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mda-7/IL-24 和 IL-24 delE5 诱导急性髓系白血病细胞向单核细胞分化 [点此下载全文](#)

[姚兴荣](#) [马小彤](#) [杨宾霞](#) [段永娟](#) [林永敏](#)

中国医学科学院 北京协和医学院 血液病医院 暨血液学研究所 实验血液学国家重点实验室, 天津 300020; 中国医学科学院 北京协和医学院 血液病医院 暨血液学研究所 实验血液学国家重点实验室, 天津 300020; 中国医学科学院 北京协和医学院 血液病医院 暨血液学研究所 实验血液学国家重点实验室, 天津 300020; 中国医学科学院 北京协和医学院 血液病医院 暨血液学研究所 实验血液学国家重点实验室, 天津 300020; 中国医学科学院 北京协和医学院 血液病医院 暨血液学研究所 实验血液学国家重点实验室, 天津 300020

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摘要:

目的: 研究人黑素瘤分化相关基因-7 (melanoma differentiation associated gene-7, mda-7; 又称 IL-24) 及其剪接体 IL-24 delE5 与急性髓系白血病 (acute myeloid leukemia, AML) 细胞分化的关系。方法: 十四烷酰佛波醇-乙酯 (12-O-tetradecanoylphorbol-13-acetate, TPA) 处理人急性髓系白血病细胞系U937、HL-60, real-time PCR及Western blotting检测细胞中 mda-7/IL-24 和 IL-24 delE5 的表达, FACS检测细胞表面CD11b、CD14和CD115的表达。siRNA干扰U937、HL-60细胞中 mda-7/IL-24 和 IL-24 delE5 的表达后, 再以TPA诱导细胞分化, FACS检测CD11b、CD14和CD115的表达。用前期构建的 mda-7/IL-24 和 IL-24 delE5 载体转染U937、HL-60及AML-M5患者的原代白血病细胞, 观察异位过表达 mda-7/IL-24 和 IL-24 delE5 能否诱导白血病细胞向单核细胞分化。结果: TPA在诱导U937、HL-60细胞向单核细胞分化过程中显著促进 mda-7/IL-24 及其剪接体 IL-24 delE5 的表达, 用siRNA干扰 mda-7/IL-24 及 IL-24 delE5 的表达后, TPA诱导U937、HL-60细胞向单核细胞分化的作用也被阻断。异位过表达 mda-7/IL-24 和 IL-24 delE5 可诱导U937、HL-60以及原代AML细胞向单核细胞分化: U937、HL-60细胞表面CD11b和CD14表达均显著升高, CD115表达仅在U937细胞有显著升高; 3例AML-M5患者的原代AML细胞中CD11b、CD14及CD115表达均有不同程度升高, 细胞呈现单核细胞的形态特征。结论: TPA可通过上调mda-7/IL-24 及其剪接体 IL-24 delE5 的表达诱导白血病细胞向单核细胞分化。

关键词: [黑素瘤分化相关基因-7 \(mda-7/IL-24 \)](#) [IL-24 delE5](#) [十四烷酰佛波醇-乙酯](#) [急性髓系白血病](#) [单核细胞](#) [分化](#)

mda-7/IL-24 and IL-24 delE5 induce myeloid leukemia cells to differentiate into monocytes [Download Fulltext](#)

[YAO Xing-rong](#) [MA Xiao-tong](#) [YANG Bin-xia](#) [DUAN Yong-juan](#) [LIN Yong-min](#)

State Key Laboratory of Experimental Hematology, Institute of Hematology and Blood Diseases Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Tianjin 300020, China; State Key Laboratory of Experimental Hematology, Institute of Hematology and Blood Diseases Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Tianjin 300020, China; State Key Laboratory of Experimental Hematology, Institute of Hematology and Blood Diseases Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Tianjin 300020, China; State Key Laboratory of Experimental Hematology, Institute of Hematology and Blood Diseases Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Tianjin 300020, China; State Key Laboratory of Experimental Hematology, Institute of Hematology and Blood Diseases Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Tianjin 300020, China

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Abstract:

Objective: To investigate the effects of melanoma differentiation associated gene-7 (mda-7 , also named IL-24) and IL-24 delE5 , an mda-7/IL-24 splice variant, on differentiation of acute myeloid leukemia (AML) cells. Methods : The AML cell lines U937 and HL-60 were treated with 12-O-tetradecanoylphorbol-13-acetate (TPA); mda-7/IL-24 and IL-24 delE5 expressions were detected by real-time PCR and Western blotting assays. CD11b, CD14 and CD115 expressions on cell surface were examined by FACS. U937 and HL-60 cells were induced with TPA after siRNA interfering mda-7/IL-24 and IL-24 delE5 expressions, and then CD11b, CD14 and CD115 expressions were examined by FACS. U937 and HL-60 cell lines and primary leukemia cells from AML-M5 patients were transfected with mda-7/IL-24 or IL-24 delE5 plasmids, which were established in our previous study, in order to know whether ectopic overexpressions of mda-7/IL-24 and IL-24 delE5 can induce the monocytic differentiation of leukemia cells. Results: The expressions of mda-7/IL-24 and its splice variant, IL-24 delE5 , were significantly induced in U937 and HL-60 cells during TPA-mediated monocytic differentiation. Interfering mda-7/IL-24 and IL-24 delE5 expressions after siRNA treatment inhibited the monocytic differentiation ability of TPA on U937 and HL-60 cells. Ectopic overexpressions of mda-7/IL-24 and IL-24 delE5 induced differentiation of U937, HL-60, and primary AML leukemia cells into monocytes: CD11b, CD14 expressions on U937 and HL-60 cells and CD115 expression on U937 were significantly increased; CD11b, CD14 and CD115 expressions on primary leukemia cells from 3 AML patients were also increased with monocytic features. Conclusion: TPA can induce monocytic differentiation of leukemia cells by increasing mda-7/IL-24 and its splice variant IL-24 delE5 expressions.

Keywords: [melanoma differentiation associated gene-7 \(mda-7/IL-24 \)](#) [IL-24 delE5](#) [12-O-tetradecanoylphorbol-13-acetate \(TPA\)](#) [acute myeloid leukemia](#) [monocyte](#) [differentiation](#)

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