

## 柱前衍生高效液相色谱法测定鱼罐头中的组胺

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## Determination of histamine in canned fish by high performance liquid chromatography with pre-column derivatization

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**摘要** 建立了一种测定鱼罐头中组胺含量的柱前衍生高效液相色谱(HPLC)方法。样品匀浆后采用高氯酸水溶液超声提取,提取液经丹酰氯衍生后,采用HPLC分离,紫外检测器检测,外标法定量。采用粒径为1.8 μm固定相填料的C18色谱柱,在0.3 mL/min的流速下,样品的分析时间小于5 min,并可有效地减少流动相消耗,节约成本。组胺在0.08~8.00 mg/L内线性关系良好,相关系数为0.99998;酱煮鲑鱼罐头中组胺在不同浓度水平的平均加标回收率均大于96%,相对标准偏差(RSD)小于2.5%;鱼罐头中组胺的定量限可达5.00 mg/kg。所建立的HPLC方法快速、灵敏度高、重复性好,前处理方法简单,可用于鱼罐头中组胺的测定。

**关键词:** 高效液相色谱 柱前衍生 组胺 鱼罐头

**Abstract:** A pre-column derivatization-high performance liquid chromatographic (HPLC) method has been developed for the determination of histamine in canned fish. The homogenated samples were ultrasonically extracted with perchloric acid aqueous solution, derivatized with dansyl chloride and diluted with acetonitrile to a desired volume. The samples were determined by HPLC with ultraviolet detector and quantified by external standard method. Adopting a C18 column with 1.8 μm stationary phase particles, the analysis time for each sample was smaller than 5 min with the flow rate of 0.3 mL/min. It can decrease the consumption of the mobile phase and save the cost. The linear range was 0.08~8.00 mg/L for histamine. The correlation coefficient was 0.99998. The average recoveries of histamine at different concentration levels in spiked samples were greater than 96% and the relative standard deviations (RSDs) were smaller than 2.5%. The quantitation limit was 5.00 mg/kg for histamine in canned fish by HPLC. The results indicated that this HPLC method is fast, sensitive, reproducible and practical for the routine analysis of histamine in canned fish.

**Keywords:** high performance liquid chromatography pre-column derivatization histamine canned fish

Received 2010-08-09; published 2010-11-25

Fund:

中央级公益性科研院所基本科研业务费项目(No.2009M02).

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引用本文:

金高娃\*, 蔡友琼, 于慧娟, 钱蓓蕾.柱前衍生高效液相色谱法测定鱼罐头中的组胺[J] 色谱, 2010,V28(11): 1099-1102

JIN Gaowa\*, CAI Youqiong, YU Huijuan, QIAN Beilei.Determination of histamine in canned fish by high performance liquid chromatography with pre-column derivatization[J] Chinese Journal of Chromatography, 2010,V28(11): 1099-1102

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