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研究论文

适用于盐生植物的双向电泳样品制备方法

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摘要 比较了三氯乙酸/丙酮沉淀法（TCA）、三氯乙酸沉淀法（E-TCA）和酚抽法（Phe）3种方法对盐生植物盐角草（Salicornia europaea L.）总蛋白的提取效果。3种方法分别得到579、343和535个蛋白点；TCA和E-TCA法所得图谱均存在严重的横向纹理，Phe法所得图谱则背景干净，基本上没有纹理。说明Phe法不仅能很好地提取盐角草蛋白，而且能有效去除样品中的盐分。对Phe法的提取液进行了改进，所得图谱背景更加清晰，蛋白点数增加。为其他盐生植物以及嗜盐微生物蛋白质的提取提供了重要参考。

关键词 蛋白质提取；双向电泳（2-DE）； 酚； 三氯乙酸（TCA）；盐角草

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A protein extraction method suitable for two_dimensional electrophoresis analysis of halophytes

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Abstract We compared three different methods, i.e. trichloroacetic acid/acetone precipitation (TCA), trichloroacetic acid precipitation (E-TCA), and phenol extraction (Phe), to determine their efficiency in extracting total proteins from Salicornia europaea L. by two-dimensional electrophoresis (2-DE) analysis. Generally, 579, 343, and 535 protein spots were generated by the three methods. The 2-DE gels of TCA and E-TCA showed strong horizontal streaks, while that of the Phe method had only a few faint streaks, which indicated effective removal of salt from the protein sample by the Phe method. Moreover, an optimized extraction buffer of the Phe method was capable of generating more protein spots and gave more clear background in the 2-DE map. Findings from this study are of great significance for developing effective protein extraction methods for other halophytes, and halophilic microorganisms.

Key words protein extraction _ two-dimensional electrophoresis (2-DE) _ Phenol _ Trichloroacetic acid (TCA) _ Salicornia europaea L

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