

Abstracts - 35th Annual Meeting of the Brazilian Embryo Technology Society (SBTE)**Male reproductive physiology and sperm technology****Effect of quercetin on the expression of genes related to oxidative stress in testes of rats fed a high-fat diet**

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Resumo

The aim of this study was to verify the effect of quercetin supplementation on the expression of genes related to oxidative stress in testes of Wistar rats fed a high-fat diet. For that, the experiment used 48 Wistar rats in 6 experimental groups: CT (rats fed commercial diet and supplemented with 0 mg / day of quercetin gummy); Q10 (rats fed commercial diet and supplemented with 10 mg / day of quercetin gummy); Q20 (rats fed commercial diet and supplemented with 20 mg / day of quercetin gummy); HF (rats fed with high-fat diet and supplemented with 0 mg / day of quercetin gummy); HFQ10 (rats fed with high-fat diet and supplemented with 10 mg / day of quercetin gummy); and HFQ20 (rats fed with high-fat diet and supplemented with 20 mg / day of quercetin gummy). At the end of the experiment, the rats were anesthetized and killed by exsanguination, the testes were collected and stored in the freezer at -80 ° C. The stored testes were analyzed by RT-qPCR for quantitative expression of genes related to oxidative stress: glutathione synthetase (Gss) and superoxide dismutase 2 (Sod2). The results passed the Shapiro-Wilk normality test and the statistical analysis used was ANOVA. No differences were found among the groups for gene expression of Gss or Sod2 ($P > 0.05$). The means and the standard error of gene expression of Gss were: CT = 1.02 ± 0.09 ; Q10 = 1.15 ± 0.07 ; Q20 = 1.18 ± 0.13 ; HF = 1.18 ± 0.12 ; HFQ10 = 1.16 ± 0.17 ; and HFQ20 = 1.07 ± 0.10 . Quantitative gene expression of Sod2 were: CT = 1.01 ± 0.06 ; Q10 = 1.24 ± 0.12 ; Q20 = 1.09 ± 0.13 ; HF = 1.37 ± 0.12 ; HFQ10 = 1.04 ± 0.09 ; and HFQ20 = 0.98 ± 0.07 . In another study, it was observed that high-fat diets increased a malindialdehyde (marker of oxidative stress), enzymatic activity of glutathione peroxidase and caspase 3 immunostaining in testes (Migliaccio et al., Cells, 8:443, 2019). Based on that, we expect that the high-fat diet would increase the expression of the studied oxidative stress genes, but this did not happen, which is probably why quercetin had no effect on the expression of these genes. It is concluded that the high-fat diet or quercetin supplementation do not alter the gene expression of Gss or Sod2 in testes of Wistar rats. The effects of a high-fat diet on oxidative stress and testicular damage should be better elucidated.

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