

THE EFFECT OF HYDROGEN PEROXIDE ON DONKEY SPERM KINETIC PARAMETERS

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BACKGROUND

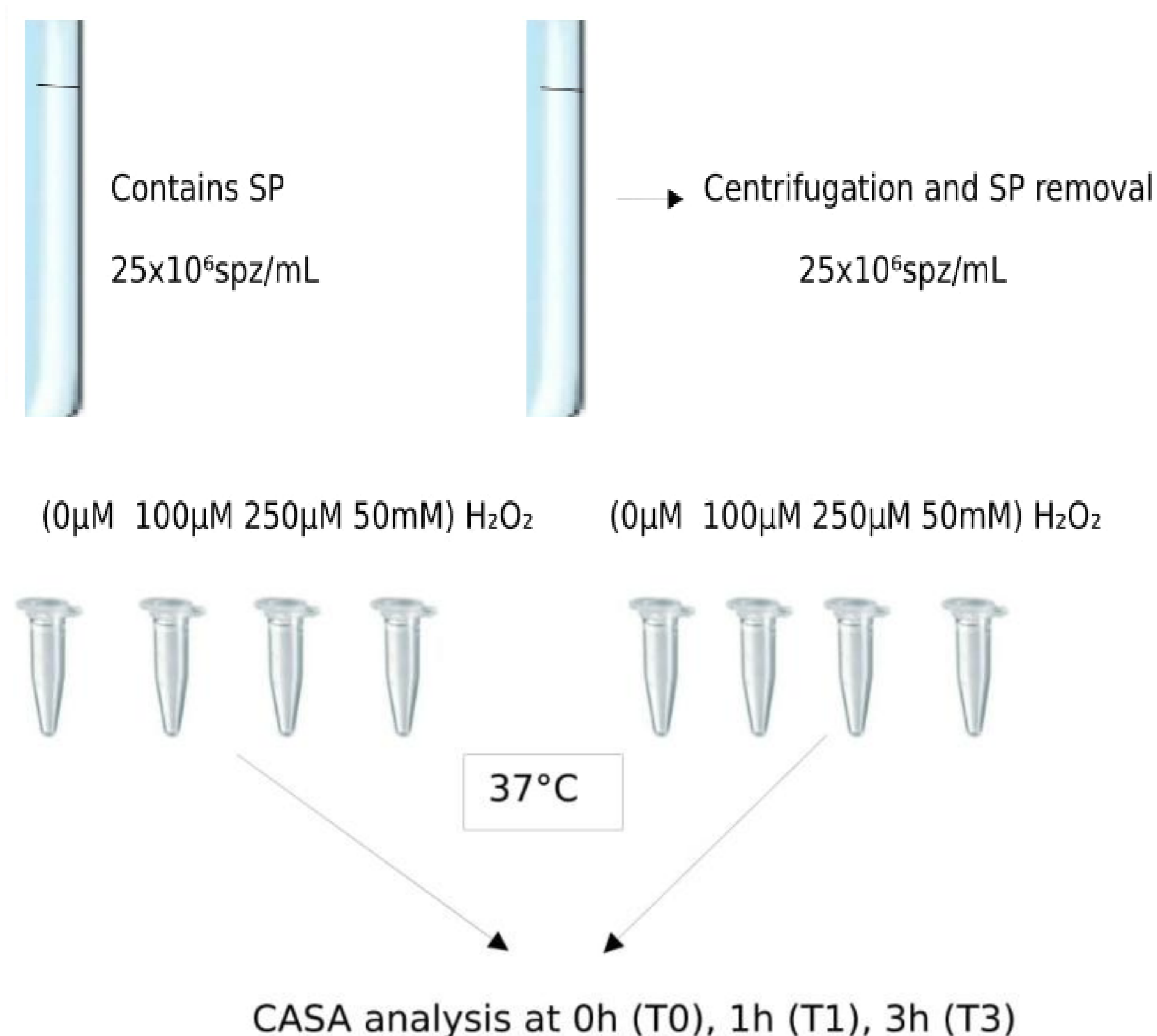
Seminal plasma (SP) is known to modulate sperm function in different mammal species and contains antioxidant enzymes to prevent oxidative stress damage caused by reactive oxygen species (ROS). However, the potential role of SP while modulating the oxidative damage needs to be clarified.

OBJECTIVES

The aim of this study is to evaluate the effect of the addition of exogenous H₂O₂ on donkey spermatozoa kinetic parameters and whether the presence of seminal plasma is able to modulate the sperm response to the oxidative stress produced.

