OXIDATIVE STRESS PATTERNS IN MARES WITH ENDOMETRITIS

Giulia Santana Figueiredo[1]; Victoria Kanadani Campos Poltronieri[1]; Ana Karina Argumeno Jiménez; Angélica Perdigão Martino[1]; Ytalo Galinari Henriques Schuartz; Bruna Waddington de Freitas[1]

[1]Universidade Federal de Viçosa, Viçosa, MG, Brasil

INTRODUCTION

Oxidative stress can be described as an imbalance between pro-oxidants and antioxidants in the body. In cattle, the relationship of such imbalance in cases of endometritis has already been described, however few studies on the subject in the equine species are available. Since it is known that the increase in free radicals directly influences reproductive performance, this study aimed to verify the effect of endometritis on parameters of oxidative status in mares, evaluated in blood serum samples (A1), low-volume uterine flush (A2) and uterine cytology (A3).

METHODOLOGY

For this purpose, 12 mares of different breeds with ages ranging between 5 and 10 years were used. The three types of samples were collected in a single moment when in presence of uterine edema, verified by ultrasonography, and cervical relaxation. Two groups were divided, being classified as healthy (G1, n=6) or affected by endometritis (G2, n=6).

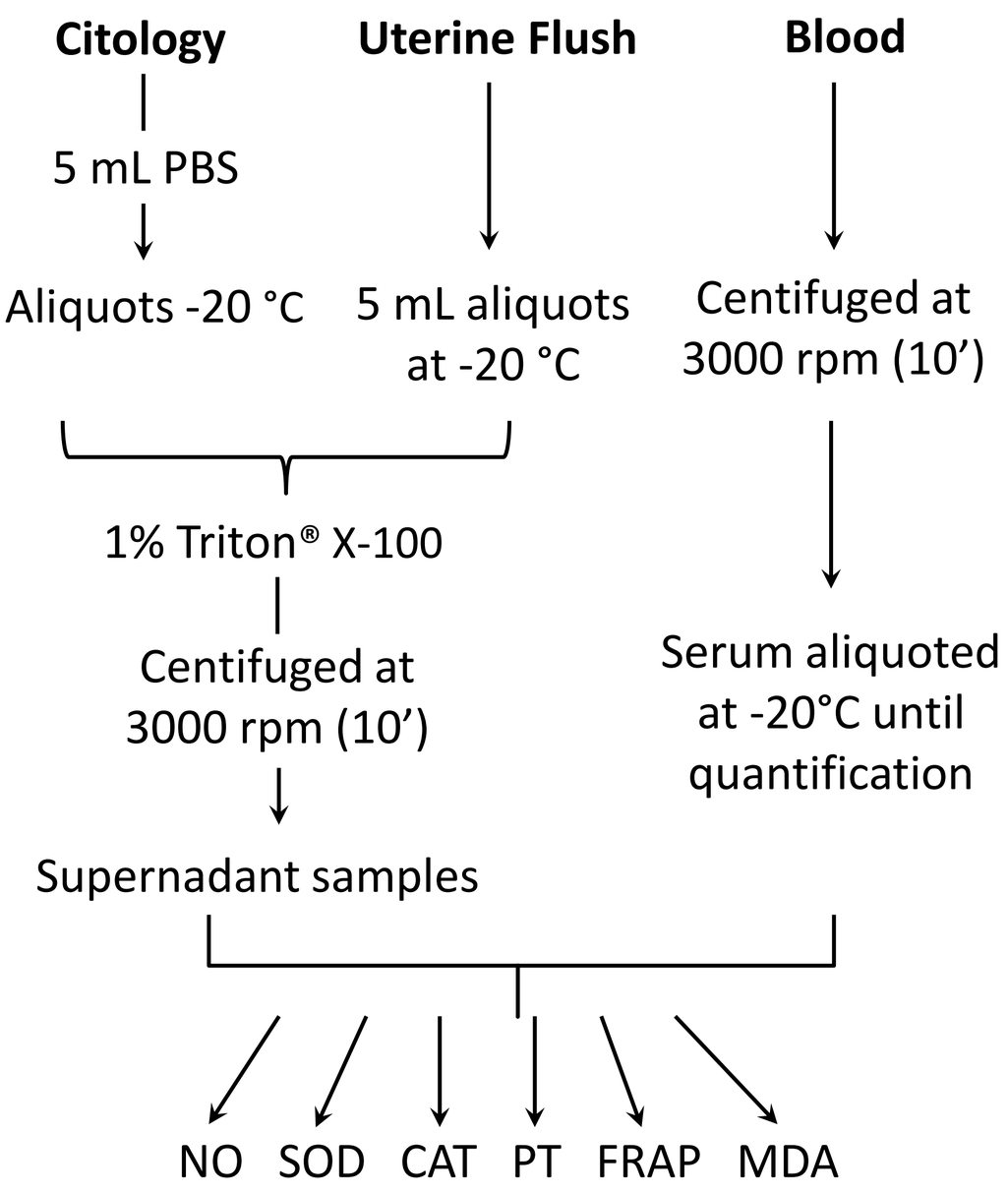

Figure 1. Schematic view of methodology. Nitric oxide (NO); Superoxide dismutase (SOD); Catalase (CAT); Total protein (PT); Total antioxidant capacity (FRAP); Malondialdehyde (MDA).

RESULTS AND DISCUSSION

Higher serum catalase (CAT) means were observed in G1 (133.4 U/mg protein). Lower serum averages of this enzyme in G2 (90.2 U/mg protein). Statistical differences were not observed in the oxidative status analyzes in A2 and A3.

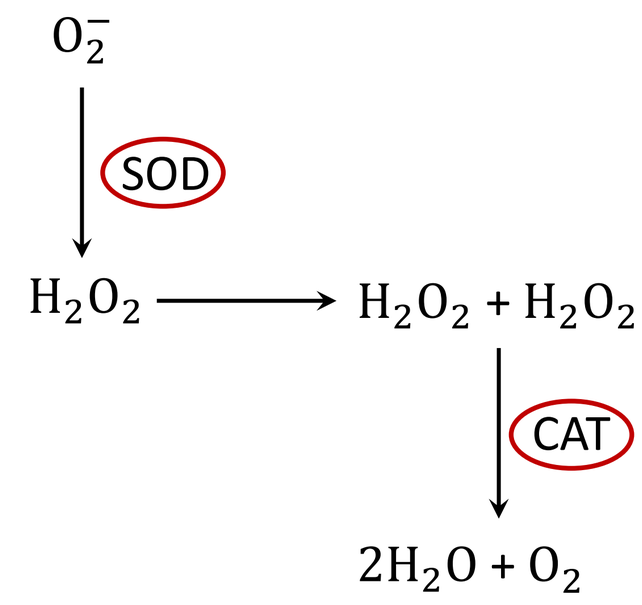

Figure 2. Catalase (CAT) and Superoxide dismutase (SOD) enzymatic defense mechanism. CAT is an enzymatic antioxidant essential for homeostatic balance. This enzyme is responsible for catalyzing and decomposing H_2O_2 into water and oxygen, which protects cells from oxidative damage.

CONCLUSION

Mares affected by endometritis have reduced antioxidant response capacity, and such difference can be detected by means of blood serum analysis.

ACKNOWLEDGMENTS

CAPES

UFV Universidade Federal de Viçosa

LABRAN Laboratório de Reprodução Animal