Establishment of novel cancer therapy using telomerase-specific replication competent adenovirus

2007 Fiscal Year Final Research Report Summary

Establishment of novel cancer therapy using telomerase-specific replication competent adenovirus

Research Project

Project/Area Number

17390449

Research Category

Grant-in-Aid for Scientific Research (B)

Allocation Type

Single-year Grants

Section

一般

Research Field

Obstetrics and gynecology

Research Institution

Kanazawa University

Principal Investigator

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Project Period (FY)

2005 – 2007

Keywords

Virotheranv / Replication-competent adenovirus / hTERT nromntnr

Research Abstract

We previously cloned the promoter of human reverse transcriptase (hTERT) gene, a catalytic subunit of human telomerase, which was found to be active only in cancer cells with telomerase activity, while it was silent in most normal cells without telomerase activity. We have planned to insert this promoter into the upstream of the El gene of Adenovirus type 5 genome so that adenovirus El gene is efficiently expressed only in cancer cells. Eventually, this chimera virus can replicate only in cancer cells with high levels of expression of El gene, which is required for viral replication. We named this virus TRAD: telomerase-specific replication adenovirus. In the present project, we examined the in vitro and in vivo efficacy of TARD directly injected into primary site of tumors. We found that TARD was effective to reduce tumor burden without exhibiting any severe adverse effect, such as myelosurpression or liver dysfunction caused by viral toxicity Therefore, we propose the clinical use of this virus.

Research Products (9 results)

All | 2007

All | Journal Article (6 results) (of which Peer Reviewed: 3 results) | Presentation (2 results) | Book (1 results)

[Journal Article] Concomitant activation of AKT with ERK1/2 occurs independently of PTEN or PIK3CA mutations in endometrial cancer and may be associated with favorable prognosis — 2007

[Journal Article] Activation of ERK1/2 occurs independently of KRAS or BRAF status in endometrial cancer and is associated with favorable prognosis — 2007

[Journal Article] The Telomerase Reverse Transcriptase(hTERT)Gene is a Direct Target of the Histone Methyltransferase SMYD3 — 2007

[Journal Article] Concomitant activation of AKT with ERKI/2 occurs independently of PTEN or PIK3CA mutations in endometrial cancer and may be associated with favorable prognosis — 2007

[Journal Article] Activation of ERK1/2 occurs independently of KRAS or BRAF status in endometrial cancer and is associated with favorable prognosis — 2007

[Journal Article] The Telomerase Reverse Transcriptase (hTERT) Gene is a Direct Target of the Histone Methyltransferase SMYD3 — 2007

[Presentation] Recent advances in telomerase-based medicine in gynecologic tumors. — 2007

[Presentation] Recent advances in telomerase-based medicine in gynecologic tumors — 2007

[Book] Reproductive Oncology — 2007

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