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Proliferation of Human Lymphocytes in Medium Supplemented with Autologous Plasma – A Novel Technique

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ABSTRACT Several factors contribute to human lymphocyte culture for the procurement of sufficient number of clear well spread metaphase plates for any cytogenetic analysis including culture medium, growth supplements, colchicine treatment, hypotonic treatment, fixation and the technique of slide preparation. Considering all these factors, in the present study, the growth and multiplication of human lymphocytes was observed and studied under different culture conditions and some of the steps were modified so as to give an estimation of the best yield. McCoy’s 5a culture medium was supplemented with autologous plasma, which substituted the fetal calf serum. Further, various concentrations and exposure times of colchicine were experimented and standardized so as to obtain good chromosome spreads of both metaphase stage (short chromosomes) and in late prophase stage (long chromosomes). This method can therefore be considered as a less expensive and more suitable procedure, for obtaining the plates for analysing numerical abnormalities employing the shorter chromosomes and high resolution banding studies employing the longer chromosomes for cytogenetic research.