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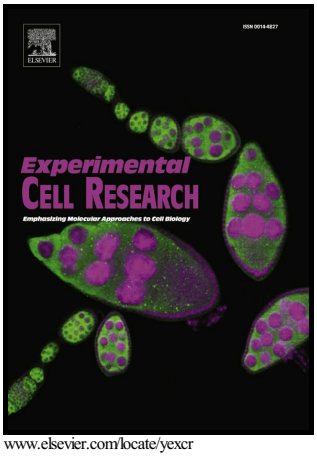

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Caveolin-1 promotes pituitary adenoma cells migration and invasion by regulating the interaction between EGR1 and KLF5

Wei Yang[1], Tongjiang Xu[1], Peng Qiu[1], Guangming Xu[1,*]

[1] Department of neurosurgery, Shandong provincial Hospital Affiliated to Shandong University, Jinan 250021, China

Abstract

Caveolin-1 (Cav-1) is a principal structural protein of caveolae. Cav-1 has been implicated in cancer progression, but its precise functional roles in pituitary adenoma cells remain largely unclear. In this study, we evidenced that the level of cav-1 was elevated in the invasive pituitary adenoma. Cav-1 knockdown restrained the migration and invasion of pituitary adenoma cells. In cav-1-depleting cells, the expression of miR-145, miR-124 and miR-183 were up-regulated. Further investigation showed that cav-1 knockdown inhibited the nuclear translocation of EGR1, reducing the interaction between EGR1 and KLF5. The resulting free KLF5 promoted the expression of miR-145, miR-124 and miR-183 by binding to their promoters, which was blocked by EGR1. Luciferase reporter assay indicated that miR-145 targeted FSCN1, miR-124 targeted PTTG1IP, and miR-183 targeted EZR in pituitary adenoma cells, respectively. Knockdown of FSCN1, PTTG1IP or EZR suppressed the migration and invasion of pituitary adenoma cells. In conclusion, our data suggested that the elevated cav-1 promoted pituitary adenoma cells migration and invasion by regulating the interaction between EGR1 and KLF5.

Keywords: Caveolin-1; EGR1; KLF5; microRNA; Migration and invasion; Pituitary adenoma

Introduction

Pituitary adenomas are commonly benign monoclonal neoplasms, accounting for

* Corresponding authors. E-mail addresses: guangmingxu@126.com (Guangming Xu).