

论著

麻痹性贝类毒素在大鼠体内的分布与累积

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摘要 目的 检测低剂量摄入麻痹性贝类毒素(PSP)后,多种毒素在大鼠内脏器官中的分布和累积情况,为进一步完善贝类水产品中麻痹性贝毒的安全标准提供依据。方法 按美国公职分析化学家协会(AOAC)推荐的麻痹性贝毒小鼠测定法从自然毒化的海湾扇贝和华贵栉孔扇贝中提取PSP粗毒素,分别给大鼠灌胃51.2, 25.6和10.2小鼠单位·kg⁻¹,每天1次,连续28 d。同时设溶剂(未毒化贝组织的盐酸提取液)对照组和空白对照组。停毒后的d 1, d 3和d 14心脏取血,处死大鼠,收集肝、肾、脾和脑等组织,采用高效液相色谱法检测各组织中PSP的种类和含量。结果 在所检测的4个内脏组织中,3个剂量的肝和肾脏组织中均检测出PSP,并且在停毒d 14时仍有毒素存留,在脑和脾脏组织未检测出PSP。肝和肾组织中累积的PSP种类不同,所检测的各类PSP中,膝沟藻毒素4最易在大鼠肝和肾脏中累积。结论 低剂量经口染毒的PSP可分布于大鼠的肝和肾脏,且在肝和肾脏中累积。

关键词 [麻痹性贝类毒素](#) [毒素类](#) [组织分布](#)

分类号 [R991](#)

Distribution and accumulation of paralytic shellfish poisoning toxins in rats

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Abstract

AIM To investigate the distribution and potential accumulation of paralytic shellfish poisoning (PSP) toxins in rat liver, kidneys, spleen and brains after giving (ig) low levels of PSP toxins, and to provide more information on toxicity of PSP toxins. **METHODS** The crude PSP toxins were extracted from *Argopecten irradians* and *Chlamys nobilis*. The extracted PSP toxins in 51.2, 25.6 and 10.2 mouse units·kg⁻¹ were administrated (ig) to rats, respectively, once a day for 28 d. Two control groups were set, one was fed with HCl extracts of bivalves without toxins, and the other was fed with natural water. The PSP toxins in the rat liver, kidneys, spleen and brains were analyzed with high performance liquid chromatography on d 1, d 3 and d 14 after the final administration. **RESULTS** Some kinds of PSP toxins were detected in rat liver and kidneys on d 14 after the final administration of PSP toxins, but no PSP toxins were detected in spleen and brains. The kinds of PSP toxins detected in kidneys and liver were different, gonyautoxins 4 accumulated easily in kidneys and liver. **CONCLUSION** The oral administration of low levels of PSP toxins results in the accumulation of PSP toxins in rat kidneys and liver.

Key words [paralytic shellfish poisoning](#) [toxins](#) [tissue distribution](#)

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