Establishment of telomerase-based novel gene therapy and diagnosis for gynecologic tumors

2002 Fiscal Year Final Research Report Summary

Establishment of telomerase-based novel gene therapy and diagnosis for gynecologic tumors

Research Project

Project/Area Number

13671702

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

Obstetrics and gynecology

Research Institution

Kanazawa University

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Project Period (FY)

2001 – 2002

Keywords

Telomerase / Gene therapy / Diagnosis / hTR / hTERT / Gynecologic tumors

Research Abstract

To examine the possibility of novel tumor markers, telomerase activity was measured by the TRAP assay using blood samples from patients with various gynecologic tumors. To purify the epithelial components in blood samples, beads-based method was used, in which blood cells were incubated with beads that were conjugated with specific anti-epithelial antigen. Approximately, 20% of patients exhibited telomerase activity in this method, all of them had advanced gynecologic tumors, such as cervical and ovarian cancers, while none of 40 normal healthy volunteers showed no telomerase activity. Interestingly, telomerase activity observed in these patients decreased after initial treatment, such as chemotherapy and radiotherapy, suggesting that it might reflect disease progression.

We also examined the possibility of telomerase-based screening method for endometrial cancers using exfoliated endometrial scarping samples. We could achieved more than 80% of sensitivity to detect endometrial cancers using TRAP assay with endometrial scarping samples. Combination of this method with classical cytologic smear test may improve sensitivity and specificity to screen endometrial cancers.

Research Products (12 results)

All | Other

All | Publications

[Publications] Kyo S, Masutomi K, Maida M, et al.: "Significance of immunological detection of hTERT : re-evaluation of expression and localization of hTERT"Am. J. Pathol.. (印刷中).

[Publications] Tanaka M, Kyo S, Kanaya T, et al.: "Evidence of monoclonal composition of human endometrial epithelial glands and mosaic pattern of clonal distribution in luminal epithelium"Am. J. Pathol.. (印刷中).

[Publications] Kyo S, Inoue M.: "Complex regulatory mechanisms of telomerase activity in normal and cancer cells : How can we apply them for cancer therapy?"Oncogene. 21. 688-697 (2002)

[Publications] Maida Y, Kyo S, Kanaya T et al.: "Is the telomerase assay useful for screening of endometrial lesions"Int. J. Cancer. 100. 714-718 (2002)

[Publications] Yatabe N, Kyo S, Kondo S. et al.: "2-5A antisense therapy directed against human telomerase RNA inhibits telomerase activity and induces apoptosis without telomere impairment in cervical cancer cells"Cancer Gene Ther.. 9. 624-630 (2002)

[Publications] Maida M, Kyo S, Kanaya T. et al.: "Direct activation of telomerase by EGF through Ets—mediated transa ctivation of TERT via MAP kinase signaling pathway"Oncogene. 21. 4071-4079 (2002)

[Publications] Kyo S, Masutomi K, Maida M, et al.: "Significance of immunological detection of hTERT : re-e valuation of expression and localization of hTERT"Am. J. Pathol.. in press. (2003)

[Publications] Tanaka M, Kyo S, Kanaya T.et al.: "Evidence of monoclonal composition of human endom etrial epithelial glands and mosaic pattern of clonal di stribution in luminal epithelium"Am. J. Pathol.. in press. (2003)

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