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论著

蛋白酶体抑制剂PS-341诱导骨髓瘤细胞凋亡的蛋白质组学研究

贾海涛1， 葛峰1， 卢心鹏1， 曾慧兰2， 李丽萍1， 陈智鹏1， 卢春花1

暨南大学1.生命与健康工程研究院; 2.第一附属医院血液科， 广州 510632

摘要：

目的：比较蛋白酶体抑制剂PS-341处理多发性骨髓瘤细胞U266前后蛋白质组的差异，探究PS-341潜在的药物靶点，为多发性骨髓瘤的临床治疗提供理论依据。方法：用蛋白酶体抑制剂PS-341处理骨髓瘤细胞U266，应用双向凝胶电泳技术分离PS-341处理前后的U266细胞的蛋白质，ImageMaster 2D Platinum图像分析软件识别药物处理前后U266细胞的差异表达蛋白质点，基质辅助激光解吸电离飞行时间质谱(MALDI-TOF-MS)鉴定差异表达的蛋白质。Western印迹法检测差异蛋白质BAG-2在药物处理前后U266细胞中的表达水平。结果：建立了PS-341处理前后U266细胞蛋白质的双向凝胶电泳图谱，找到55个差异表达的蛋白质点，鉴定了31个差异表达的蛋白质，有27个蛋白质在PS-341处理后下调。Western 印迹分析证实BAG-2在药物处理前后U266细胞中的表达水平存在差异。结论：处理后下调的一些蛋白可能是蛋白酶体抑制剂PS-341潜在的药物靶标。

关键词： PS-341 多发性骨髓瘤 双向凝胶电泳 质谱 药物靶标

Proteomics of apoptosis of multiple myeloma cells induced by proteasome inhibitor PS-341

JIA Haitao1, GE Feng1, LU Xinpeng1, ZENG Huilan2, LI Liping1, CHEN Zhipeng1, LU Chunhua1

1.Institute of Life and Health Engineering, Jinan University; 2. Department of Hematology, The First Affiliated Hospital of Jinan University, Guangzhou 510632, China

Abstract:

ObjectiveTo compare the proteome difference between multiple myeloma cell line U266 cells treated and untreated with PS-341, to investigate the potential drug targets, and to provide theoretical evidence for clinical therapy of multiple myeloma. MethodsTwo-dimensional gel electrophoresis (2-DE) was performed to separate proteins from treated and untreated U266 cells with proteasome inhibitor PS-341. ImageMaster 2D Platinum software was used to analyze 2-DE image, and matrix-assisted laser desorption/ionization time of flight mass spectrometry (MALDI-TOF-MS) was used to identify the differentially expressed proteins. The expression levels of differential protein BAG-2 in the 2 groups of U266 cells lines were detected by Western blot. ResultsThe 2-DE reference pattern of treated and untreated U266 cells with PS-341 was established. A total of 31 differential proteins were identified by MALDI-TOF-MS, 27 of which were down-regulated after PS-341 treatment. The differential expression level of BAG-2 in the 2 groups of U266 cells was confirmed by Western blot. ConclusionSome down-regulated proteins may be the potential drug targets of proteasome inhibitor PS-341.

Keywords: PS-341;multiple myeloma;2-dimensional gel electrophoresis;mass spectrometry;drug target

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通讯作者: LU Chunhua

作者简介:

作者Email: chl-bb@163.com

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