Structure and developmental expression of *golli-mbp* gene products in *Xenopus laevis*

Reiko Nanba, Naoko Fujita, Saburo Nagata: Department of Biology, Japan Women’s University

To study roles of the *golli-myelin basic protein (mb)* gene products in development of the vertebrate nervous system, cDNA cloning and expression analyses were performed in *Xenopus laevis*. We molecularly cloned 2 homologues of the 18.5 kD isoform of mammalian MBPs, MBP.1 and MBP.2, produced from the distinct genes, designated *golli-mbp.1* and *golli-mbp.2*, respectively. We also isolated cDNA clones for Golli splicing isoforms, BG21.1, J37.1 and TP8.1, homologues of mouse BG21, J37 and TP8, respectively. In RT-PCR analyses, BG21 expression was found ubiquitously in adult tissues, unfertilized eggs and embryos throughout the developmental stages examined, whereas MBP, XJ37 and XTP8 mRNAs were expressed in brains, ovaries and testes in adults, and in embryos after the late tailbud stage. In Western blot analyses with monoclonal antibodies generated to 3 different peptides, MBP was found in the central and peripheral myelin and the thymus. Immunohistochemical examination of smeared thymocytes demonstrated MBP in the thymocyte cytoplasm. BG21 was found first in immature olfactory neurons in the placode and then in neuronal cell bodies and growing axons, suggesting its novel roles in development of the olfactory system. These results showed that the structure of Golli-MBP gene products is highly conserved among amphibians and mammals, although their expression patterns and thus physiological roles may partially differ between these 2 vertebrate groups. This is the first report that describes systematically the *golli-mbp* gene products in non-mammalian vertebrates.