

## 论文

### 高效氯氰菊酯亚慢性暴露对雌性幼鼠性腺作用

何庆峰, 樊秀华, 张爱琳, 杜春生, 赵晨

天津农学院食品科学系食品质量与安全教研室, 天津300384

#### 摘要:

**目的** 研究高效氯氰菊酯对雌性幼鼠性腺毒性作用及机理。**方法** 将40只刚断乳雌性SPF级昆明小鼠按体重随机分为溶剂对照0.1、1.0、10mg/kg高效氯氰菊酯组,皮下注射染毒,每天1次,连续染毒28d,观察阴道开口时间,动情周期,测定血清中雌二醇,性腺(卵巢及子宫)湿重及系数,子宫内层雌激素受体(ER)表达。**结果** 与对照组比较,高剂量高效氯氰菊酯组雌鼠动情期缩短,动情间期延长,子宫湿重(0.109±0.011)g增加( $P<0.05$ ),而各组子宫剥离重、子宫系数、血清雌二醇及子宫内层腺体数量差异无统计学意义( $P>0.05$ ),中、高剂量组子宫内层雌激素受体阳性表达率分别为(56.00±3.32)%,(29.00±5.58)%,明显低于对照组(72.8±3.84)%( $P<0.05$ )。**结论** 高效氯氰菊酯对幼年雌性小鼠生殖系统具有毒性作用,能降低子宫组织雌激素受体的表达。

**关键词:** 高效氯氰菊酯 亚慢性 性腺毒性 内分泌干扰物

### Sub-chronic gonadal toxicity and its mechanism of $\beta$ -cypermethrin in female immature mice

HE Qing-feng, FAN Xiu-hua, ZHANG Ai-lin

Department of Food Quality and Safety, Tianjin Agricultural University, Tianjin 300384, China

#### Abstract:

**Objective** To investigate the adverse effect and its mechanism of  $\beta$ -cypermethrin ( $\beta$ -CP) on gonads in female immature mice. **Methods** Forty specific pathogen-free immature mice were randomly divided into a negative group (treated with earhnut oil) and three  $\beta$ -CP exposure groups (0.1, 1.0, 10 mg/kg body weight). A daily subcutaneous exposure was conducted for 28 days. The time of vaginal open, estrous cycle, estrogen in serum, gonads (ovary and uterus) wet weight and coefficient, and the expression of estrogen receptor (ER) in endometrial were measured. **Results** Compared with the control group, the time of estrus shortened and the time of diestrus extended. The wet weight of uterus (0.109±0.011g) increased in the high dose group ( $P<0.05$ ), but the coefficient and the blotted weight of uterus, the level of estrogen in serum and the sum of gonadal in endometrial were not significantly different among the groups ( $P>0.05$  for all). In 1.0 and 10 mg/kg dose groups, the ratios of ER expression in endometrial was 56.00±3.32% and 29.00±5.58% and were lower than those of in the control group ( $P<0.05$ ). **Conclusion**  $\beta$ -CP has gonadal subchronic toxicity and endocrine disrupting effect and can induce the expression of ER in uterus in female mice.

**Keywords:**  $\beta$ -cypermethrin subchronic effect gonadal toxicity endocrine disruptor

收稿日期 2011-04-15 修回日期 网络版发布日期

DOI: 10.11847/zgggws2012-28-05-25

基金项目:

天津农学院科学研究发展基金(2008N009)

通讯作者:

作者简介:

#### 参考文献:

- [1] 刁传芸,任晓萍,蔺经,等.梨中氯氰菊酯、高效氯氰菊酯残留动态分析[J].江苏农业学报,2008,24(5):697-700.
- [2] 马庆华,续九如,王贵禧,等.冬枣百菌清、氯氰菊酯和氰戊菊酯残留的研究[J].中国农学通报,2009,25(15):51-54.
- [3] 佟俊旺,李君,范雪云,等.3种拟除虫菊酯类农药拟雌激素样活性的子宫增重实验研究[J].环境与职业医学,2005,22(4):361-364.
- [4] 李海斌,李君,姚三巧.氯氰菊酯对雌性大鼠生殖器官的影响[J].环境与健康杂志,2008,25(8):708-710.

#### 扩展功能

##### 本文信息

- ▶ Supporting info
- ▶ PDF(KB)
- ▶ [HTML全文]
- ▶ 参考文献

##### 服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

##### 本文关键词相关文章

- ▶ 高效氯氰菊酯
- ▶ 亚慢性
- ▶ 性腺毒性
- ▶ 内分泌干扰物

##### 本文作者相关文章

- ▶ 何庆峰
- ▶ 樊秀华
- ▶ 张爱琳
- ▶ 杜春生
- ▶ 赵晨

##### PubMed

- ▶ Article by HE Qing-feng
- ▶ Article by FAN Xiu-hua
- ▶ Article by ZHANG Ai-lin
- ▶ Article by
- ▶ Article by

[5] 乔丽丽.环境内分泌干扰物对青春期儿童性发育的影响[J].国外医学:卫生学分册,2005,32(6): 346-349.

[6] 施新酋.现代医学实验动物学[M].北京:人民卫生出版社,1999.

[7] Diel P,Schulz T,Smolnikar K,et al.Ability of xeno-and phytoestrogens to modulate expression of estrogen sensitive genes in rats uterus: estrogenicity profiles and utertropic activity[J].J Steroid Biochem Mol Biol,2000,73(1-2): 1-10.

[8] 薛楠,贾曼雪,侯祥红,等.三羟异黄酮对成年大鼠生殖系统影响[J].中国公共卫生,2009,25(6): 678-679.

[9] 陈以偿,郝卫东,尚兰琴,等.围生期双酚A暴露对大鼠雌性子代生殖系统及雌激素受体表达的影响[J].癌变畸变突变,2010,22(3): 196-201.

本刊中的类似文章

1. 胡伟婷, 关海霞, 滕卫平.环境内分泌干扰物对甲状腺影响[J]. 中国公共卫生, 2013,29(2): 306-309

文章评论 (请注意:本站实行文责自负, 请不要发表与学术无关的内容!评论内容不代表本站观点.)

反馈人	<input type="text"/>	邮箱地址	<input type="text"/>
反馈标题	<input type="text"/>	验证码	<input type="text" value="9932"/>