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Study on reproductive toxicity test of BaoFuKang suppository in SD rats with toxicokinetic profile

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The objective of this study is to determine the reproductive toxicity test of BaoFuKang suppository in SD rats as well as its toxicokinetic profile using LC-MS/MS. Assessment of reproductive toxicity and toxicokinetic profile of BaoFuKang suppository to SD rats and its offspring was used to investigate if it presents with the risk of accumulation and whether it could across the blood-testis barrier, placental barrier and blood-milk barrier. In our study, SD rats were treated with vehicle group, positive control group, gastric lavage group, low, middle, and high dose group of BaoFuKang suppository once daily by vaginal suppository to explore reproductive toxicity test, and the satellite groups were used in the toxicokinetic profile. Blood samples were collected after the first dose and the last dose to analyze the plasma concentration. In addition, seminal plasma, testicular tissue, and sperm quality should be determined in the study of fertility and early embryo developmental toxicity test in order to investigate whether curdione could cross the blood-testis barrier or not. Maternal plasma, amniotic fluid, placental plasma, placental tissue, fetal tissue and so on should be detected in the study of embryo-fetus developmental toxicity test in order to investigate whether it could cross placental barrier. Maternal plasma, milk, and offspring tissue should be tested in the study of perinatal toxicity test in order to investigate whether it could cross blood-milk barrier. Based on the bioanalytical results, curdione could be accumulated in SD rats and fetus tissue to some extent when the dose reached toxic level, probably resulting in unexpected outcomes to both parent body and the fetus because of transference through the placental barrier, placental barrier and blood-milk barrier system.

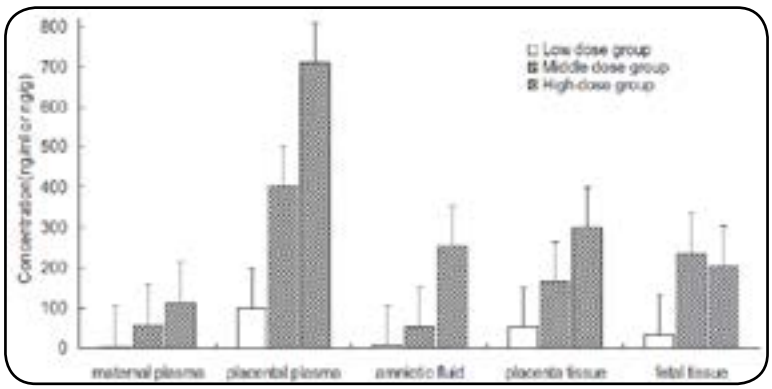

Figure 1: Concentration of curdione in samples from pregnant SD rats, (Mean±SD).

Recent Publications:

1. Xiang Meng et al. (2015) The toxicokinetic profile of curdione in pregnant SD rats and its transference in a placental barrier system detected by LC-MS/MS. Regulatory Toxicology and Pharmacology. 71(2):158-163.
2. Xiang Meng et al. (2015) Development and application of an analytical method of curdione quantification in pregnant SD rats by LC-MS/MS. Biomedical Chromatography. 29(10)1499-1505.
3. Shengsheng Zhu et al. (2013) Development and validation of a stability-indicating high performance liquid chromatographic (HPLC) method for the determination of related substances of micafungin sodium in drug substances. International Journal of Molecular Sciences 14:21202-21214.

4. Hong Sun, Ting Zhang, Xin Su, Xiang Meng & Zuyue Sun (2012) A Newly-developed RP-HPLC Method for the Analysis of Epristeride in Rat Serum and its Validation. Latin American Journal of Pharmacy 31 (8): 1132-1137.
5. Xiang Meng et al. (2012) Study on the toxicokinetics of scutellarin in Beagle. Thai Journal of Toxicology 27(2):75.

Biography

Xiang Meng has his expertise in pharmacokinetics/toxicokinetics studies and non-clinical evaluations on safety of drugs.

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