

论著

促酰化蛋白诱导3T3-F442A前脂肪细胞分化的研究

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摘要 目的: 探讨新型脂源性激素促酰化蛋白(ASP)是否具有诱导前脂肪细胞分化的作用。方法: 以3T3-F442A前脂肪细胞为研究对象, 通过形态学观察、油红染色测定脂肪细胞分化率, 测定脂肪细胞甘油三酯合成率和甘油三酯总量, 采用[3H]-胸腺嘧啶掺入法, 反映ASP诱导3T3-F442A前脂肪细胞分化过程中克隆增殖的情况, 并与经典的诱导分化剂胰岛素比较。结果: (1)单独的ASP刺激, 即可诱导3T3-F442A前脂肪细胞向成熟脂肪细胞的形态转变, 且分化率较高, 与胰岛素刺激3T3-F442A前脂肪细胞分化相比, 无显著差异($P>0.05$)。(2)ASP促进3T3-F442A前脂肪细胞的甘油三酯合成, 并增加细胞甘油三酯的总量, 均明显高于对照组($P<0.05$), 而与胰岛素组相比无显著差异($P>0.05$)。(3)分化诱导24 h, ASP组[3H]-胸腺嘧啶掺入率是对照组的223% ($P<0.01$), 胰岛素组[3H]-胸腺嘧啶掺入是对照组的589% ($P<0.01$)。结论: 新型的脂源性激素ASP具有诱导前脂肪细胞分化为成熟脂肪细胞的生物学作用。

关键词 [促酰化蛋白](#); [脂细胞](#); [分化](#)

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Acylation stimulating protein induces preadipocyte differentiation

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Abstract

AIM: To study the role of acylation stimulating protein (ASP) in the differentiation of 3T3-F442A preadipocytes. METHODS: Differentiation of 3T3-F442A preadipocytes was induced by ASP. The morphological changes were observed by Oil-Red O staining and the differentiation rate was compared. TG synthesis and TG mass in these cells were also assayed. DNA synthesis was measured by [3H]-TdR incorporation. A typical differentiation inducer, insulin, was used as a positive control to compare these results. RESULTS: (1) 3T3-F442A preadipocytes were induced to differentiate by ASP alone. Fat droplets were clearly visible in the cytoplasm of 3T3-F442A cells. The differentiation rate was high (90%), but no significant difference was observed, compared with that in insulin group (95%). (2) In ASP group, TG synthesis and TG mass were significantly increased, both of them were higher than that in control group ($P<0.05$), but there was no significant difference, compared with insulin group ($P>0.05$). CONCLUSION: As a new adipocytes hormone, ASP plays an important biological role in the differentiation of preadipocytes.

Key words [Acylation stimulating protein](#) [Adipocytes](#) [Differentiation](#)

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