



Flow cytometry for diepoxybutane test analysis

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ABSTRACT. The main feature of Fanconi anemia (FA) is the high sensitivity of the cells to the clastogenic agent, diepoxybutane (DEB). Thus, differential diagnosis of this syndrome can be made by cytogenetic analysis; adding DEB to lymphocytes in culture (DEB test) increases the number of chromosome breaks. Fanconi anemia cells have an abnormal cell cycle, with an increased frequency of cells arrested at G2. In order to determine if flow cytometry can be utilized for FA diagnosis, we cultivated lymphocytes with DEB and analyzed them for G2 accumulation. Lymphocytes cultivated for 72 h were labeled with CD3 antibody and propidium iodide for analysis of the cells in the G2 phase. Cultures of lymphocytes from two FA patients who were diagnosed by the DEB test and six control individuals with a negative DEB test had 55.26% (SD \pm 6.97) and 2.81% (SD \pm 0.22) cells arrested at G2, respectively. We

conclude that flow-cytometry analysis of cells exposed to DEB can be useful for FA diagnosis.

Key words: Diepoxybutane test; Flow cytometry; Cell cycle; Fanconi anemia