(76,77,78,79). Kanazawa et al. (80) report that *peroxynitrite* is increased in airway epithelial cells and eosinophils in asthmatic patients compared with normal control subjects. To conclude, the above discloses the MOA of an inflammatory disorder. Chapter 27 describes the MOAs of various autoimmune diseases.

IX. CELLS OF THE IMMUNE SYSTEM

Cells of the immune system include DCs, T cells, B cells, NK cells, macrophages, Kupffer cells, microglia, and neutrophils. Kupffer cells (81) are resident macrophages that are part of the liver and do not circulate in the bloodstream, while microglia (82) are macrophages of the central nervous system. The term antigen-presenting cell (APC) refers to cells that can form an immune synapse with a T cell, where the APC presents an antigen once the immune synapse is formed, and where the antigen is presented by way of the major histocompatibility complex (MHC) class I or MHC class II of the APC, to the T cell. The consequence of antigen presentation is activation of the T cell. APCs include DCs, macrophages, and B cells.

In diagrams, all of these cells may be represented as a circle. Usually though, DCs are drawn in the shape of a starfish, because of the fact that DCs have dendrites or branches (83,84). There are two lineages of DCs, the myeloid DCs and plasmacytoid DCs (pDCs). The former type of DC resembles a starfish, while the latter is round (85). The long dendrites of DCs are believed to contribute to the remarkable efficiency by which DCs take up, process, and present antigen to T cells (86).

Immune response, as it applies to infections, cancer, inflammatory disorders, and autoimmune diseases, involves the following chain of events. DCs take up antigens, and present the

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