MATERIALS AND METHODS

Nine ejaculates had been collected from three donkeys with proven fertility using a Hanoverian artificial vagina. After collection, semen was diluted (-1:5 (v:v)-) in a non-fat dry skim milk extender.



RESULTS

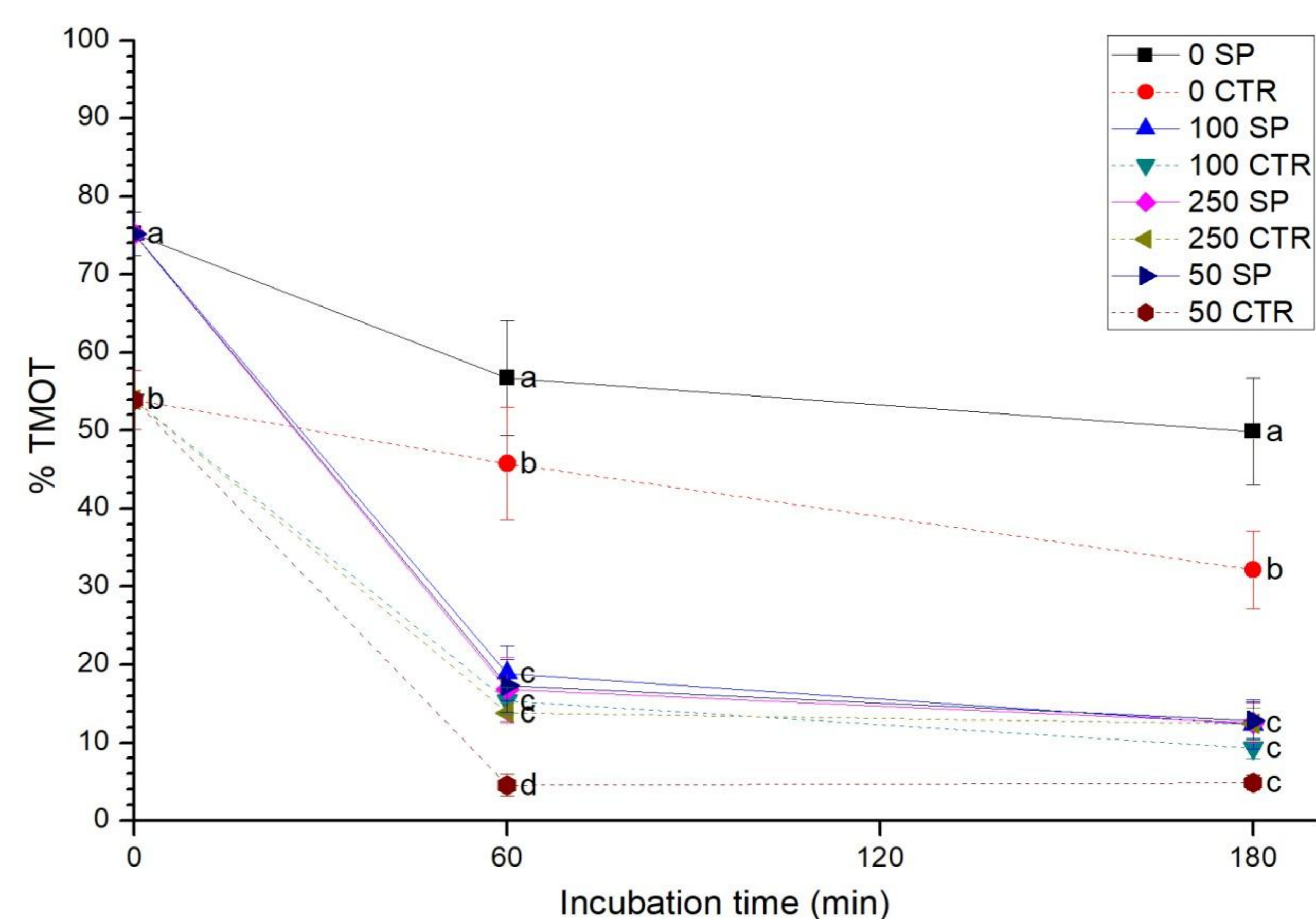


Figure 1. Total sperm motility (TMOT) throughout the incubation time (mean ± SEM). Different letters (a,b) mean significant ($P < 0.05$) differences between treatments within a given time.

