

## Oral Presentations

[OA-1] [ 04/19/2002 (Fri) 14:00 - 14:10 / Hall A ]

Characterization of a zebrafish (*Danio rerio*) sphingosine 1-phosphate receptor expressed in the embryonic brain.

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Sphingosine 1-phosphate (S1P), a metabolite of sphingosine, is one of the biologically active lysophospholipids that evokes a variety of cellular responses, including cell proliferation, anti-apoptosis, and neurite retraction. The actions of S1P are mediated via its specific interaction with cell-surface receptors, at least five G protein-coupled Edg receptors. We cloned zebrafish *edg1* and expressed it in RH7777 cells. In these cultures, S1P inhibited forskolin-driven rises in cAMP and this response was eliminated by pretreatment of the cultures with pertussis toxin. In RH7777 membranes, S1P stimulated GTP $\gamma$ [<sup>35</sup>S] binding 2-3 fold. Zebrafish *edg1* is expressed in embryonic brain, particularly ventral diencephalon, optic stalks, and anterior hindbrain. Our findings suggest that nonmammalian vertebrates use S1P to signal during embryogenesis and that the properties of Edg1 receptor have been conserved for 400 million years.

[OA-2] [ 04/19/2002 (Fri) 14:10 - 14:20 / Hall A ]

Effect of Recombinant Human FSH on Ovulation, Pregnancy and In Vitro Fertilization in Androgen-Sterilized Mice

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The present study was performed to examine the effect of a new rhFSH, PG-0801, on oocyte quality, ovulation and in vitro fertilization (IVF) in androgen-sterilized mice. Experimental sterility was produced by a single subcutaneous injection of testosterone propionate (TP, 1 mg/head) into 5 day old female mice. Ovulation was induced in 10 to 13-week old TP-injected mice by a subcutaneous injection of rhFSH (1, 5 or 10 IU/head) followed forty-eight hours later by a second injection of rhFSH (1, 5 or 10 IU/head). For comparison, subcutaneous PMSG (5 IU/head) was used for folliculogenesis and hCG (5 IU/head) for ovulation, and these were administered using the same protocol. Seventeen to twenty hours after the second injection, eggs were harvested from the oviducts and counted. To determine the functional activity of the eggs, IVF was performed by adding sperms ( $2 \times 10^5$ /ml to  $2 \times 10^6$ /ml) and the fertilization rate was determined. In addition, the pregnancy rate and fetal development were examined on days 15-17 of gestation. The number of oocytes recovered from the rhFSH/rhFSH group increased dose-dependently and was slightly higher than that of the PMSG/hCG group. The pregnancy rates for the group receiving 1, 5, and 10 IU of rhFSH/rhFSH were 50%, 66.7%, and 75%, respectively, which were significantly higher than that of the control (untreated) group (0%). The numbers of viable fetuses in the 1, 5, and 10 IU/head of the rhFSH/rhFSH group ( $8.0 \pm 1.50$ ,  $8.9 \pm 1.02$ , and  $8.9 \pm 1.12$  fetuses/dam, respectively) were comparable to that of the 5 IU/head PMSG/hCG group ( $9.4 \pm 0.94$ ). Mice receiving rhFSH/rhFSH and PMSG/hCG showed similar fertilization rates (around 65%) via the IVF procedure. These results demonstrate that a new rhFSH, PG-0801, may be useful for the induction of ovulation in functionally infertile patients and for the superovulation in ovulatory patients participating in an assisted reproductive technology (ART) programs.

[OA-3] [ 04/19/2002 (Fri) 14:20 - 14:30 / Hall A ]