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Title of thesis:

Effects of *Hypericum perforatum* on ketamine-induced embryotoxicity and pathospermia in mature male rats

Psychoactive drugs abuse has become a public health concern. Accordingly, this study was implemented to unravel the effect of *Hypericum perforatum* (HP) on ketamine (KET)-induced embryotoxicity and pathospermia in mature male rats. *Twenty mature male rats were randomly allotted to four equal groups including non-treated control group, HP control group receiving HP (Kneipp® Johanniskraut Dragees H; 100 mg/kg/day) orally (PO) for 14 days, KET group receiving KET (20 mg/kg/day; intra-peritoneally [IP]) for 14 days, and KET/HP group receiving KET (20 mg/kg/day; IP) plus HP (100 mg/kg/day; PO) for 14 days. Afterwards, epididymal sperms in vitro fertilizing potential, genetic integrity,* and *morphological abnormalities, in vitro embryo development, and testicular tissue oxidative stress index (TTOSI) were determined at the end of experimental period. The HP treatment led to the marked improvement in the epididymal sperms in vitro fertilizing potential, DNA integrity,* and *morphological disorders, and blastulation rate, as well as pronounced reduction in TTOSI compared to the KET group. Protective activity of HP against KET-elicited reproductive impairments in mature male rats can be associated to the testicular tissue anti-oxidant defense system reinforcement and oxidative damages alleviation regarding its potent anti-oxidative compounds function.*

Keywords: *Hypericum perforatum*; *In vitro* fertilization; Ketamine; Rat; Sperm