

Summary of the DVM thesis No: 27983 , Faculty of Veterinary Medicine, Urmia University. The academic year: 2024-2025

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Title of thesis: Effects of intraperitoneal administration of Kisspeptin-10 on ischemia-reperfusion injury in rat testicular torsion and detorsion model

Summary: Testicular ischemia-reperfusion (I/R) injury during testicular torsion is strongly influenced by oxidative stress caused by excessive accumulation of uncaptured reactive oxygen species (ROS). This study examined the effects of kisspeptin-10 on I/R injury in testicular torsion/detorsion (T/D) of male rats. Twenty male rats were divided into four groups: the control group and three treatment groups (720° T/D, 720° T/D+ 0.5 µg/kg kisspeptin-10, 720° T/D+ 1 µg/kg kisspeptin-10). After inducing 720° clockwise testicular torsion for 2 hours, various factors such as sperm parameters, number, total motility, viability, DNA damage and hypoosmotic test were evaluated. The results showed that 720° T/D can increase sperm DNA damage. In addition, it also had negative effects on overall motility and other properties such as viability and plasma membrane functionality. The results also showed that administration of kisspeptin-10 to T/D rats can reduce DNA damage. These effects could also increase overall motility, viability and plasma membrane functionality compared to the T/D group. Based on our results, kisspeptin-10 provides significant protection against acute T/D injury to the testis when administered after spermatic cord torsion in mice.

Keywords: Ischemia-reperfusion, Kisspeptin-10, Testis, Rat