ONLINE ISSN : 1880-313X
PRINT ISSN : 0388-6107

Biomedical Research
Vol. 29 (2008) , No. 2 April pp.99-103

[PDF (480K)] [References]

Period is involved in the proliferation of human pancreatic MIA-PaCa2 cancer cells by TNF-α

Takahiro SUZUKI[1)], Fuyuki SATO[1)], Jun KONDO[1)], Yang LIU[1)], Tomomi KUSUMI[1)], Katsumi FUJIMOTO[2)], Yukio KATO[2)], Tatsusuke SATO[3)] and Hiroshi KIJIMA[1)]

1) Department of Pathology and Bioscience, Hirosaki University Graduate School of Medicine
2) Department of Dental and Medical Biochemistry, Hiroshima University Graduate School of Biomedical Sciences
3) Department of Pathologic Analysis, Division of Medical Life Sciences, Hirosaki University Graduate School of Health Sciences

(Received December 21, 2007)
(Accepted January 9, 2008)

ABSTRACT

Recent studies have found alterations to clock genes in several forms of cancer. *Period (Per)* gene plays an important role in the circadian system, the cell cycle, the induction of apoptosis, and DNA damage. However, the functions of Per in pancreatic cancer have not yet been elucidated. Here, we show that tumor necrosis factor-α (TNF-α) suppressed the expression of both Per1 and Per3 in MIA-PaCa2 cells, a human pancreatic cancer cell line. The levels of these proteins were 10% lower in the cells treated with 10 ng/mL TNF-α. Cell proliferation showed a 15%, 14%, and 16% decrease at 0.4, 2.0, and 10 ng/mL of TNF-α, respectively. In MTS-assays, MIA-PaCa2 cells transfected with siRNA against Per1 showed a 19% reduction in proliferation. However, the knockdown of Per3 did not significantly inhibit cell proliferation. The results suggest Per1 to be involved in the inhibition of the proliferation of MIA-PaCa2 cells by TNF-α.

[PDF (480K)] [References]

Download Meta of Article[Help]
RIS

doi:10.2220/biomedres.29.99

JOI JST.JSTAGE/biomedres/29.99