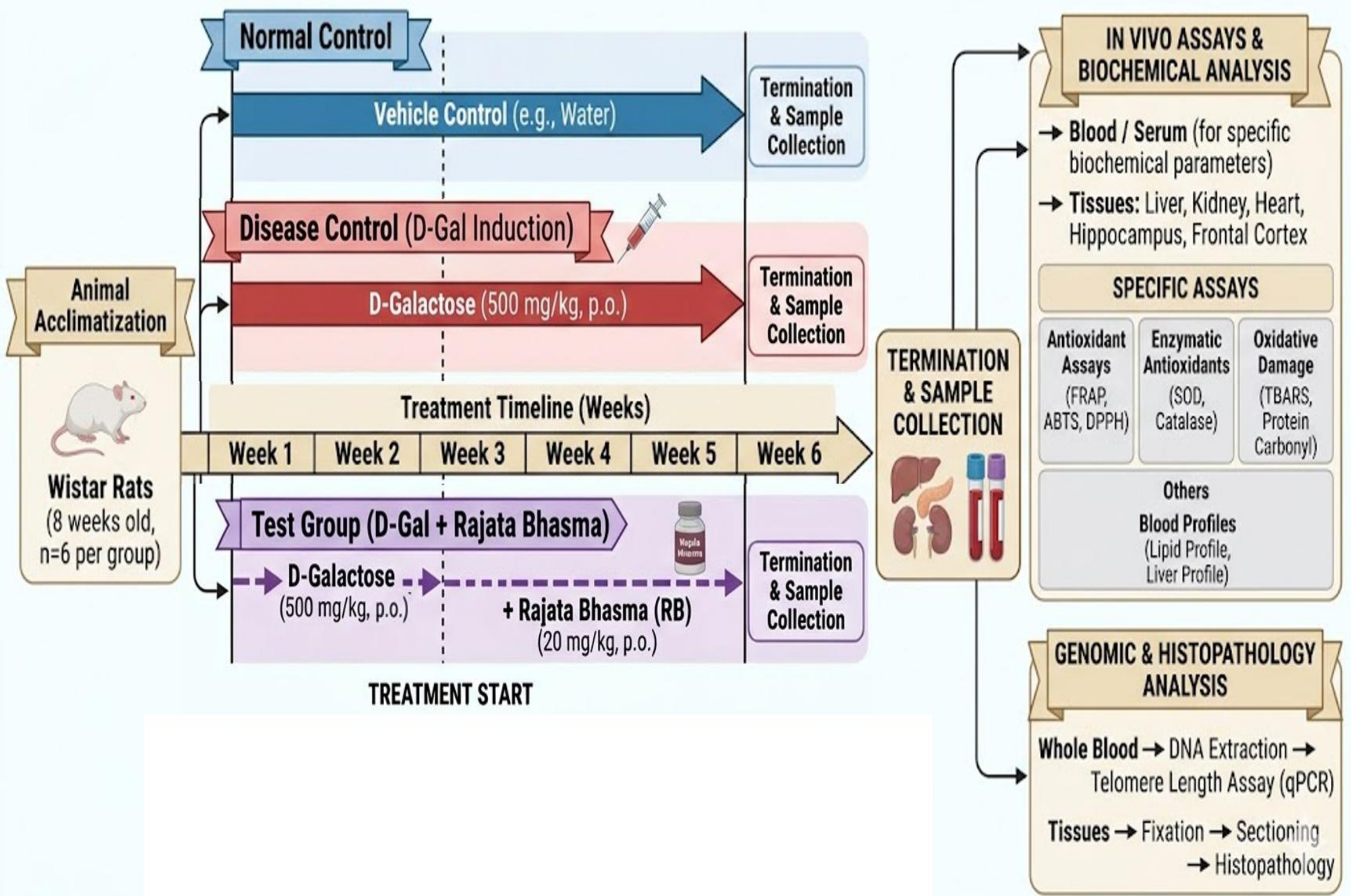
Aging is the time-dependent, progressive decline in the physiological functions of an organism.

This process leads to an increased vulnerability to diseases and a decreased ability to maintain internal balance (homeostasis).

