

论著

# HIV-1糖蛋白gp120激发人小胶质细胞钙内流效应和ERK磷酸化

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**摘要** 目的: 探讨HIV-1糖蛋白gp120对人小胶质细胞钙离子内流和ERK磷酸化的作用及其机制。

方法: 用钙离子探针Fluo-4标记粘附在盖玻片上的人小胶质细胞, 运用共聚焦显微镜以荧光强度为指标实时观察各种条件下的细胞内钙离子水平的变化; 用gp120处理并用anti-gp120-FITC进行染色, 运用共聚焦显微镜技术和流式细胞术分析人小胶质细胞与gp120结合情况; 用抗磷酸化ERK 抗体免疫荧光方法进行染色, 运用共聚焦显微镜技术和流式细胞术进行ERK磷酸化水平分析。

结果: 共聚焦显微镜检测结果显示HIV-1 糖蛋白gp120能够激发人小胶质细胞钙离子内流效应; 共聚焦显微镜和流式细胞仪分析结果显示gp120可以与人小胶质细胞结合; 共聚焦显微镜和流式细胞仪分析结果显示gp120刺激可增加人小胶质细胞ERK磷酸化。

结论: HIV-1 糖蛋白gp120能在人小胶质细胞激发钙离子内流并且增加胞内ERK的磷酸化, 从而导致了小胶质细胞的活化, 这一效应提示, 在HIV-1相关性脑炎中, gp120可能参与了某些发病机制。

**关键词** [人小胶质细胞](#) [HIV-1糖蛋白gp120](#) [钙离子内流](#)

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## Calcium-influx response and ERK phosphorylation in human microglia triggered by HIV-1 glycoprotein gp120

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### Abstract

<FONT face=Verdana>AIM: The aim of the present study is to explore the effects and mechanisms of HIV-1 glycoprotein gp120 on calcium-influx and ERK-phosphorylation of human microglia.METHODS: The level of intracellular calcium of human microglia grown on coverslip,which was loaded by calcium-probe,Fluo-4,and then treated in various experimental processing,was detected by confocal microscopy with time resolution mode.The binding of gp120 to human microglia was determined with confocal microscopy or flow cytometry after treatment with gp120 and stained with anti-gp120-FITC antibody.Phosphorylation of ERK within human microglia with or without gp120 stimulation was analyzed with confocal microscopy following the direct immuno-staining with anti-phosphorylated ERK antibody.<BR>RESULTS: The results of confocal microscopy showed that calcium-influx response was triggered by HIV-1 glycoprotein gp120 in human microglia.The results from analysis by confocal microscopy and flow cytometry showed that gp120 was able to bind to human microglia.ERK phosphorylation was enhanced in human microglia stimulated with gp120.<BR>CONCLUSION: HIV-1 glycoprotein gp120 induces calcium-influx in human microglia and enhances ERK phosphorylation in human microglia,indicating that gp120 is an activator of human microglia.So gp120 may be involved in the pathogenesis of HIV-associated dementia. <BR></FONT>

**Key words** [Human microglia](#) [HIV-1 glycoprotein gp120](#) [Calcium influx](#)

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