

Evaluation of lymphocytes inactivation by extracorporeal photopheresis using tetrazolium salt based-assay

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Abstract

Extracorporeal photopheresis (ECP) is accepted as a second-line therapy for the treatment of acute and chronic steroid-refractory graft versus host disease (GvHD), cutaneous T-cell lymphoma and solid organ transplantation. ECP should be validated: we compared in parallel apoptosis and proliferation analysis of patient lymphocytes treated with 8-MOP ECP using respectively Annexin V/7-aminoactinomycin D (7-AAD) and CFSE with a tetrazolium salt (WST-1) method. Using WST-1 assay we found a significant decrement ($p < 0.01$) of metabolic activity at 4 days between ECP-treated and untreated cells. This finding was confirmed by the significant decrease of cell proliferation and increase of cell death observed by CFSE and 7AAD-Annexin V, respectively. Accordingly, once validated against a reference method, WST-1 could represent a rapid and easy assay for routinely quality control of ECP.