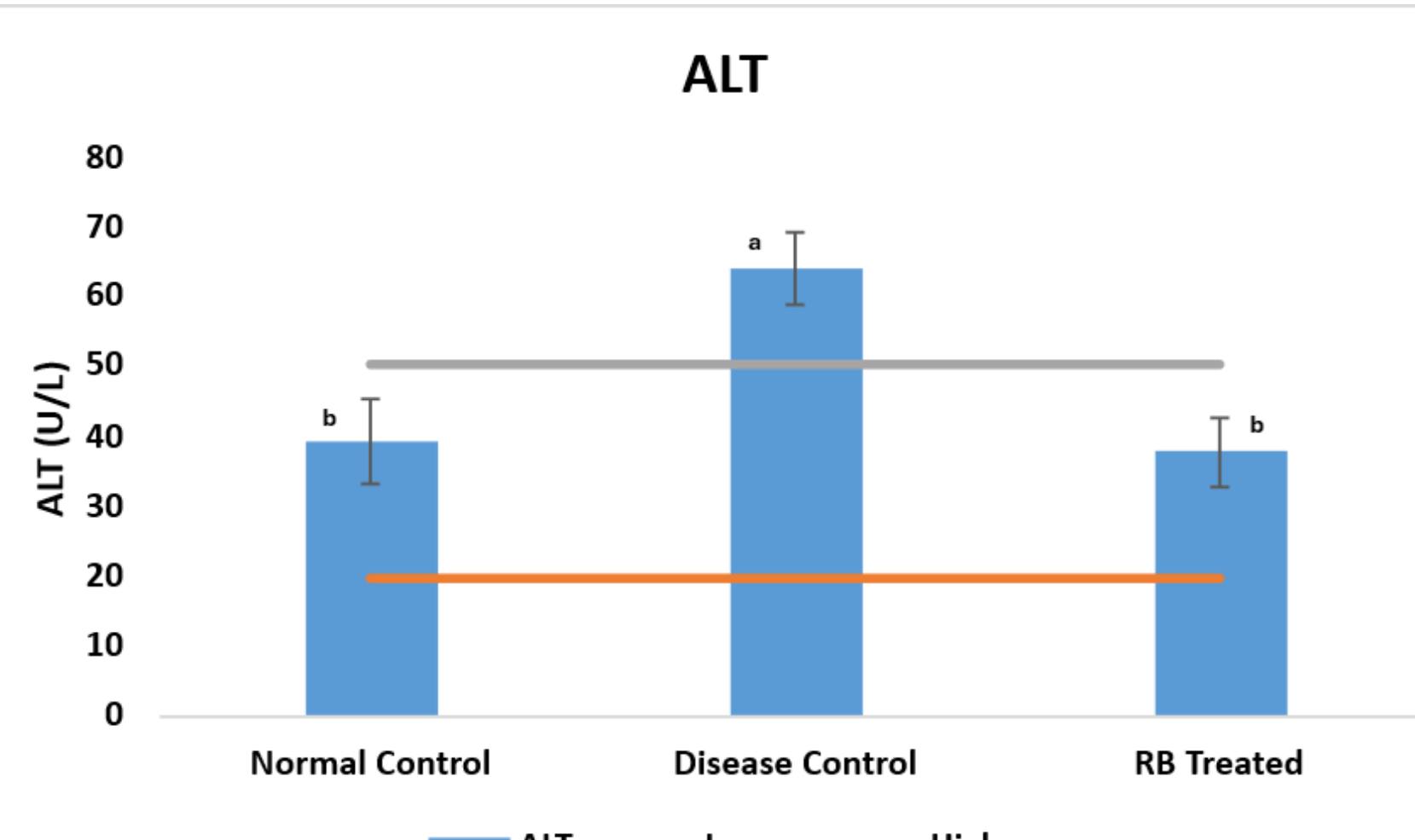
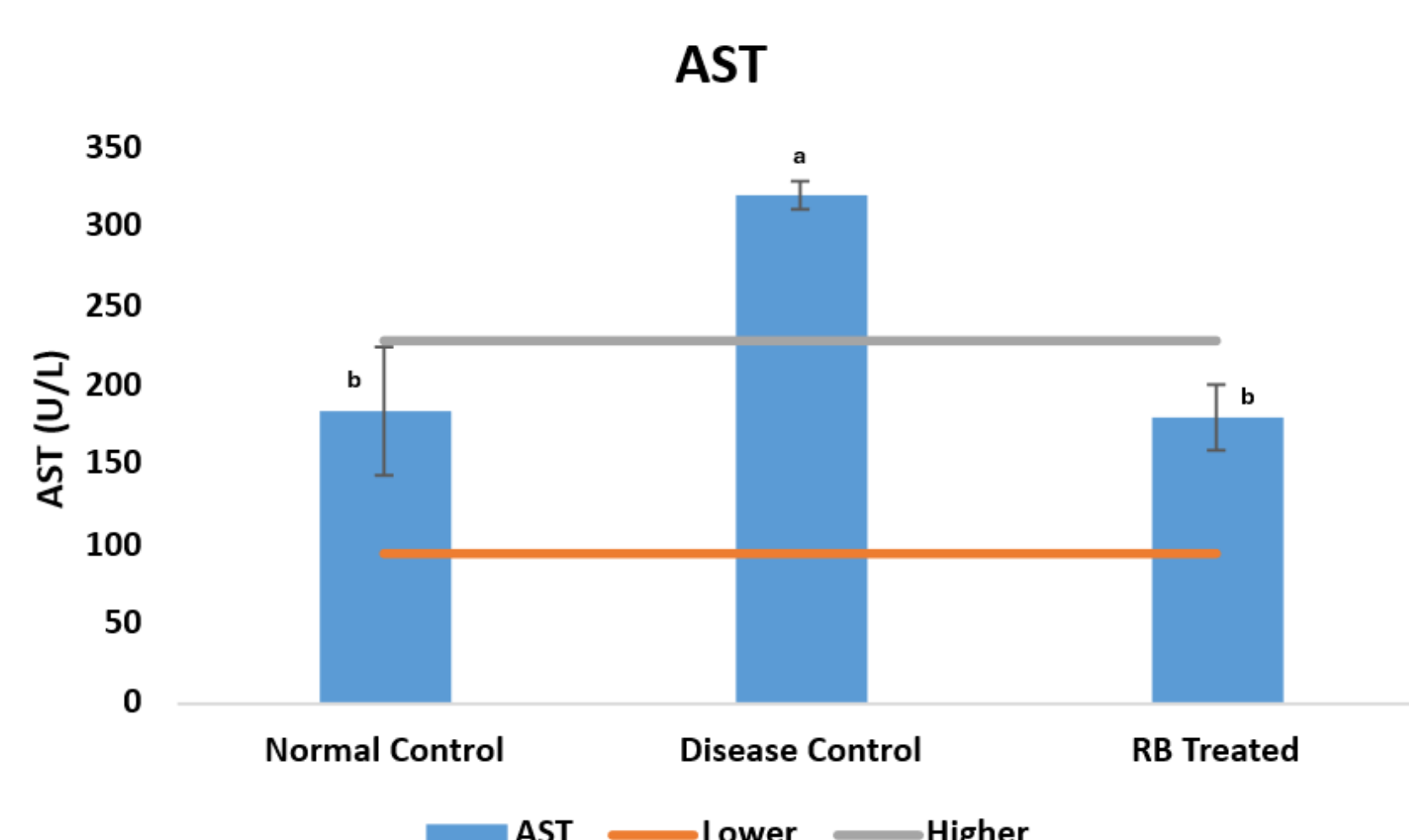
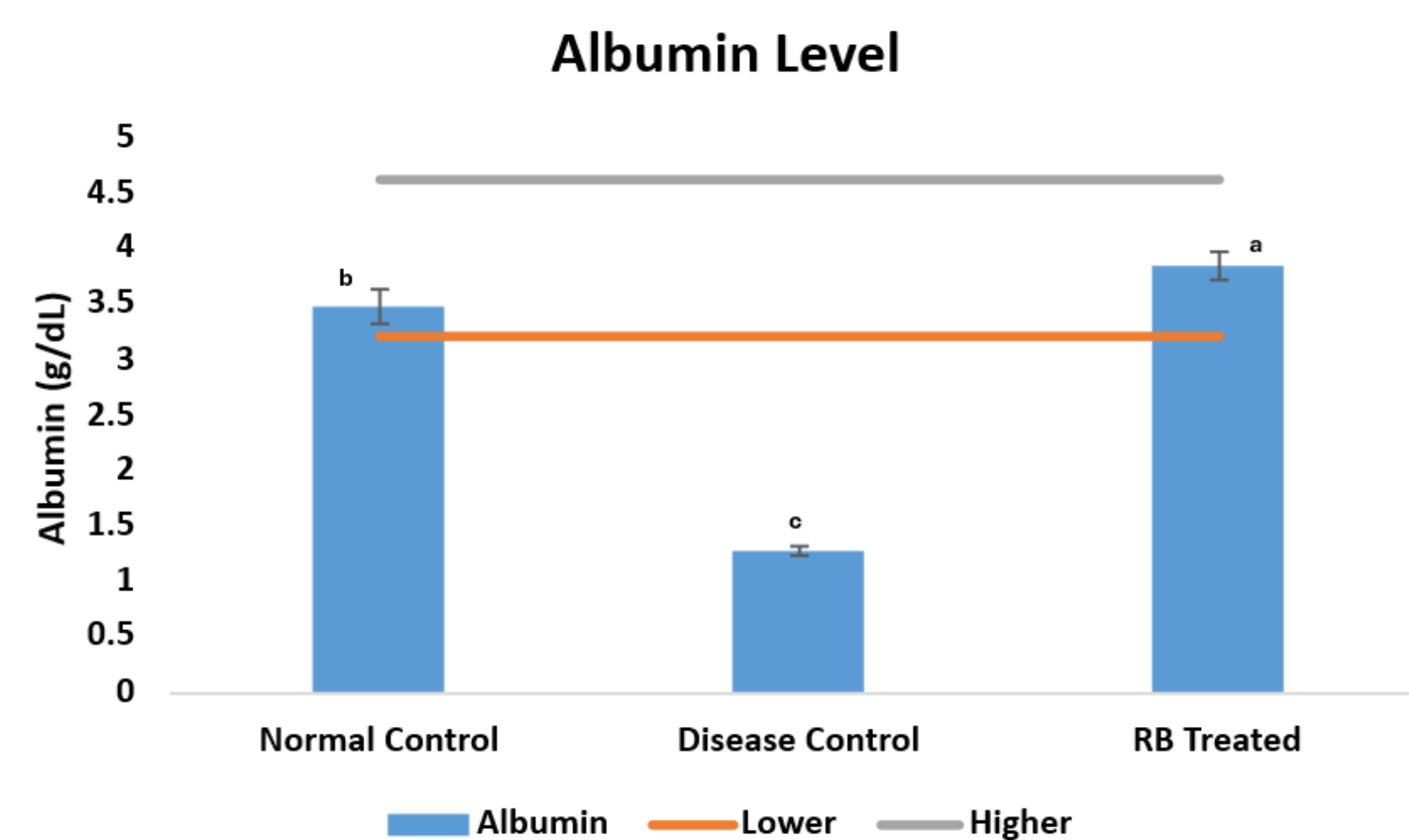
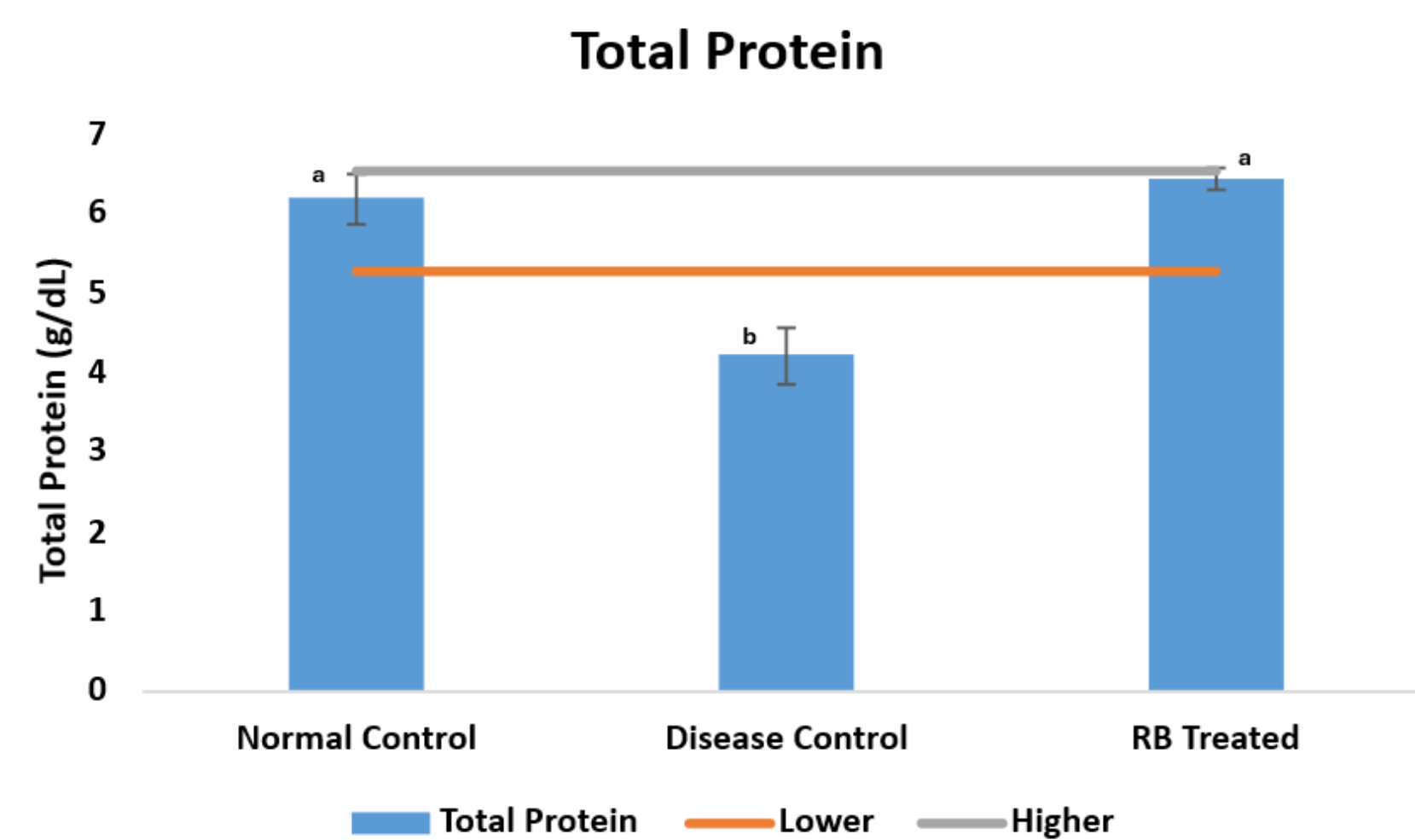
At the cellular level, it is characterized by the accumulation of molecular damage, particularly from oxidative stress due to the production of Reactive Oxygen Species (ROS).

