Inhibition was dose dependent between 10^{-7} and 10^{-4} M dex. The dex effect disappeared after 6d of continuous exposure. In addition, total amounts of intracellular ^{3}H-label, HMG, and mucin were reduced after 4 h of dex treatment. However, dex did not alter the stimulatory effect of methacholine on the secretory rate for total HMG and mucin. We suggest that dex may decrease glycoconjugate secretion by inhibiting glucosamine uptake and consequently the biosynthesis and release of glycoconjugates. Failure of dex to inhibit glycoconjugate secretion after 6d suggests that if similar effects occur *in vivo*, they may be transient. The mechanism by which inhibition is overcome requires further study. (Supported by NIH grants HL19171 and HL42384).

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S13.7

Changes in Glycolipid Composition in the Rat Placenta

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The placenta plays a central role in the maintenance of pregnancy. The stage specific function of the placenta is controlled by a complex mechanism involving changes in the composition of the cells and their differentiation in the placenta. In the present study, we investigated changes in the glycolipid content of rat placenta at different stages of pregnancy. Total lipid fractions extracted from the placenta between days 12 and 20 of pregnancy (day 0 = estrus) were subjected to analysis of glycolipids using DEAE-Sephadex, silica gel-HPLC, silica gel-TLC, TLC-immunostaining, negative ion FAB-MS and ^{1}H-NMR. Glycolipids identified in the rat placenta were: gangliosides; GM3 (NeuAcLacCer and NeuGcLacCer) and GD3 (NeuAcNeuAcLacCer, NeuAcNeuGcLacCer and NeuGcNeuAcLacCer), and neutral glycolipids; CMH (GlcCer), CDH (LacCer) and CTH (Gb3Cer). The content of neutral glycolipids was higher than that of gangliosides throughout pregnancy. Among the neutral glycolipids, CMH and CTH were dominant and CDH was low during mid-pregnancy. During late pregnancy, CMH and CTH decreased markedly and CDH slightly increased. Among gangliosides, GM3 was dominant on day 12 and 14 and then decreased gradually toward the end of pregnancy, whereas GD3 which was low on day 12 increased markedly on day 16 and maintained its level thereafter. These findings provide the evidence that the composition of these glycolipids changed markedly according to the stage of pregnancy and suggest that the glycolipids is involved in the mechanism of placental stage-specific function.

S13.8

Expression of Glycolipids and Placental Lactogen mRNA in Rat Choriocarcinoma Cell Line *(Rcho-1)*

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The placenta plays an essential role in the maintenance of pregnancy. In the rat, the placenta secretes placental lactogen-I (PL-I) at mid-pregnancy and placental lactogen-II (PL-II) at late pregnancy. These functions are stage-specific in pregnancy and related to the differentiation of trophoblasts. *Rcho-1* is a rat trophoblast cell line capable of expressing a differentiated phenotype. It has been demonstrated to express PL-I and PL-II *in vivo* and *in vitro* depending on experimental conditions. In the present study, we investigated the composition of glycolipids in the *Rcho-1* cell line. The cells, cultured in NCTC-135 medium supplemented with β-mercaptoethanol, sodium pyruvate, antibiotics and fetal bovine serum, were subjected to analysis of glycolipid composition and PL-I gene expression. By analyses using DEAE-Sephadex, silica gel-HPLC, silica gel-TLC, TLC-immunostaining, negative-ion FAB-MS and 1H-NMR, glycolipids identified in the cultures were: gangliosides GM3 (NeuAcLacCer), and neutral glycolipids CMH (GlcCer) and CTH (Gb3Cer). The content of neutral glycolipids was much higher than that of gangliosides in the preparation. mRNA analyses by RT-PCR and Northern blotting revealed that the *Rcho-1* cells expressed PL-I under these culture conditions. Thus, the expression of these glycolipids in culture is very similar to that in the placenta at mid-pregnancy, when CMH, CTH and GM3 are dominant (This meeting, Itonori *et al.*) These results indicate that the *Rcho-1* cell line is useful for studying the relationships between glycolipids and trophoblast differentiation. Further characterization of the *Rcho-1* cell line is now in progress.

S13.9

A Proline-Rich Polypeptide (PRP) and its Active Nonapeptide (NP) Fragment Affect the Expression of A Receptor for Peanut Agglutinin (PNA) on Murine Thymocytes

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A proline-rich polypeptide (PRP) with immunoregulatory properties was isolated in our laboratory from ovine colostrum. It induces maturation of murine thymocytes and modulation of their surface markers and functions. The maturation of thymocytes is accompanied by a decrease in PNA binding ability by the cells. The polypeptide is able to reduce, in a reversible way, binding of peanut agglutinin (PNA) to murine PNA^{+} thymocytes and to increase the binding to the PNA-thymocytes. An active nonapeptide fragment (NP): Val-Glu-Ser-Tyr-Val-Pro-Leu-Phe-Pro was isolated from products of digestion of PRP. The nonapeptide showed biological activity of PRP. In this report results of studies on comparison of effects of PRP and NP (obtained by synthesis) on expression of receptors for PNA on murine thymocytes are presented. PNA^{+} thymocytes treated with PRP/NP bound less PNA than the untreated cells. Analysis of the binding parameters showed that the decrease in binding was caused by a decrease in the number of binding sites per cell. Values of the apparent association constants were similar. The change in the number of binding sites might be due to an activation of thymocyte membrane sialotransferases. The