

论著

乙酰胆碱酯酶在不同品系和不同性别淡色库蚊的变化

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摘要:

**【摘要】** 目的 探讨乙酰胆碱酯酶 (acetylcholinesterase, AChE) 在不同品系和不同性别淡色库蚊的变化, 为应用生物化学方法检测蚊虫抗药性提供依据。方法 以碘化硫代乙酰胆碱为底物, 5, 5'-二硫-双(2-硝基苯甲酸)为显色剂, 测定单个蚊虫AChE, 以残杀威为抑制剂测定AChE不敏感性。结果 抗DDVP (Rd) 和抗残杀威 (Rp) 品系淡色库蚊AChE活性水平高于敏感 (S) 品系, 抗氯氰菊酯 (Rc) 品系淡色库蚊AChE活性与S品系相近。Rd、Rp品系淡色库蚊不敏感AChE个体频率高于S品系, Rc品系淡色库蚊不敏感AChE个体频率与S品系相近。S、Rd、Rp、Rc 4个品系淡色库蚊3日龄雌雄成虫AChE活性均是雌性大于雄性。结论 测定AChE可用来判断蚊虫抗药性状况, 不同性别蚊虫应分别制定判断标准。

关键词: 淡色库蚊 乙酰胆碱酯酶 抗药性

The changes of acetylcholinesterase in different strains and gender of *Culex pipiens pallens*

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Abstract:

**【Abstract】** Objective Study the changes of acetylcholinesterase (AChE) activity in different strains of adult male and female *Culex pipiens pallens*, and provide a basis for the insecticide?resistance detection of mosquitoes by biochemical method. Methods The AChE activity of single mosquito was determined, and acetylthiocholine iodide (ATCh) as the substrate and 5, 5'-dithio?bis (2-nitrobenzoic acid) (DTNB) as the developer. The insensitivity of AChE to Propoxur was assayed. Results The AChE activity of anti?DDVP (Rd) and anti?Propoxur (Rp) strains of *Cx.pipiens pallens* was significantly higher than that of susceptible (S) strains, however, the AChE activity of anti?Cypermethrin (Rc) strains was similar to that of S strain. The individual frequency of insensitive AChE of Rd strain and Rp strain was significantly higher than that of S strain, but that of Rc strains was similar to S strain. For S, Rd, Rp and Rc strains, the AChE activity of 3?day?old female mosquito was higher than that of 3?day?old male mosquito. Conclusion The resistance of mosquitoes could be judged by the determination of AChE activity, but a criterion should be different for the male and female mosquitoes.

Keywords: *Culex pipiens pallens* Acetylcholinesterase Resistance

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