

论著

体外小鼠、豚鼠、犬及人血液对梭曼的解毒作用

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摘要 目的 研究不同种属动物及人血液对梭曼的解毒能力与血液中几种梭曼解毒酶活性的关系。方法 测定血液中梭曼残留浓度及解毒酶活性。结果 小鼠、豚鼠、犬、人血浆对梭曼的解毒能力要明显高于其自身红细胞的解毒能力, 血浆对梭曼的解毒能力依小鼠、豚鼠、犬、人的顺序由高到低依次排列。啮齿类动物血液中羧酸酯酶(CaE)活性位点数目多且与梭曼结合快, 因此在梭曼解毒中可发挥重要作用。犬、人血液中乙酰胆碱酯酶(AChE)在梭曼解毒中占据了重要的解毒地位, 犬、人血液中CaE基本没有参与梭曼解毒。结论 血液解毒能力的种属差异与种属间解毒酶结合位点数量的多少及梭曼与酶的结合速率密切相关。

关键词 [梭曼](#) [羧酸酯酶](#) [胆碱酯酶](#) [血液](#) [解毒](#) [毒物](#)

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In vitro degradation of soman in blood of mouse, guinea pig, dog and human

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Abstract

AIM To study the relationship between the capability of soman detoxification of blood and the detoxifying enzyme activities in blood of different species. **METHODS** By measuring residual levels of soman and activities of detoxifying enzymes. **RESULTS** The degradation of soman by plasma was more powerful than that by its own red blood cells, the rank order of soman degradation in plasma was mouse > guinea pig > human > dog. The plasma carboxylesterase in rodents played a very significant role in inactivating soman due largely to its comparatively activity and large number of binding site. While, the plasma carboxyl esterase in dog and human did not play an important role, as did in rodents. In contrast, the cholinesterase in blood of dog and human served as the major elimination pathways of soman. **CONCLUSION** The differences in the amount of esteratic site available for soman detoxification and the binding rate between soman and detoxifying enzymes might be responsible for the species variation of detoxification capability in blood.

Key words [soman](#) [carboxylesterase](#) [cholines terase](#) [blood](#) [metabolic detoxification](#) [poisons](#)

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