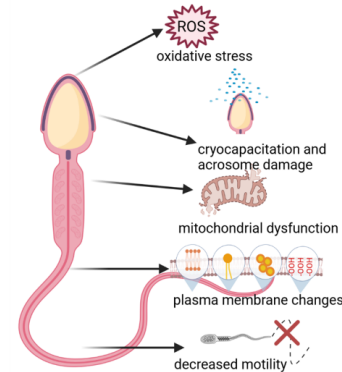


Potencial use of peroxiredoxins to improve the quality of cryopreserved bull semen

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PEROXIREDOXINS (PRDXs)

antioxidant enzymes that function in various ways to reduce oxidative stress

unique feature of acting both as antioxidants and redox signal transmitters to maintenance optimal ROS concentration

Fig. 1. Sperm damage caused by cryopreservation

HYPOTHESIS

Introducing PRDXs into sperm prior to the cryopreservation process will improve the quality of cryopreserved semen by reducing oxidative stress and capacitation-like changes

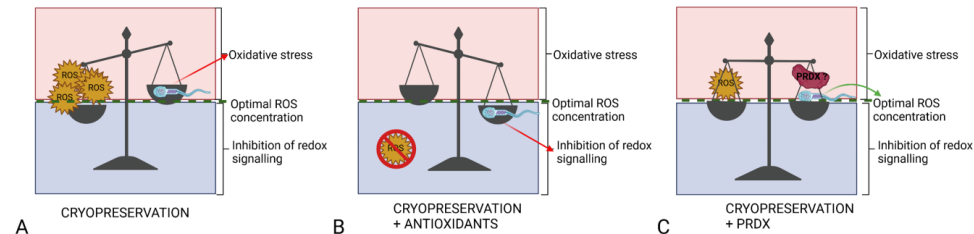


Fig. 2. The effect of semen cryopreservation (A); the effect of semen cryopreservation with the addition of antioxidants to the diluent (B); the potential effect of semen cryopreservation with the addition of PRDXs (C)

OBJECTIVE

The use of extracellular vesicles (Evs) to introduce PRDXs into bovine sperm

- the efficacy of PRDX loaded EVs in reducing oxidative stress during sperm cryopreservation and recovery
- the impact of PRDX-loaded EVs on sperm viability and motility after cryopreservation
- the impact of PRDX-loaded EVs on ROS levels and lipid peroxidation