Experimental studies of invasive and proliferative activity of oral squamous cell carcinoma

2001 Fiscal Year Final Research Report Summary

Experimental studies of invasive and proliferative activity of oral squamous cell carcinoma

Research Project

Project/Area Number

11470432

Research Category

Grant-in-Aid for Scientific Research (B)

Allocation Type

Single-year Grants

Section

一般

Research Field

Surgical dentistry

Research Institution

Kanazawa University

Principal Investigator

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Project Period (FY)

1999 – 2001

Keywords

Oral Squamous cell carcinoma / Invasion / Metastasis / Motility factor / Adbesion molecule / Proteinase

Research Abstract

Since 1978, we have been studying the mode of cancer invasion as the important prognostic factor in patients with oral squamous cell cancer. Grade 4 of mode of invasion proposed by Jakobsson was sub classified into grades 4C (Cord-like type) and 4D (Diffuse type). The purpose of this study is to immunohistochemically and experimentally elucidate this modified grading system for the mode of invasion. Materials and methods used are human cancer materials, DMBA induced tongue cancer and in vitro and in vivo invasion model by using 3 cell lines; OCS-20 (Gr.3), OSC-19 (Gr. 4C) and HOC-313 (Gr. 4D). In immunostained human cancer materials, the higher the grade of the mode of invasion was, the less continuous the basement membrane was, and the less intercellular adhesion was. Majority of diffuse invasive cancers (Gr. 4C and 4D) co-expressed membrane type- matrix metalloproteinase and matrix metalloprotenase-2. In cell motility assay, HOC-313 showed the greatest motility (autocrine motility

factor; AMF). Cell lines cultured on 3T3 fibroblast embedded collagen gels showed similar invasion pattern to their origin. Among them, only HOC-313 showed invasion even if fibroblast was not embedded. In DMBA induced tongue cancer, the mode of invasion were observed from Gr.1 to Gr.4C. OSC-20 and OSC-19 implanted orthotopically in the tongue of nude mice grew and metastasized to lymph nodes. Their histologic appearance was similar to that of the origin. HOC-313 grew temporarily for several months by support of matrigel. In recent study, cell selected TSU (Gr.4D) produced lethal tumorgenicity in SCID mouse with similar histology to the origin. This grading system was also proven immunohistochemically and experimentally justifiable.

Research Products (10 results)

All | Other

All | Publications

[Publications] Kawashiri S., Kumagai S., Yamamoto E., et al.: "Reproduclion of occult metastasis of head and neck cancer in nude mice"Clinical & Experimental Metastasis. 17. 277-282 (1999)

[Publications] Kawashiri, S., Kojima, K., Yamamoto, E., et al.: "FEffects of chemotherapy on invasion and metastasis of oral cavity cancer in mice"Head & Neck. 23. 764-771 (2001)

[Publications] Yamamoto, E., Kawashiri, S., Tanaka, A.: "Cancer of the upper gum under long-term worn full denture"Oral Oncology, Proc. of the 7th International Congress on Oral Cancer. 7. 61-64 (2001)

[Publications] Kawashiri S, Tanaka A, Yamamoto E, et al.: "Expression of the active type gelatinase of the oral squamous cell carcinoma"Oral Oncology, Proc. of the 7th International Congress on Oral Cancer. 7. 529-532 (2001)

[Publications] Tanaka A, Kawashiri S, Yamamoto E, et al.: "Pathological relationship between basement membrane degradation and mode of invasion for oral sguamous cell carcinoma"Oral Oncology, Proc. of the 7th International Congress on Oral Cancer. 7. 571-574 (2001)

[Publications] Kawashiri, S., Kumagai, S., Kojima, K., Harada, H., Nakagawa, K., Yamamoto, E.: "Reproduction of occult metastasis of head and neck cancer in nude mice"Clinical & Experimental Metastasis. 17. 277-282 (1999)

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