D-galactose acts as an accelerant; it creates an artificial state of high oxidative stress that forces the body to 'age' biochemically, providing a measurable baseline to test the rejuvenative properties of Rajata Bhasma.

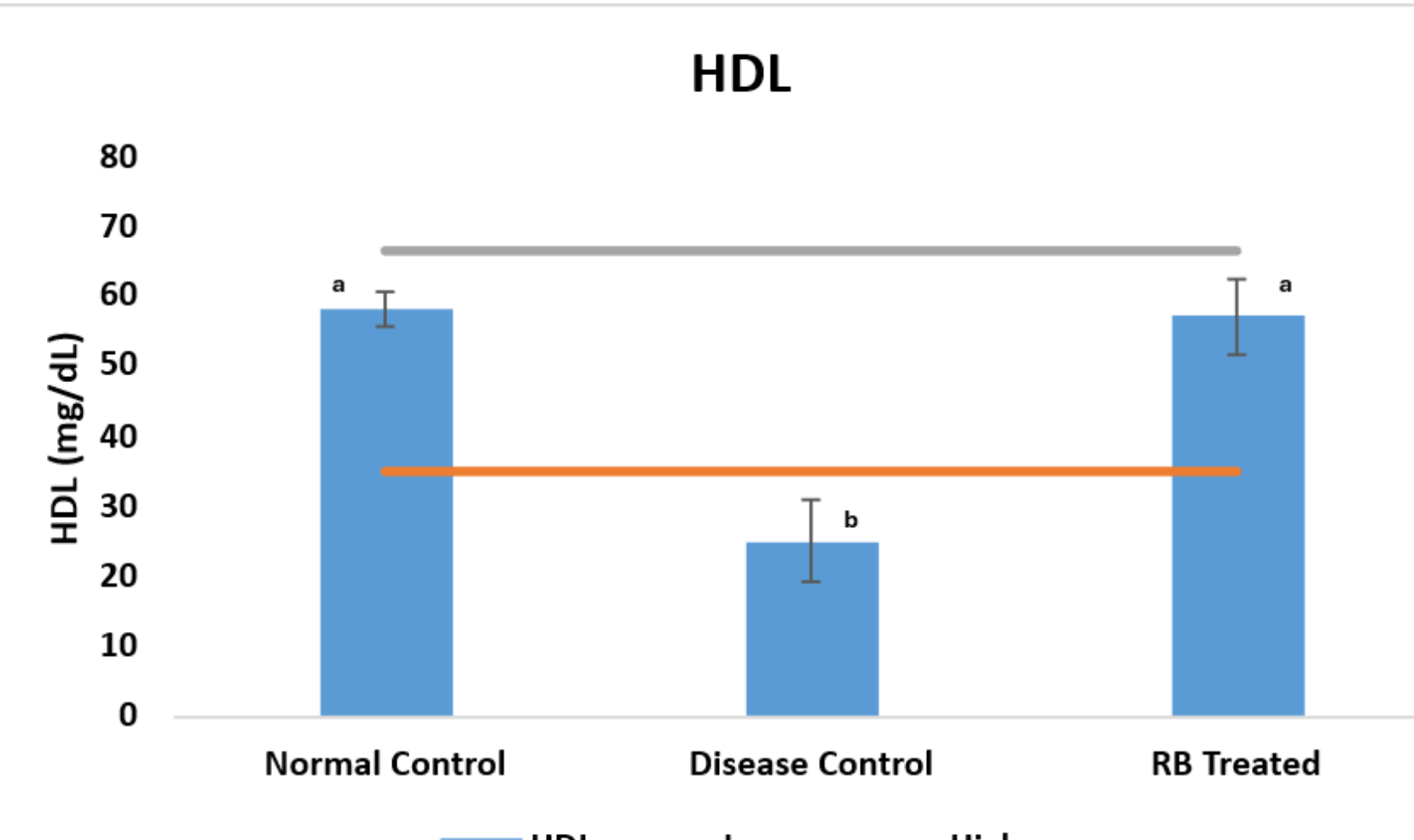
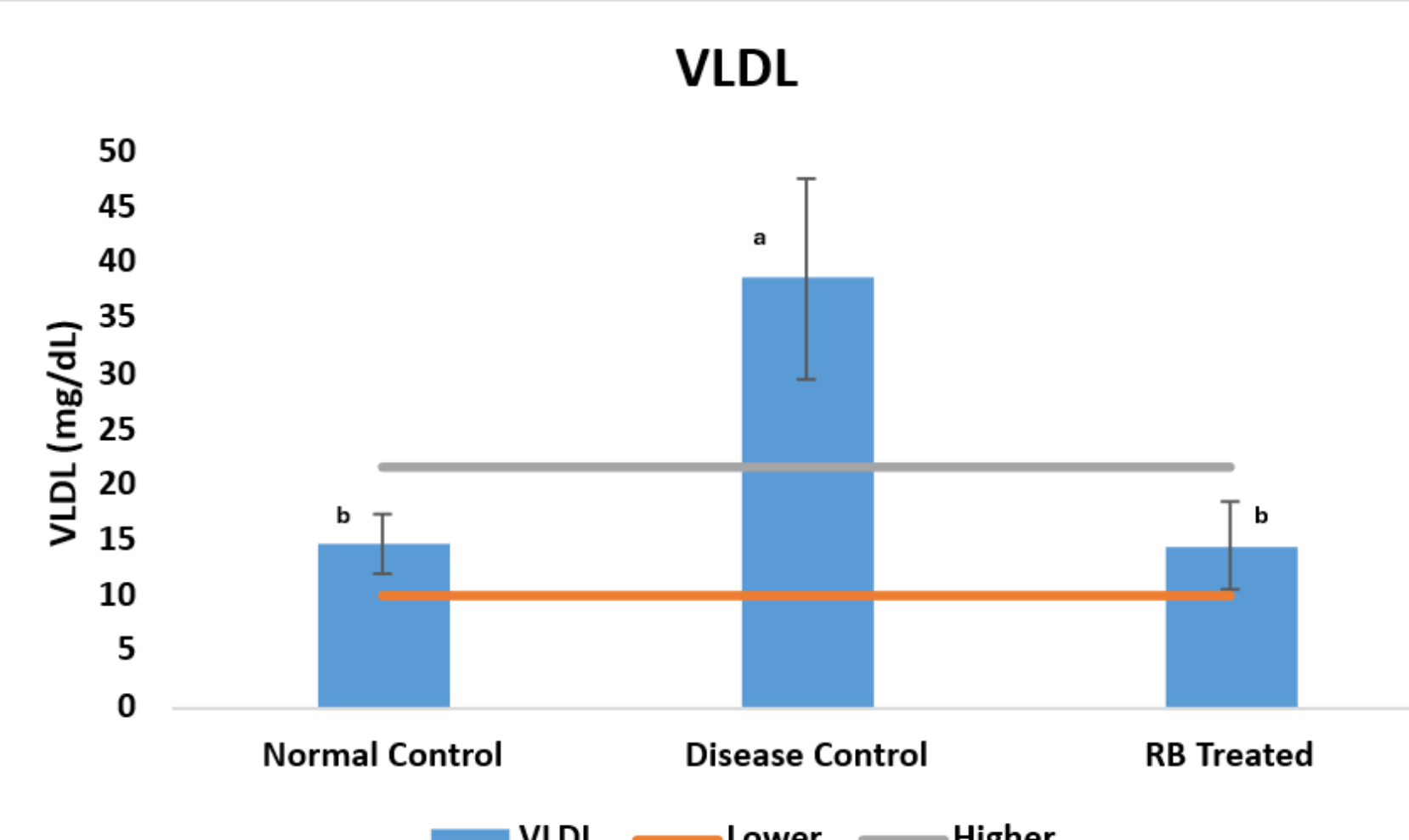
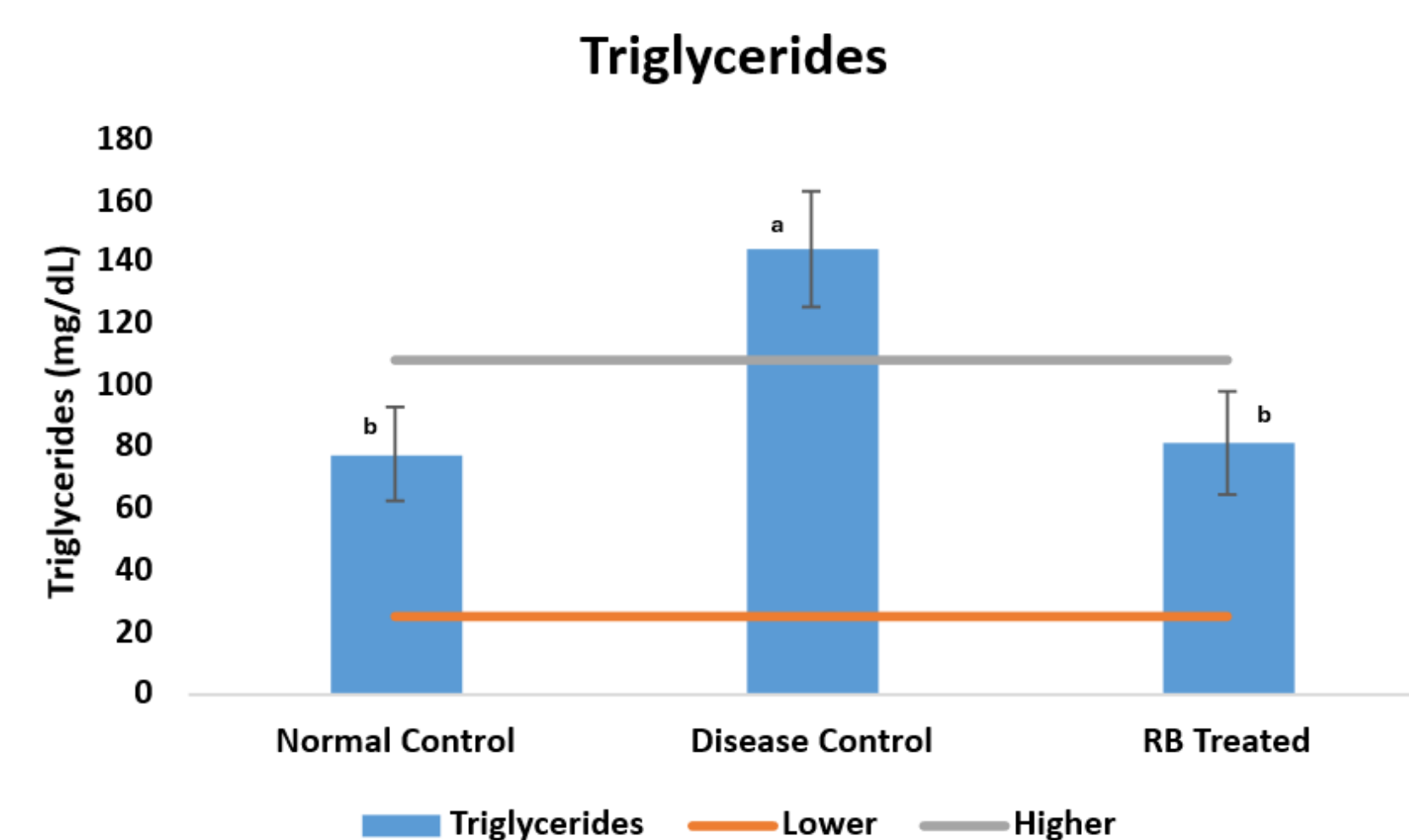
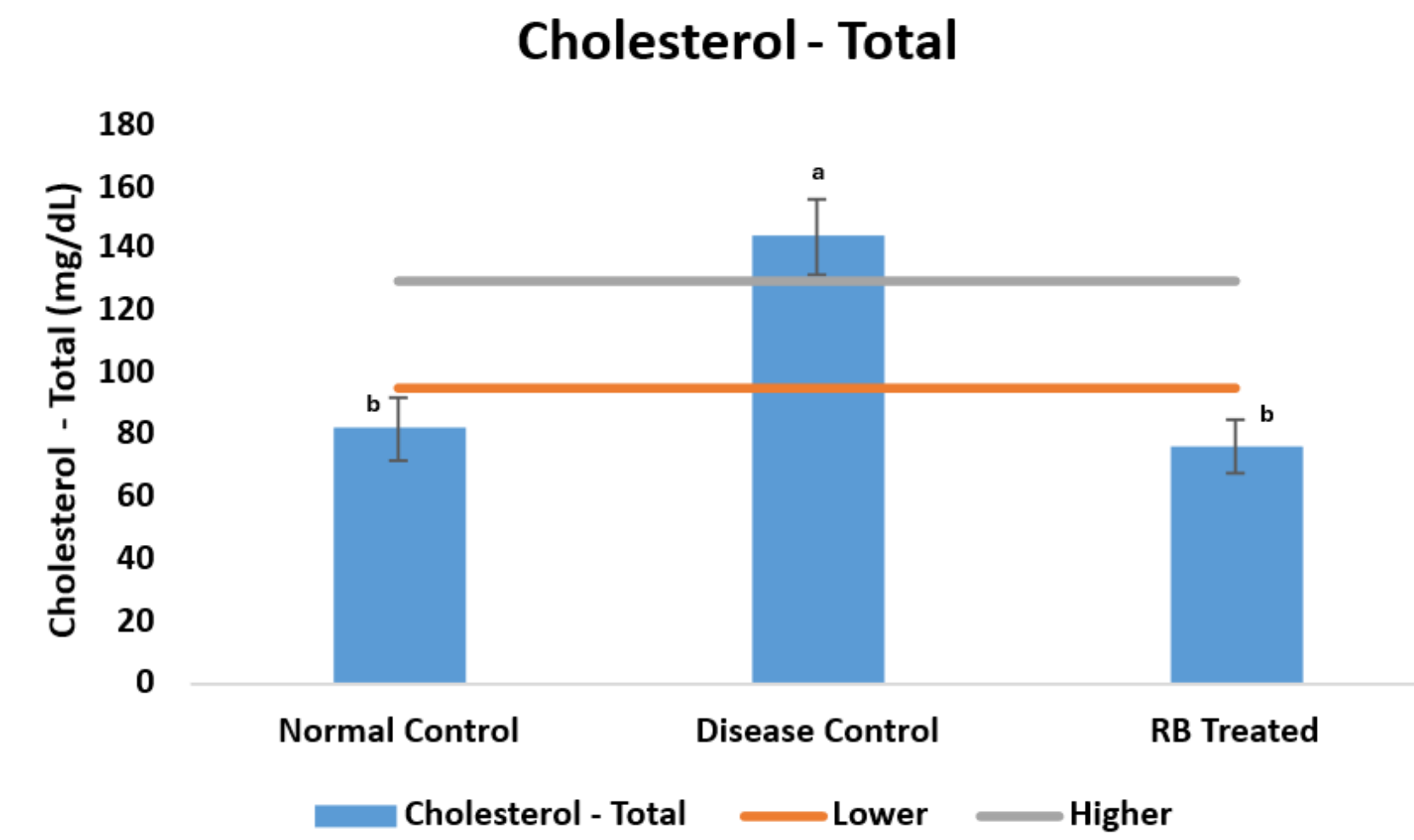
Methodology



