

ries: *B cells*, which can differentiate into plasma cells that produce antigen-specific antibodies; and *T cells*, which are further subdivided into a number of subsets based upon their function. These include cytotoxic T lymphocytes (CTL), delayed-type hypersensitivity cells (TDTH), T-helper ( $T_H$ ) cells that aid in the generation of either cell-mediated immune responses or antibody-mediated immune responses, and suppressor T ( $T_S$ ) cells that act as regulatory cells for both cell-mediated and antibody-mediated immune responses. Functionally associated with the lymphocytes are antigen-presenting cells (APC), such as macrophages and dendritic cells, which act to "process" and "present" antigens to the various subpopulations of B and T cells. The APC are required for the induction, generation, and regulation of immune responses. Antigens are "presented" to antigen-specific T lymphocytes in the context of major histocompatibility complex-encoded cell-surface molecules that are expressed by APC (1). The induction and elicitation phases of the immune response that are initiated by the APC causes both the activation and the clonal expansion of the antigen-specific T cells.

Mature T cells are continually trafficking between the circulation and various different secondary lymphoid organs such as the spleen, peripheral lymph nodes, mesenteric lymph nodes, and Peyer's patches (2). The continual surveillance of different organ systems in the body by these recirculating lymphocytes thereby provides an enhanced protection against not only pathogens and toxins, but also against neoplastically transformed somatic cells. This continual immunosurveillance is of particular importance for those organ systems, such as the skin and the gastrointestinal tract, that are in constant contact with the numerous harmful agents encountered in the external environment.

The immunosurveillance capabilities of the immune system are further enhanced by the compartmentalization of subsets of T lymphocytes into defined circulatory circuits. For example, recent studies have demonstrated the preferential homing of a subset of T cells to the Peyer's patches, mesenteric lymph nodes, and lamina propria of the intestine, a feat mediated by a distinct lymphocyte-binding molecule expressed only within the microvasculature of these tissues (3). These data indicate the existence of a population of lymphoid cells that are restricted to gut-associated lymphoid tissue. Although much work remains to be done, data from a variety of sources also indicate the existence of an immunological circuit, restricted to the skin, that has been termed *skin-associated lymphoid tissue* (SALT). Compartmentalized immunological circuits thereby increase the probability of an interaction between an antigen-specific T cell and an antigen-bearing APC by directing effector cells to the anatomical sites(s) of antigen deposition (4,5).