Comparative Performance of Dextran Serum Supplement (DSS) and Serum Substitute Supplement (SSS™)

The performance of DSS has been compared to that of SSS as the protein supplement in culture media for embryo development and cryopreservation applications. The results from animal model testing (mouse embryos) and clinical evaluations are summarized below, which show comparable performance of DSS as a protein supplement.

Figure 1. Mouse Embryo Development (from 1-cell)

Comparable rates of cleavage and blastocyst development were obtained for one-cell mouse embryos cultured in medium (HTF) supplemented with DSS versus SSS.

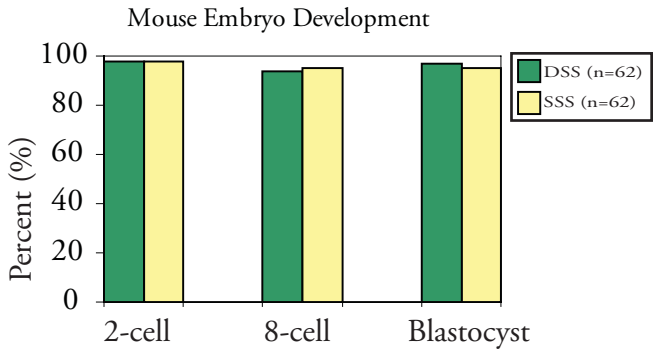

Figure 2. Human Clinical Evaluation

A comparison of DSS versus SSS as the protein supplement in culture medium was conducted in a 6 patient split case study. Sibling oocytes were equally divided into DSS (Group 1, n=52) or SSS (Group 2, n=49) supplemented medium and endpoint parameters were monitored. Fertilization rates (ICSI and IVF combined) were comparable for DSS (54%) and SSS (53%). The percent of fertilized embryos that were frozen were also comparable for DSS (39%) and SSS (31%). Embryo transfers (up to n=2 embryos per patient) occurred for 5/6 patients from Group 1 (83%, DSS) embryos, and 2/6 patients from Group 2 (33%, SSS) embryos, where one patient received one embryo from each culture group. Two pregnancies were obtained in which one patient received both embryos from Group 1 (DSS) for a pregnancy rate per transfer of at least 20%, and the other patient had embryos from both groups, so a pregnancy rate for Group 2 (SSS) could not be determined.

Clinical Evaluation (Human)		
Parameter	**DSS**	**SSS**
Number of Oocytes	52	49
Fertilized (ICSI & IVF)	28 (54%)	26 (53%)
Frozen	11 (39%)	8 (31%)
Number of Embryos Transferred	8	3
Number of ET	5	2
PR	≥20%	*
* SSS data insufficient to draw conclusion		

Figure 3. Mouse Oocyte Vitrification

Mouse oocytes were vitrified in Irvine Scientific's Vitrification Solutions containing DSS or SSS as the protein component. Oocyte viability was assessed at 18 hours post thaw and comparable survival rates were obtained with DSS versus SSS.

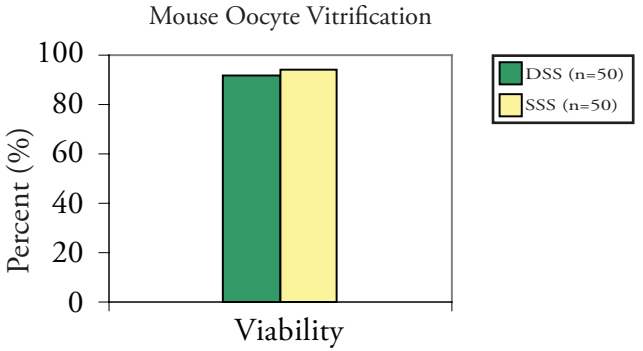

Figure 4. Mouse Embryo Vitrification

Mouse embryos (2-cell) were vitrified in Irvine Scientific's Vitrification Solutions containing DSS or SSS as the protein component. Comparable ongoing rates of early cleavage (> 8 cell at 24 hours) and blastocyst development (at 72 hours) were obtained post thaw for DSS versus SSS.

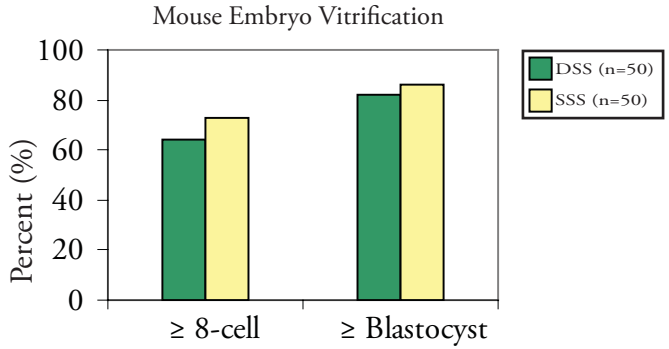

Figure 5. Mouse Blastocyst Vitrification

Mouse blastocysts were vitrified in Irvine Scientific's Vitrification Solutions containing DSS or SSS as the protein component. Blastocyst viability was assessed at 24 hours post thaw and comparable survival rates were obtained for DSS versus SSS.