

论文

金乌贼脑和视神经节蛋白质组比较分析

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摘要:

采用双向凝胶电泳(2D-PAGE)技术优化分离金乌贼的脑及视神经节全蛋白质, 并选用肽质量指纹谱(Peptide mass fingerprinting, PMF)技术和数据库检索方法对2D-PAGE图谱上的部分蛋白质斑点进行鉴定, 初步构建了金乌贼视神经节(Optic ganglion of *Sepia esculenta*, SEOG)和脑神经节(Cerebral ganglion of *Sepia esculenta*, SECG)部分分子解剖图谱. 用Melanie 4 Trial软件分析脑神经节和视神经节蛋白质斑点总数量分别为682和594个, 其中SECG蛋白质斑点数量明显多于SEOG. 在脑神经节和视神经节中均发现了线粒体苹果酸脱氢酶前体(Mitochondrial malate dehydrogenase precursor, pre-MDH)及可溶性NSF连接蛋白(SNAP-type proteins). 此外, 延长因子(Elongation factor G)、微管蛋白(Tubulin)和肌动蛋白(Actin)等蛋白质也具有高匹配率. 已鉴定的蛋白质, 多数属于假定蛋白和结构蛋白类.

关键词: 金乌贼; 脑神经节; 视神经节; 蛋白质组学; 鉴定

Comparison Analysis of Proteome of Both Cerebral and Optic Ganglions in *Sepia esculenta*

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Abstract:

Sepia esculenta vests in a cephalopoda animal in mollusca. The differentiation of neural system show not only relative higher level in *Cephalopoda animal*, but also is easily to separate for studying in the neural sciences. Here, proteomes of both cerebral and optic ganglions in *Sepia esculenta* were effectively separated by a improved approach of 2D-PAGE. In addition, we used both peptide mass fingerprinting(PMF) and database search to identify protein spots in part in 2D-PAGE gel for establishing maps of molecular anatomic of cerebral and optic ganglions primarily in *Sepia esculenta*. We used a software of Melanie 4 Trial to analyze those ganglions, indicating approximately 682 and 594 protein spots in cerebral and optic ganglions, respectively, which the spot numbers in front more than that in later. Moreover, the same proteins such as mitochondrial malate dehydrogenase precursor, pre-MDH, SNAP-type proteins can be found by both ganglions. In addition, these spots such as elongation factor G, tubulin, and actin shows high match rate, but most protein identified in the gel are hypothetic and structural proteins.

Keywords: *Sepia esculenta*; Cerebral ganglion; Optic ganglion; Proteomics; Identification

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