

Expression Profiles of Peroxiredoxin Family in Murine Reproductive Organs

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Peroxiredoxin (Prx) has been known to play an important role in the protection against oxidative damage of reactive oxygen species (ROS). Recent reports implied that the ROS may be closely related with the reproductive system. To define the possible roles of Prx family in reproduction, the expression profiles were investigated in reproductive organs of four murine strains. Testis, epididymis, ovary, oviduct and uterus were surgically isolated from ICR, C57BL/6J X CBA F1, C57BL/6J, and 129/SvJ mice, and subsequently used in Western blot analysis to determine the expression levels and immunohistochemistry to characterize the testicular locations of Prx. Prx I in epididymis was expressed higher than that in testis. The expression levels of Prx II was relatively constant in all kinds of organs except slight overexpression in ovary and oviduct. Interestingly, there was compensational expression between Prx I and II in female reproductive organs. Prx III was very highly expressed compare to Prx I and II, especially further more in case of C57BL/6J. In cellular location, Prx I and II were stained in all testicular cells, but Prx III showed differential staining patterns following strains. In conclusion, Prx I and II may have a regional specificity, and Prx III was seemed to be a most potential antioxidant in murine reproductive systems. Presently, we are trying to produce Prx III-deficient mice to prove the roles of the overexpression.

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