The role of Fas/Fas ligand system in human

1997 Fiscal Year Final Research Report Summary

The role of Fas/Fas ligand system in human

Research Project

Project/Area Number

08671571

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

Cerebral neurosurgery

Research Institution

Kanazawa University

Principal Investigator

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Project Period (FY)

1996 – 1997

Keywords

Fas ligand / apoptosis / glioblastoma / ICE / ICH-1 / CPP32

Research Abstract

Fas/APO-1 (CD95) is a cell surface receptor that mediates apoptosis when it reacts with Fas ligand (FasL) or Fas antibody. I previously reported that Fas expression in predominantly induced in perinecrotic glioma cells, suggesting that Fas induction is associated with apoptosis and necrosis formation, a histological hallmark of glioblastomas. Cysteine proteases of caspase family {interleukin-1 beta-converting enzyme (ICE)} have been implicated as components of cell death pathway and have been reported to involved in Fas, chemotherapeutic agents, and radiation-induced apoptosis. In this study, I assessed the expression lf FasL,ICE,ICE/CED-3 homologue-IL (ICH-1), and CPP32/Yama/apopain in 13 cases of primary

astrocytic brain tumors (two low grade astrocytomas, five anaplastic astrocytomas, and six glioblastomas) by reverse transcription (RT) - PCR,Western blot analysis, and immunohistochemistry. RT-PCR revealed that all astrocytic brain tumors express FasL.Immunohistochemically, FasL was predominantly expressed on the plasma membrane of glioma cells. These results suggest that FasL expression is common in human astrocytic brain tumors and may cause apoptosis of glioma cells if Fas expression is induced. The frequency of ICE,ICH-1, and CPP32 overexpression appears to correlate with the malignacy grade of astrocytic brain tumors. Furthermore, ICH-1 and CPP32 overexpression may play an important role in the pathogenesis of necrosis, which is one of the histological hallmarks of glioblastoma.

Research Products (2 results)

All Other

All Publications (2 results)

[Publications] O.Tachibana: "Overexpression of ICE,CPP32 and ICH1 during the progression of humanastrocytomas" J Neuro Oncol. 35. 43- (1997)

[Publications] O.Tachibana, M.Arai, J.Yamashita: "Overexpression of ICE,CPP32 and ICH1 during the progression of human astrocytomas" J Neuro Oncol. 35. S43 (1997)

URL: https://kaken.nii.ac.jp/report/KAKENHI-PROJECT-08671571/086715711997kenkyu_seika_hokoku_

Published: 1999-03-15