

UV ABSORBANCE OF LYMPHOCYTES

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ABSTRACT

The UV absorption spectra of human lymphocytes were obtained. It was found that UV absorption spectra of lymphocytes from blood of patients with B-cell chronic lymphocytic leukemia have a noticeable peak with maximum at ~260 nm, and spectra of lymphocytes of healthy subjects do not have such a peak. Since the spectra obtained are similar to UV absorption spectra of nucleic acids, we concluded that the UV absorption of lymphocytes is mainly due to the absorption of lymphocyte nucleic acids. Furthermore, after comparison the spectra obtained with the spectra of the oxidized and not oxidized nucleic acids, we convinced that a peak value at 260 nm reflect the degree of oxidation of the lymphocyte nucleic acids. In this fashion we concluded that the root cause of chronic lymphocytic leukemia is the oxidation of lymphocyte nucleic acids. This conclusion explains why the UV absorption spectra of lymphocytes of healthy subjects do not have the peak at ~260 nm – their nucleic acids are little oxidized. In the end we came to the conclusions: 1. Nucleic acids can be oxidized at their isolation – such oxidation results in the appearance of peaks at 260 nm in their UV absorption spectra. 2. UV absorption spectra of nucleic acids healthy organisms may not have such a peaks.

Keywords: Blood, lymphocytes, DNA, RNA, UV absorption spectra.