The objective of this preliminary study was to evaluate the effect of various concentrations of Solcoseryl® (a deproteinized hemodialysate product from calves' blood) on the viability of day-7 bovine embryos in culture. Seventeen European and Brahman crossbred females of varying ages were treated with 5 mg of follicle stimulating hormone (FSH-P: Burns-Biotec) twice daily for up to 5 days and 35 to 60 mg of PGF₂α (Lutalyse®: Upjohn Co.) to induce a superovulatory response. Donors were bred 3 times (at 12-hour intervals) with frozen beef semen. At day 7 post-estrus (estrus=day 0), each female was non-surgically collected using a two-way Foley catheter attached to a 60 ml plastic syringe. In two experiments, embryos were selected by quality grade from 17 collections and randomly allotted to one of four treatment groups (Trt). Embryos in Trt (A) were cultured for 72 hours in Ham's F-10 culture medium, with 10% fetal calf serum, and supplemented with 100 units of penicillin, 100 μg of streptomycin and .25 μg of amphotericin-B per ml (HF-10). Embryos assigned to Trt (B), (C) and (D) were handled similarly and cultured in the same HF-10 medium supplemented at either .01%, .05% or .10% (v/v) with Solcoseryl® (Solco Basle Ltd., Birsfelden-Basel Switzerland), respectively. Embryos were cultured in 24-well culture plates (1 ml of HF-10/well) at 37°C in a humidified atmosphere of 5% CO₂ and air. In the first experiment with fresh embryos (n=19), 42.7% of the Solcoseryl-treated embryos were classified as viable at 72 hours into culture compared with 0% viable in HF-10 without Solcoseryl®. Results from this preliminary dose study with Solcoseryl® suggested that this agent should be evaluated for its potential in enhancing the viability of post-thawed bovine embryos. In the second experiment, 46 good quality embryos (blastocysts) were equilibrated in 1.4 M glycerol (in PBS with 4 mg/ml BSA fraction-V) in stepwise dilutions (.47, .94 and 1.4 M glycerol) and cooled (in .25 ml French straws) in a programmable freezing unit at (a) 20°C to -5°C at 1°C/minute, (b) held at -5°C for 10 minutes while seeding, (c) -5°C to -30°C at .3°C/minute and (d) direct transfer from -30°C to LN₂. After storage for >10 days and rapid warming (=1 minute), embryos were rehydrated in stepwise dilutions of glycerol in PBS (with BSA) and placed into Trt (A), (B), (C) or (D). Embryos were evaluated (75X) at 12-hour intervals for 72 hours. At 0 hour of culture 90%, 85%, 92% and 100% of the embryos were classified as viable for Trt (A), (B), (C) and (D), respectively. Correspondingly, 36%, 46%, 50% and 60% were viable at 24 hours of culture and 18%, 8%, 33% and 50% were viable at 72 hours into culture for Trt (A), (B), (C) and (D), respectively. In summary, Solcoseryl® added to HF-10 at the three concentrations evaluated was not detrimental to the development of day-7 bovine embryos in this culture system. In fact, .05% and .10% Solcoseryl® tended to enhance the viability of day-7 frozen bovine blastocysts when maintained in culture up to 72 hours.