

# Experimental studies of invasion and metastasis activity of oral squamous cell carcinoma

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# 2004 Fiscal Year Final Research Report Summary

## Experimental studies of invasion and metastasis activity of oral squamous cell carcinoma

Research Project

### Project/Area Number

14370666

### 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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### Co-Investigator(Kenkyū-buntansha)

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### Project Period (FY)

2002 - 2004

### Keywords

Oral squamous cell carcinoma / Invasion / Metastasis / Proliferation / Adhesion molecule / Proteinase / Motility factor

### 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 subclassified 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 tumorigenicity in SCID mouse with similar histology to the origin. This grading system was also proven immunohistochemically and experimentally justifiable.

## Research Products (5 results)

All	2004	2003	2002
All	Journal Article		

- [Journal Article] Expression of mesenchyme-specific gene HGMA2 in squamous cell carcinoma of the oral cavity **2004** ▾
- [Journal Article] Efficacy of neoadjuvant chemotherapy on metastasis of oral squamous cell carcinoma in mouse model **2003** ▾
- [Journal Article] Expression of the active type gelatinase and MMPs of oral squamous cell carcinoma. **2002** ▾
- [Journal Article] Biological characteristics of the most invasive oral squamous cell carcinoma (Grade 4D) **2002** ▾
- [Journal Article] Effects of fibroblast growth inhibitor on proliferation and metastasis of oral squamous cell carcinoma **2002** ▾

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