

Analysis of the Spectrum Patterns of Erythrocyte Interaction in Blood-EDTA in Cancer Patients

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ABSTRACT

This research aims to determine the parameters that differentiate the absorbance spectrum patterns of EDTA-treated erythrocytes in cancer patients and normal subjects, explaining physical symptoms based on the absorbance spectrum patterns of EDTA-treated erythrocytes.

The patterns of blood cell interactions were detected using a spectrophotometer with a wavelength (λ) of 560 nm. A blood volume of 550 cc was utilized. A laptop was connected to the spectrophotometer for data recording. The analysis of absorbance pattern data was based on the recorded absorbance data in the laptop. Based on the spectrum pattern, physical parameters describing the condition of erythrocyte systems in blood-EDTA were analyzed. The physical parameter used was the clarity rate of blood-EDTA.

The calculation results indicate that the clarity rate pattern of blood-EDTA forms the equation patterns $y = -7E-10x^3 + 3E-07x^2 - 4E-05x + 0.0014$ for colorectal cancer subjects, while for normal subjects, it is $y = -8E-07x + 7E-05$. Both equations occur within the time interval of 300 s to 200 s. However, both equations are not ideal as they have an R2 value below 0.9.

Kata Kunci: *absorbance, erythrocyte, spectrophotometer, cancer*