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血源细胞系中CD39的表达和功能分析

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细胞外ATP通过激活细胞膜上P2受体介导细胞间通讯；CD39是一个钙、镁离子依赖的ATP双磷酸酶，其对ATP信号的调节机制尚未完全阐明。本文采用半定量RT-PCR、ABC免疫酶标和流式细胞术，以及荧光素/荧光素酶法，研究了七个血源细胞系中CD39的表达和功能。结果表明，不同细胞表达水平差异显著，在J6-1和LCL-H中高水平表达，HL60中低水平表达，而Namalva、Jurkat、U937细胞中极低水平表达；CD39的表达与这些细胞膜上ATP酶活性、胞外ATP的组成性水平结果一致，提示CD39是这些细胞膜上ATP酶活性的主要来源，可能在调节P2受体介导的细胞间通讯中起重要作用。

ANALYSIS ON EXPRESSION AND FUNCTION OF CD39 IN HEMATOPOIETIC CELL LINES

Extracellular ATP mediates intercellular communication through activation of P2 receptors. CD39 is an Ecto-(Ca2+, Mg2+)-apyrase, which hydrolyzes ATP and ADP. However, the mechanism how CD39 modulates ATP-mediated signal remains largely unknown. In this study, semi-quantitative RT-PCR, ABC immunohistochemistry assay, flow cytometry analysis and luciferase/luciferin assay were used to study the expression and function of CD39 in seven hematopoietic cell lines. The results showed that the expression of CD39 varied among these cell lines; CD39 was expressed in both J6-1 and LCL-H at high levels, in HL60 cells at low level, while in Namalva, Jurkat and U937 cells at very low levels. Furthermore, the expression pattern of CD39 was consistent with the results of cell surface ATPase activity and constitutive levels of extracellular ATP of these cells. Our results indicated that CD39 contributed to the ATPase activity on the surface of these hematopoietic cells, and suggested that CD39 might play an important role in the modulation of intercellular communication through P2 receptors.

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