Z303 Studies of Changes of Ca^{2+}-channels Distribution in the Activated Mouse Ova

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In muscle and neuronal cells, calcium channels have been classified by electrophysiological and pharmacological properties into (1) voltage-dependent Ca^{2+}-channel ① P/Q-type Ca^{2+}-channel ② N-type Ca^{2+}-channel ③ L-type Ca^{2+}-channel ④ T-type Ca^{2+}-channel ⑤ R-type Ca^{2+}-channel.

The immunocytochemical method was used to identify the existence of voltage-dependent Ca^{2+}-channels in parthenogenetically activated 2-cell embryos by ethanol and $SrCl_2$ treatment. These 2-cell embryos were obtained by exposure to 6% ethanol for 6min and to 10mM $SrCl_2$ for 2h. P/Q-type Ca^{2+} channels and L-type Ca^{2+}-channels have been identified. Whereas, three type of Ca^{2+}-channel P/Q-type, N-type, L-type have been identified in 2-cell embryos fertilized in vivo. In the present study, activation by ethanol was faster than those by $SrCl_2$. However, there was difference in DAB staining of the embryos between ethanol and $SrCl_2$ treatment(87.7% and 54.1%). Intensity of staining was also different between ethanol- and $SrCl_2$-treated group. However, it has not been known why there was some difference in DAB staining and staining intensity in the present study.

Z304 Developmental Expression Patterns of Mouse GM3 Synthase (mST3Gal V) during Embryogenesis

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Gangliosides are ubiquitous membrane components in mammalian cells and are suggested to play important roles in various functions, such as cell-cell interaction, adhesion, cell differentiation, growth control and signaling. Among the gangliosides, GM3 has the simplest carbohydrate structure and all ganglio-series gangliosides are synthesized from GM3. GM3 is synthesized by CMP-NeuAc:lactosylceramide 2,3-sialyltransferase (GM3 synthase; ST3Gal V). In order to understand the developmental expression of ST3Gal V, We have investigated the spatial and temporal expression of mST3Gal V mRNA during the mouse embryogenesis [embryonic (E) days; E9, E11, E13, E15] by *in situ* hybridization. Specific signal was detected in neural tube (E9), neuronal differentiation, brain and liver development (E11, 13, 15). These results will provide further information for understanding the cellular control of recognition events mediated by carbohydrate groups in developmental embryogenesis.