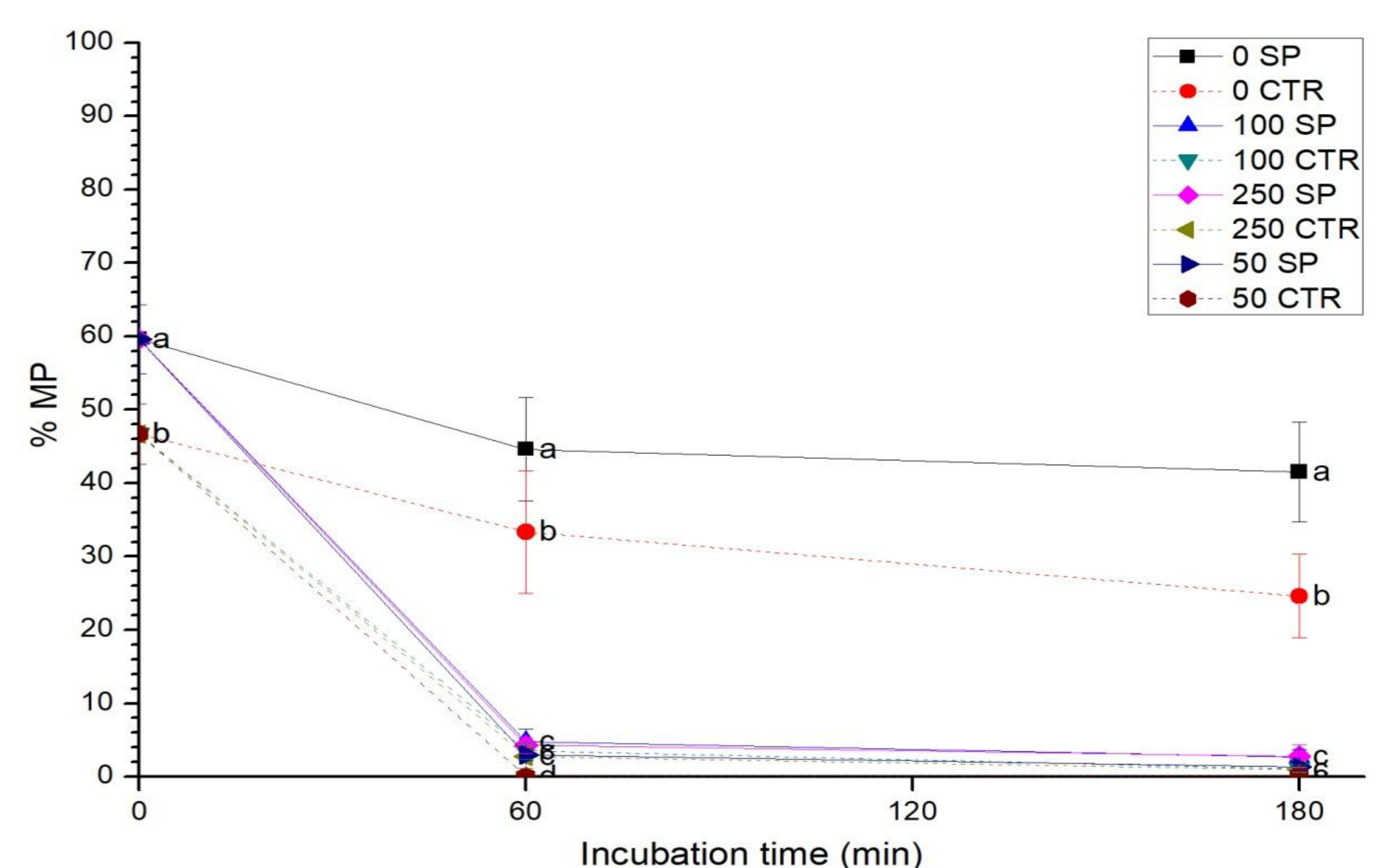


Figure 2. Progressive sperm motility (MP) throughout the incubation time (mean ± SEM). Different letters (a, b) mean significant ($P < 0.05$) differences between treatments within a given time.

CONCLUSIONS

- ✓ Kinetic parameters are better preserved when SP is present
- ✓ Exposure of donkey spermatozoa to H₂O₂ reduces their sperm motility
- ✓ SP is only able to avoid partially this detrimental effect
- ✓ As seminal plasma contains antioxidant components that can scavenge ROS generation, we were expecting after the induction of oxidative stress, a more apparent difference between the aliquots with seminal plasma and without it.