

## 铜胁迫对铜锈环棱螺致死率、富集性、CAT和SOD的影响

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Effect of Copper Stress on Lethal Rate,Cu Enrichment,CAT and SOD Activities of *Bellamya aeruginosa*

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摘要

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摘要 以浙江省温州市瓯海茶山某河内的铜锈环棱螺 (*Bellamya aeruginosa*) 为研究对象,研究了铜胁迫下铜对铜锈环棱螺的致死效应、铜锈环棱螺对铜的富集性、铜对铜锈环棱螺肝胰腺过氧化氢酶 (CAT) 和超氧化物歧化酶 (SOD) 活性的影响。结果表明,铜锈环棱螺对较低浓度  $\text{Cu}^{2+}$  ( $1.0$ 、 $2.0 \text{ mg} \cdot \text{L}^{-1}$ ) 具有一定的抵抗能力,而在较高浓度  $\text{Cu}^{2+}$  ( $4.0 \sim 8.0 \text{ mg} \cdot \text{L}^{-1}$ ) 胁迫下,则出现较高的死亡率。当  $\rho(\text{Cu}^{2+})$  为  $0.2 \sim 0.8 \text{ mg} \cdot \text{L}^{-1}$  时,随着染毒时间的增加和染毒剂量的加大,铜锈环棱螺对铜的富集性也在增强,但当  $\rho(\text{Cu}^{2+})$  为  $1.6 \text{ mg} \cdot \text{L}^{-1}$  时,铜锈环棱螺对铜的富集量却随染毒时间的增加而呈下降趋势。在铜胁迫下,铜锈环棱螺肝胰腺CAT和SOD活性受到较大影响。

关键词: 铜 铜锈环棱螺 富集性 CAT SOD

Abstract: Effects of copper on lethal rate and Cu enrichment of *Bellamya aeruginosa* and CAT and SOD activities in the hepatopancreas of *Bellamya aeruginosa* under Cu stress were studied. *Bellamya aeruginosa* was collected from a river in Chashan of Ou Hai, Wenzhou City, Zhejiang Province. Results show that *Bellamya aeruginosa* was quite capable of tolerating low concentrations of  $\text{Cu}^{2+}$  ( $1.0$  and  $2.0 \text{ mg} \cdot \text{L}^{-1}$ ), but showed a relatively high lethal rate when  $\rho(\text{Cu}^{2+})$  was in the range from  $4.0$  to  $8.0 \text{ mg} \cdot \text{L}^{-1}$ . When  $\rho(\text{Cu}^{2+})$  was  $0.2$ - $0.8 \text{ mg} \cdot \text{L}^{-1}$ , *Bellamya aeruginosa* enhanced its Cu enrichment with its exposure to the toxicant getting longer and the toxicant higher in dosage. However, when  $\rho(\text{Cu}^{2+})$  reached  $1.6 \text{ mg} \cdot \text{L}^{-1}$ , its Cu enrichment declined with the duration of its exposure. Cu stress significantly affected CAT and SOD activities in the hepatopancreas of *Bellamya aeruginosa*.

Keywords: copper *Bellamya aeruginosa* accumulation CAT SOD

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