



A service of the [U.S. National Library of Medicine](#)
and the [National Institutes of Health](#)

Select **19187446**

1: [J Neurochem](#). 2009 Feb 2. [Epub ahead of print]



Reduction of Protein kinase C zeta inhibits migration and invasion of human glioblastoma cells.

[Guo H](#), [Gu F](#), [Li W](#), [Zhang B](#), [Niu R](#), [Fu L](#), [Zhang N](#), [Ma Y](#).

Department of Core Laboratory, Tianjin Medical University Cancer Institute and Hospital, Tianjin, PR China, 300060.

: Glioblastomas are the most aggressive forms of primary brain tumors with their tendency to invade surrounding healthy brain tissues, rendering them largely incurable. In this report, we used small-interference RNA technology to knock down the expression of PKCzeta, which resulted in specific and massive impairment of glioblastoma cell migration and invasion. We also explained the fundamental molecular processes of glioblastoma migration and invasion in which PKCzeta is a participant. The silence of PKCzeta expression likewise impaired the phosphorylation of LIMK and cofilin, which is a critical step in cofilin recycling and actin polymerization. Consistent with the defects in cell adhesion, phosphorylation of integrin beta1 was also dampened. Therefore, PKCzeta regulated both cytoskeleton rearrangement and cell adhesion, which contributed to cell migration. Additionally, there was downregulation of MMP-9 expression in siPKCzeta/LN-229 cells, which coincided with decreased invasion both in vitro and in vivo. These results indicate that PKCzeta is involved in the control of glioblastoma cell migration and invasion by regulating the cytoskeleton rearrangement, cell adhesion, and MMP-9 expression. Collectively, these findings suggest that PKCzeta is a potential therapeutic target for glioblastoma infiltration.

PMID: 19187446 [PubMed - as supplied by publisher]
