# A B CELL DIFFERENTIATING THYMIC CELL LINE

**BACKGROUND:** The development of T lymphocytes in the thymus is critical to the establishment of a properly functioning immune system. However, while T lineage cells are the predominate intrathymic population, B cells are also present. Recent studies have shown that these thymic B cells can function as antigen presenting cells and can induce clonal deletion of selected T cell receptor expressing T cells. The availability of a B cell supporting thymic cell line would be useful in the study of lymphocyte development and differentiation.

**DESCRIPTION:** Researchers at the University of California have developed and characterized a thymic stromal cell line that has the capacity to support B cell development from intrathymic precursors. This cell line is extremely efficient at supporting the development of surface IgM-expressing B cells. These B cell intrathymic precursors can be detected for at least two weeks post-natally in the thymus of mice. The cultures are relatively short-term indicating that the line supports terminal differentiation of B cell precursors and not their self-renewal.

**APPLICATIONS:** The UC B cell supporting thymic stromal cell line will make it possible to identify ligand-receptor interactions involved in lymphocyte development, to define cytokines that might regulate intrathymic development, and to test the effects of such factors on lymphocyte growth and differentiation in vivo.

**ADVANTAGES:** The UC cell line efficiently supports the development of B cells from an intrathymic precursor. The cultures are relatively short-term indicating that the line supports terminal differentiation of B cell precursors and not their self-renewal. This is significantly different from what is observed in long-term bone marrow B lymphoid cultures from marrow stromal cells. This line would be useful in identifying novel B cell differentiation factors.