

Determination of Gallic Acid Standard by using 96-well UV-transparent microplate

▪ Instrument

Microplate Reader instrument model MR-1000S from Biometrics Technologies, Inc. (BMT) which having the wavelength range 200-1000 nm.

▪ Material and Methods of The Experiment

- 96 well UV-transparent microplate (P/N 807010) from BMT.
- 100mg/L stock standard of Gallic Acid
- Absolute methanol

Preparation of Stock Solution

- 1) A 100mg/L stock standard of Gallic Acid was prepared by dissolving 100 mg Gallic Acid in 1 L absolute methanol in volumetric flask.
- 2) Working standards were prepared by pipetting 35, 70, 105, and 140 μ L aliquots of the stock standard solution into 1.5 mL microcentrifuge tubes and diluting them with absolute methanol to a final volume of 700 μ L, forming 5, 10, 15, and 20 mg/L standard solutions.

Measurement

- 1) Pipette 200 μ L of the solution into each well of a 96-well UV-transparent microplate (P/N 807010).
- 2) Measure the absorbance at a wavelength of 278 nm using the Bioplate Reader MR-1000S.

Result

Table 1 The absorbance of resulting solutions was measured on Bioplate Reader MR-1000S at 278 nm using 96-well UV-transparent microplate.

Gallic Acid concentration (mg/L)	Absorbance				
	1	2	3	Mean	SD
5	0.193	0.200	0.211	0.201	±0.009
10	0.341	0.477	0.363	0.394	±0.073
15	0.587	0.690	0.576	0.618	±0.063
20	0.759	0.857	0.826	0.814	±0.050

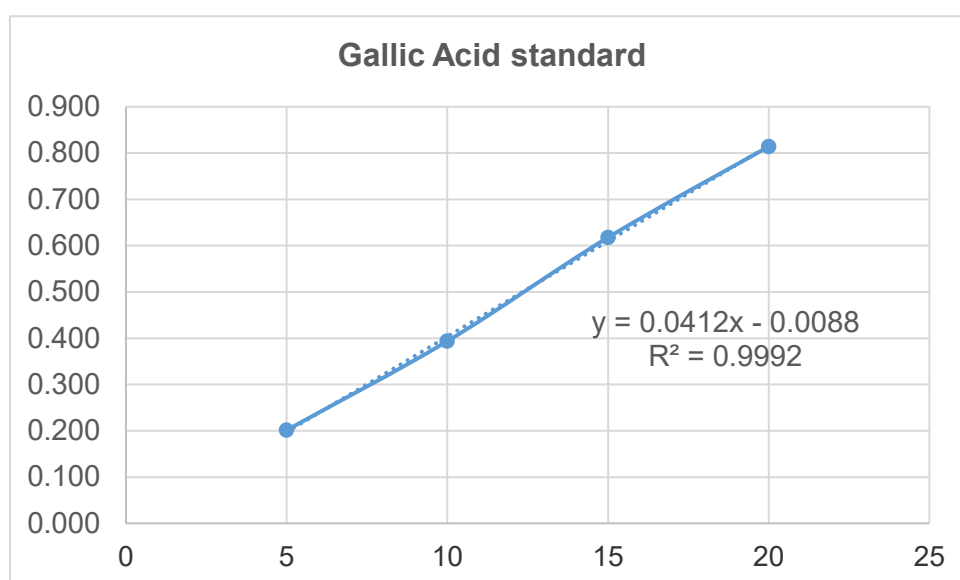


Figure 1: Gallic Acid standard curve.

Conclusion

The 96-well UV-transparent microplate is an effective and efficient tool for measuring the sample in UV region for ex., Gallic Acid concentrations using the Bioplate Reader MR-1000S. Its ease of use, cost-effectiveness, high sensitivity, and accurate results make it an excellent choice for standard analysis. Additionally, the 96-well UV-transparent microplate is well-suited for reliable performance and high throughput (measures 96 samples within 6 seconds in fast mode) with the microplate reader, ensuring consistent and precise measurements.