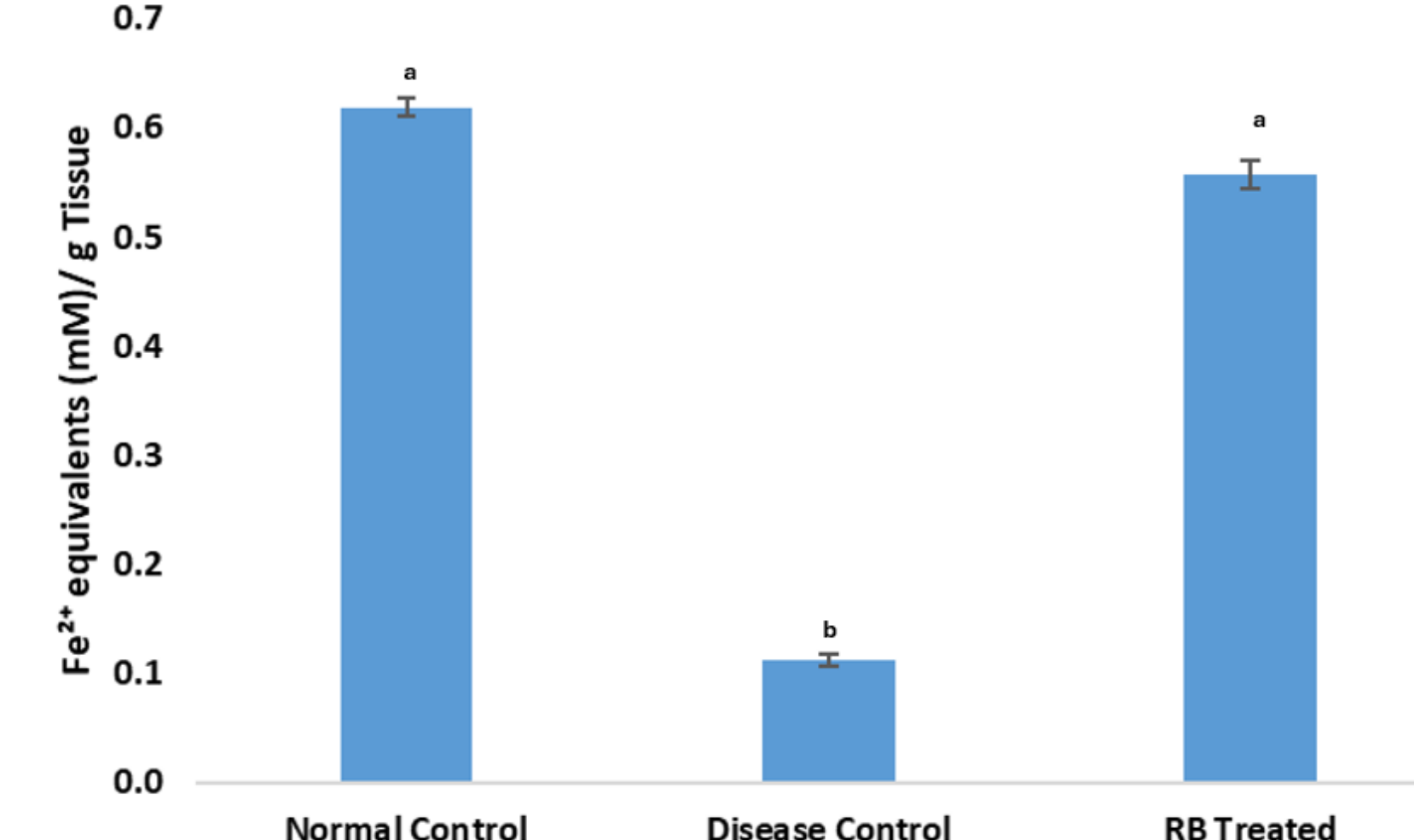
Liver Profile - Serum



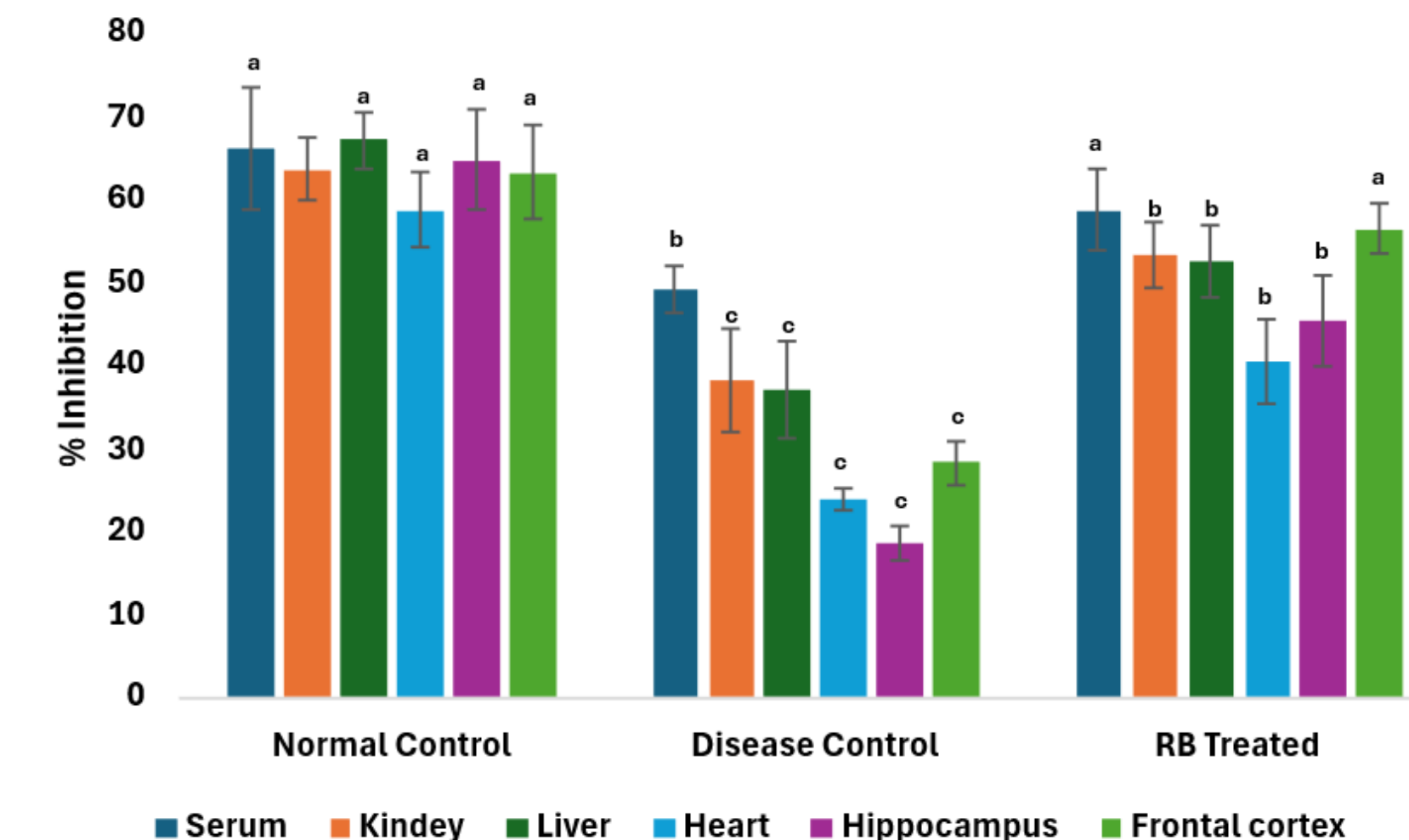
Lipid Profile - Serum



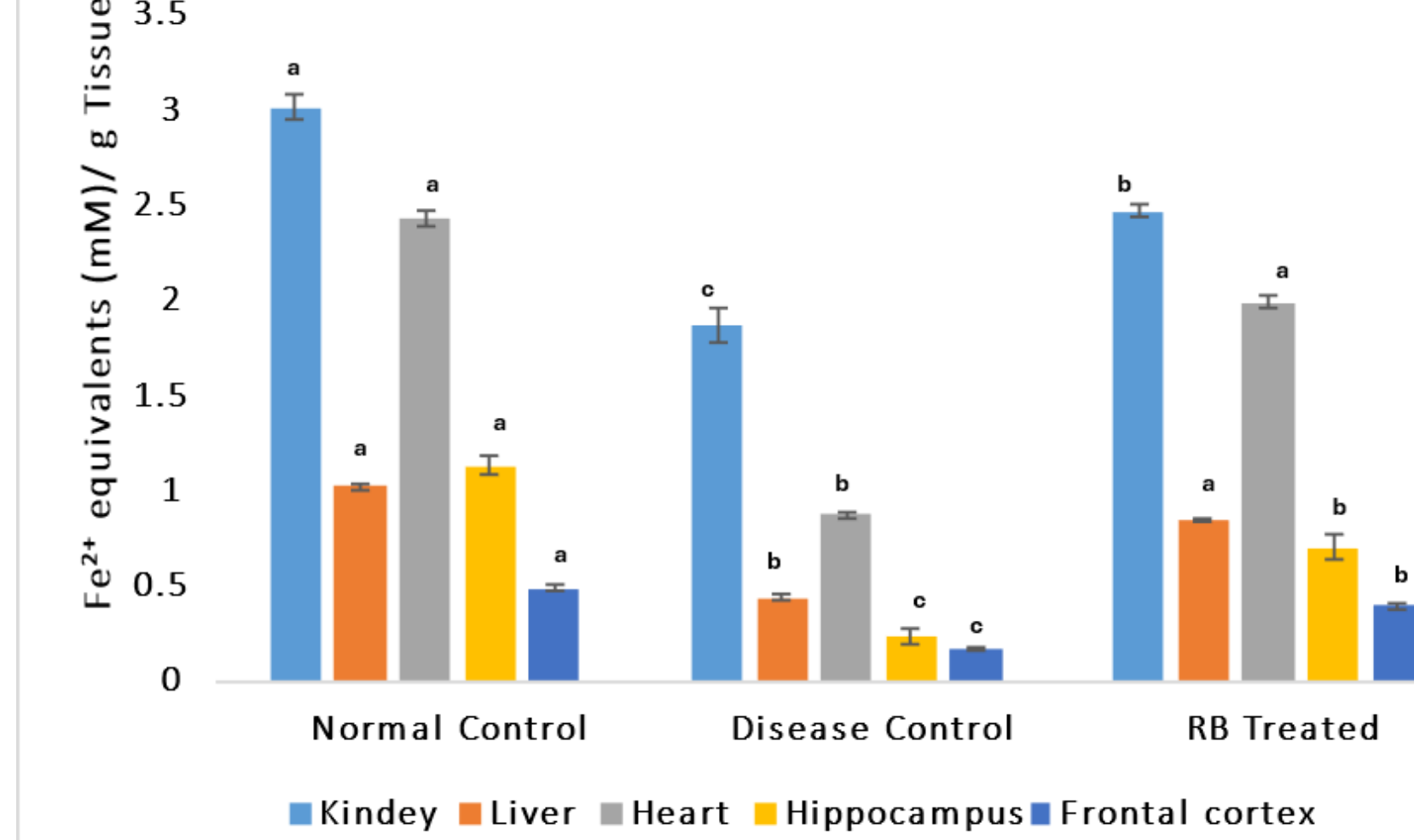
In vivo FRAP Assay - Serum



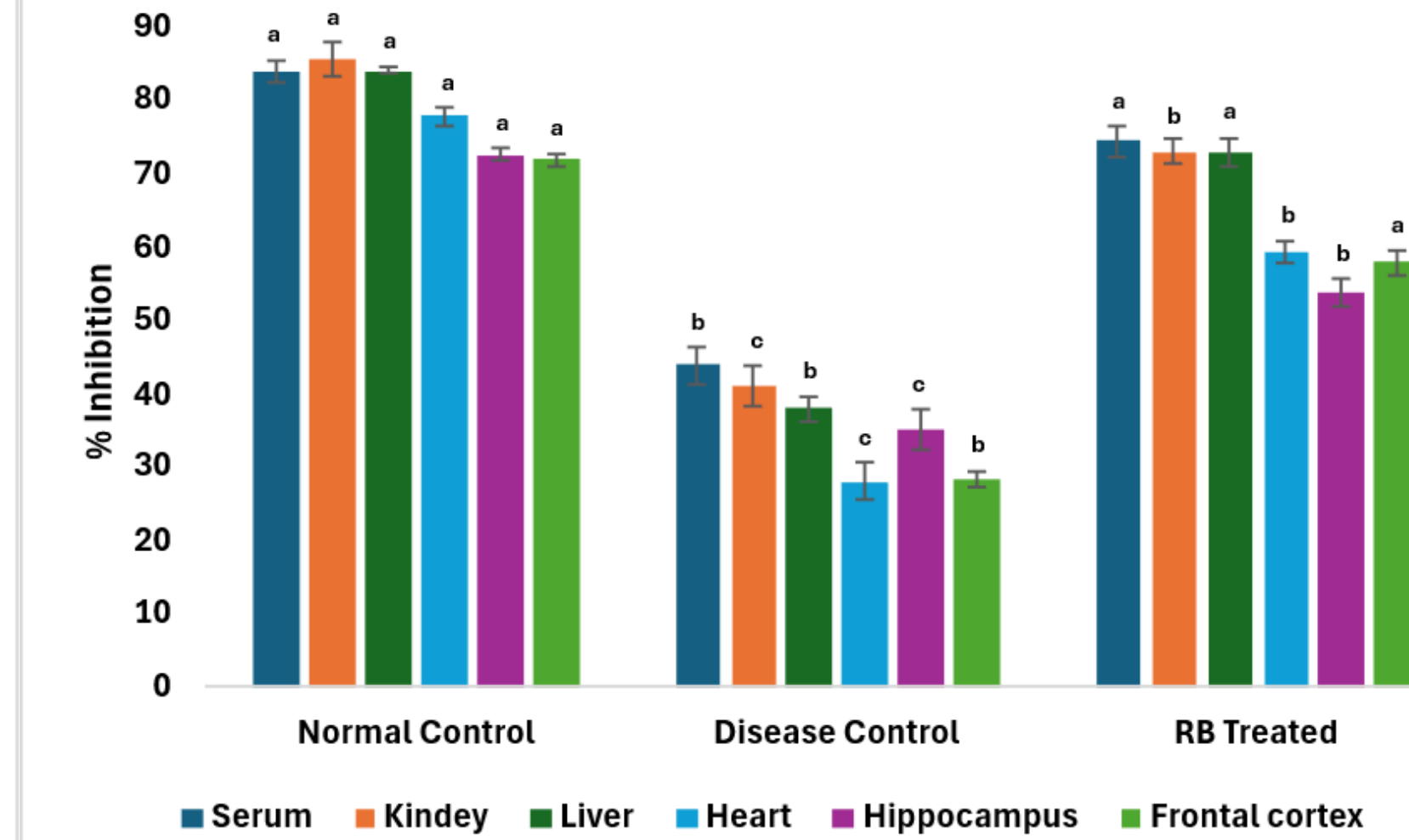
In vivo DPPH Assay



In vivo FRAP Assay – Tissues



In vivo ABTS Assay



Conclusion

Rajata Bhasma demonstrates potent anti-aging and hepatoprotective effects by successfully neutralizing D-galactose-induced oxidative damage and maintaining systemic biochemical integrity, validating its traditional use as a rejuvenative agent.

References

Ihedioha, John Ikechukwu, Onyinyechukwu Ada Noel-Uneke, and Thelma Ebele Ihedioha. "Reference values for the serum lipid profile of albino rats (*Rattus norvegicus*) of varied ages and sexes." Comparative Clinical Pathology 22, no. 1 (2013): 93-99.

Patel, Suresh, Satish Patel, Ashvin Kotadiya, Samir Patel, Bhavesh Shrimali, Nikita Joshi, Tushar Patel et al. "Age-related changes in hematological and biochemical profiles of Wistar rats." Laboratory Animal Research 40, no. 1 (2024): 7.