S–100 PROTEIN IMMUNOREACTIVE CELLS IN PORCINE LYMPHATIC ORGANS

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S–100 protein immunoreactive cells in porcine lymphatic organs were investigated immunohistochemically using anti-bovine S–100 protein rabbit serum.

In the thymus, immunoreactivity for S–100 protein was observed in myoid cells, epithelial reticular cells and those of Hassall's corpuscle, polynucleated giant cells, and some of the lymphocytes in the medulla. The immunoreactivity was also found in some macrophages in the thymic cortex.

In the spleen and lymph nodes, follicular dendritic cells (FDC) and tingible body macrophages (TBM) within the germinal centers, and some lymphocytes in the thymus-dependent area (the periarterial lymphatic sheath of the spleen and the cortex-like areas of lymph nodes) were immunoreactive. In all lymphatic organs investigated, the immunoreactivity was also demonstrated in the endothelial cells of the arteries.

The present study further focused on the intracellular localization of the protein in the thymic myoid cells and on the development of FDC and TBM in the process of formation of germinal centers. Myoid cells were large thymic medullary cells having an elliptical cytoplasm and a large nucleus of poor chromatins. The cells were furnished with many cytoplasmic myofibrils which showed various irregular courses in electron microscopic analysis. In immunoelectron microscopical analysis using protein A-gold, the immunoreactivity for S–100 protein was found throughout the cytoplasm except in the cell organelles such as mitochondria.

The lymphatic nodules were classified into four types divided further into primary nodule types I and II and secondary nodule types I and II according to the occurrence of FDC and/or TBM within the nodule. FDC appeared in the primary nodule and increased in number with the advance of the germinal center formation. These morphological results suggest that FDC might be associated with the initial induction of germinal center formation in porcine lymphatic organs.