

Sirilug Magerd 2006: Histochemical and Biochemical Characterization of Oviductal Secretory Glycoproteins and the Effect of Progesterone on Glycoprotein Modification in *Rana tigerina*. Master of Science (Cell and Molecular Biology), Major Field: Cell and Molecular biology, Department of General Science. Thesis Advisor: Associate Professor Amara Thongpan, Ph.D. 85 pages. ISBN 974-16-2482-4

In this study, we aimed to characterize the carbohydrate moieties in the oviductal secretion of *R. tigerina* during breeding, non-breeding and progesterone-priming periods. Distribution of each glycoprotein type in the epithelial ridges and mucosal glands as well as the chief contribution of these glycosylated products as part of the oviductal secretion was also investigated. To demonstrate which epithelial cells were involved in producing oviductal glycoproteins, lectin histochemistry was performed. Six types of lectins including BSL-I (recognizing  $\alpha$ -GalNAc and  $\alpha$ -Gal), ConA ( $\alpha$ -D-Man and  $\alpha$ -D-Glu), LCA ( $\alpha$ -D-Man and  $\alpha$ -D-Glu), RCA-I ( $\alpha$ -Gal and  $\beta$ -Gal), UEA-I (Fuc) and WGA (GlcNAc and sialic acid) were used. In the oviductal tissues collected during breeding period the staining of lectins RCA-I and WGA was highly specific to the non-ciliated cells (NCC) while the staining of lectins ConA and UEA-I was rather specific to the ciliated cells (CC). It was apparent that the staining of most lectins in the oviductal tissues generally decreased during non-breeding period. Staining intensity of all lectins was detected in a much greater extent in the epithelial folds or ridges than in the mucous glands, implicating that small glycoproteins found in the oviductal secretions were mainly derived from epithelial cells, not from the mucous glands. In addition, different molecular weight of the same glycoproteins could be seen in the different parts of oviduct. Progesterone administration during non-breeding period had both enhancing and inhibitory effects on the cellular production, as gauged by lectin histochemistry and the secretion of some glycoproteins to be the oviductal gelatinous components as determined by lectin blotting. In summary, lectin staining appears to be a useful tool for studying general oviductal glycoprotein profiles and factors that involved in cellular secretory activity.

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