Abstract

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Development of a chemically defined serum- and protein-free medium for growth of human peripheral lymphocytes.

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BACKGROUND: A chemically defined, protein-free medium (designated CFBI 1000, where CFBI = Clayton Foundation Biochemical Institute) that supports human peripheral lymphocyte proliferation has been developed.

SUMMARY: This medium allows exploration of individual metabolic differences by varying the medium composition as well as providing a base to explore further the mechanisms of lymphocyte activation in a system initially free of added macromolecular species other than mitogen. The peripheral blood lymphocyte is an ideal system for metabolic studies because it is easily obtained, is a primary resting cell that can be activated to proliferate, and presumably reflects both the genetic makeup and biochemical environmental history of the individual at the time the cells were formed. Examination of the role of various factors in lymphocyte activation and subsequent events may be simplified by the utilization of a medium that is protein-free and chemically defined.

CONCLUSION: The CFBI 1000 medium supports the growth response of human peripheral lymphocytes to mitogen as measured by [3H]thymidine incorporation to an extent comparable to other media used widely in assessment of lymphocyte proliferation.

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