dent on the amount of NO production by macrophages. Additionally, it was emphasized that the macrophages from Nramp^r mice was activated by even in a small amount of cytokines, followed to induce the expression of iNOS mRNA via IFN-γ activation, produce a large amount of NO, and finally suppress the growth of intracellular pathogens. The process which Nramp generates the NO production in a signal transduction would be concerned with the activation by IFN-γ.

Molecular biological and histological analyses of Fas receptor-Fas ligand system in the testis of mice

Haruko Horikoshi

Laboratory of Experimental Animal Science,
Department of Disease Control,
School of Veterinary Medicine,
Hokkaido University, Sapporo 060, Japan

Although numerous studies have been reported on the cell surface receptor (FasR) and its ligand (FasL) which are mediators of apoptosis in the immune system, little is known about their role outside of the lymphoid system. Recently it has been shown that both FasR and FasL are expressed in several nonlymphoid tissues, such as testis.

In the present study, to find out the function of the FasL-FasR system in testis, the relationship between FasR or FasL expression and the distribution of apoptotic signal were investigated by molecular biological and histological techniques using normal and lpr mutant mice which had a leaky mutation in FasR. Both FasR and FasL mRNA were detected in the testis from normal mice by Northern hybridization and RT-PCR. FasR expression was observed on the cell surfaces of spermatogonia, spermatocytes and round-spermatids, but not on elongating spermatids by in situ hybridization and immunohistochemistry. Whereas, FasL expression was restricted to Sertoli cells. In the testis from lpr mice, it was noted by Northern hybridization and immunohistochemistry that FasR expression was reduced compared with that from normal mice.

Although an apparent difference of FasR expression in testis was detected between the normal and lpr mice, TUNEL method revealed that the apoptotic cells were localized to the stage12 of spermatogenesis in testis of both normal and lpr mice.

These results suggest that the FasL-FasR system plays a minor role in the regulation of physiological cell turnover within the testis. Additionally, it may be suggested that FasL in Sertoli cells of the testis involves in the defense mechanisms against FasR-bearing T cells.