aimed to investigate the effects of different concentrations of PC (0, 10, 20, 40, and 60 μg/ml) in soybean lecithin-based extenders on the semen quality parameters of post-thawed goat semen. Fifteen ejaculates were collected from six healthy, mature Chongming White goats (3–5 years of age). Each ejaculate was divided into five equal aliquots, and then each pellet was diluted with one of the five soybean lecithin-based extenders containing 0, 10, 20, 40, or 60 μg/ml PC (PC0, PC10, PC20, PC40, and PC60 group). The cooled diluted semen was loaded into 0.5 mL polyvinyl French straws and cryopreserved in liquid nitrogen. Frozen semen samples were thawed at 37 °C and assessed for sperm motility, viability, plasma acrosome integrity, membrane integrity, and mitochondria integrity, and the spermatozoa were assessed for reactive oxygen species (ROS), superoxide dismutase (SOD), and malondialdehyde (MDA). The results showed that the sperm viability, motility, acrosome integrity, mitochondrial activity and plasma membrane integrity in the PC40 group (58.49%, 53.45%, 55.37%, 55.16% and 50.46%, respectively) were significantly higher than the other groups. The ROS and MDA concentrations in the PC40 group were significantly lower than the other groups, and the SOD and GSH-Px levels in the PC40 group were the highest than controls. When the concentration of PC increased to 60 μg/ml, the quality indexes of thawed semen were significantly decreased, and the toxicity of PC was found in the goat semen freezing. In conclusion, the extenders supplemented with 40 μg/ml PC in the goat semen freezing could reduce sperm oxidative damage, decrease apoptotic level and improve sperm quality.
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Conflict of Interest: None to disclose

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CONSERVING YACON (SMALLANTHUS SONCHIFOLIUS) THROUGH CRYOPRESERVATION USING THE PVS2 DROPLET VITRIFICATION METHOD

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The perennial root crop yacon [Smallanthus sonchifolius (Poepp. and Endl.) Robinson], native to the Andean mountain region, is a tuberous crop mainly grown for its edible underground organs rich in inulin-type fructooligosaccharides of low caloric value. Due to habitat destruction, land degradation, and environmental changes, there has been a rapid erosion of its genetic diversity. Such conditions, along with the risk of pest and diseases, creates the need to use advanced biotechnological approaches as an alternative to preserving the species' genetic material and its biodiversity. This study aims at using the Plant Vitrification Solution No.2 (PVS2) droplet vitrification method to develop an efficient cryopreservation protocol for the long-term preservation of yacon. To carry out the experiment, apical shoot tips (2-3 mm long) were excised from 3-4 weeks old in vitro cultures of four yacon cultivars (one allooctoploid (2n=8x=58) from Ecuador, two allooctoploids from Bolivia, and two dodecaploids (2n=12x=87) from Peru). After pre-treatment (0.3M SUC+12hrs dark), these were placed in loading solution (20 min at 22°C). Three different time intervals for PVS2 dehydration at 0°C were tested (15, 30, and 60 min). Thereafter, shoot tips were exposed to ultra-rapid cooling in liquid nitrogen (1 hr) and then placed in an unloading solution for thawing (22 °C for 15 min). Next, post-cryo cultures were placed on recovery (MS or MS+1 mg/l BA). Post-thaw survival, regrowth, and quality of shoot tips were evaluated. The results showed that PVS2 is an efficient method for the cryopreservation of all tested cultivars of yacon with MS without 0.1 mg/l BA as regrowth media, and PVS2 60 min treatment duration is the most effective in providing the highest survival (87-90%) and regrowth (62-75%) rates, respectively, with no morphological abnormalities, post cryopreservation. The BOL23 genotype showed the highest shoot tip regrowth percentage (75%) post cryopreservation, followed by ECU41 (73%), PER12 (73%), PER14 (70%), and BOL22 (62%).
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A STUDY OF ANTIULCER ACTIVITY OF CRYOCONSERVED PLACENTA EXTRACT ON THE MODEL OF ALCOHOL / PREDISOLONE-INDUCED STOMACH LESIONS

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New approaches to the treatment of peptic ulcer disease is an urgent problem in modern medicine. One of the potential antiulcer agents is cryopreserved placenta extract. The study was conducted on 28 male rats weighing 200–220 grams. After 24 hours of fasting, rats were administered intragastrically with prednisolone (20 mg/kg) dissolved in 80.0% ethyl alcohol (0.6 ml/100 grams of animal body weight). Cryopreserved placenta extract was administered intramuscularly at a dose of 0.16 ml/kg body weight in the prophylactic mode – once a day for 5 days before the introduction of alcohol-prednisolone mixture. 24 hours after administration of the alcohol-prednisolone mixture, rats were removed from the experiment and macroscopically assessed the condition of the gastric mucosa according to the following criteria: bloating, edema, redness, hemorrhage and folding disorders. For each group, the percentage of experimental animals was calculated according to the specified characteristics and the average value of their expression, which was evaluated on a scale: 0–3 points. The study showed that in 100.0% of control rats (model pathology without treatment) marked (3 [3; 3] points) hyperemia of the gastric mucosa ($p<0,05$). In addition, the presence of hemorrhage, edema and folding disorders caused by the introduction of alcohol-prednisolone mixture was noted. Prophylactic five-day administration of cryopreserved placenta extract before the introduction of ulcerogenic mixture led to a statistically significant ($p<0.05$) decrease in the severity of damage to the gastric mucosa in rats. Thus, hyperemia, hemorrhage and mild edema of the gastric mucosa were observed in only 28.6% of rats. The obtained data indicate the ability of cryopreserved placenta extract in the prophylactic mode of administration to increase the endurance of the gastric mucosa to the action of alcohol-prednisolone mixture.
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CRYSTALLIZATION IN SERUM CONTAINING AND SERUM-FREE MEDIA BASED ON DEXTRAN

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Using serum-containing media for cryopreservation of testicular cells can cause problems connected with transmission of infections or composition