

论文

白斑综合征中国对虾肝胰腺蛋白质组学研究的技术探索

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摘要:

建立白斑综合征中国对虾肝胰腺蛋白质组学技术体系, 以患白斑综合征中国对虾的肝胰腺为研究对象, 健康中国对虾肝胰腺为对照组, 探索2种蛋白质组学差异蛋白的分离和鉴定的方法. 采用双向凝胶电泳(4~7固相pH梯度干胶条, 10%SDS-PAGE)分离蛋白质组, 银染显色, 图像分析软件比较分析, 识别差异蛋白, 胶上扣点, 处理后通过基质辅助激光解析电离飞行时间质谱(MOLDI-TOF)得到肽质量指纹图谱, 软件分析后应用Mascot数据库搜索软件鉴定蛋白. 分别获得中国对虾患白斑病组及对照组正常肝胰腺蛋白质组表达图谱. 分别识别出203和107个蛋白质点. 筛选并尝试鉴定数个差异蛋白. 对各方法步骤进行了技术探讨, 对实验过程提出了一系列建议. 建立了双向电泳及生物质谱方法研究中国对虾白斑病的蛋白质组学技术体系. 该体系拓宽了对虾免疫生理研究的途径, 以从蛋白质水平探讨对虾发病机制, 寻找有效药物靶点.

关键词: 白斑综合征 中国对虾肝胰腺 蛋白质组学 双向电泳 生物质谱

Technology exploration for proteomics analysis in hepatopancreas of shrimp (Fenneropenaeus chinensis) with white spot syndrome

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Abstract:

A proteomics technology platform on hepatopancreas of Chinese shrimp (Fenneropenaeus chinensis) with white spot syndrome was established. These methods were used to search for and identify the differential proteins between shrimp with WSS and normal shrimp. 2DE (4~7 IPG, 10%SDS-PAGE) was used to separate total proteins. Silver nitrate was applied to stain the proteins. 2-dimensional maps were analyzed by Imagemaster 6.0 (GE). The peptides mass fingerprint was obtained by MOLDI-TOF. After analysis by Data Explorer, differential proteins were identified using Mascot on line. Hepatopancreas proteomics 2-dimensional maps of shrimp with WSS and normal shrimp were obtained, and 203 and 107 protein spots were identified, respectively. Several differential proteins were screened and identified. Several helpful suggestions were given on experimental procedures. A proteomics technology platform including 2DE and Bio-Mass Spectrometry was proved to be valuable in the study of the immunity and other physiological phenomena of shrimp. It is helpful in seeking drug targets for the therapy of diseases.

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