

# Studies of invasive and proliferative activity of oral squamous cell carcinoma

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# 1995 Fiscal Year Final Research Report Summary

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## Studies of invasive and proliferative activity of oral squamous cell carcinoma

Research Project

### Project/Area Number

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06454567

### Research Category

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Grant-in-Aid for General Scientific Research (B)

### Allocation Type

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Single-year Grants

### Research Field

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Surgical dentistry

### Research Institution

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Kanazawa University

### Principal Investigator

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### Co-Investigator(Kenkyū-buntansha)

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### Project Period (FY)

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1994 – 1995

### Keywords

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Orthotopic implantaion / Invasion and metastasis / Oral squamous cell carcinoma / Type IV collagen / Desmoglein / Proliferating cell nuclear antigen / Matrix metalloproteinase

### Research Abstract

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We devised a new model in order to establish an in vivo model for human oral carcinoma that exhibits significant local invasion and metastasis. In the present study, we examined the invasive activity of five kinds of oral squamous carcinoma cells (OSC-19, OSC-20, SS, FA and TT) by this new

model. The nude mice had tumor cells from one of five oral squamous cell carcinoma cells implanted into the tongue or the oral floor via an intra-oral route and, as a control, the subcutaneous tissue of the back. The back tumors showed a benign growth pattern, lacking significant invasion of surrounding tissues. In contrast, the tumors implanted into the tongue or the oral floor exhibited invasive growth and stromal reactions, the histological appearance of which was similar to that of the original tumors. Moreover, the regional neck lymph node and pulmonary metastases were observed in this model. Regional neck lymph node metastases were detected in 81.0% of mice implanted with OSC-19 cells. The oral tumor implanted with OSC-19 cells or TT cells showed a cords-like diffuse invasion pattern and was characterized by the absence of a continuous basement membrane and by a reduction in the intercellular adhesion of carcinoma cells. These results suggest that the invasion of oral squamous cell carcinoma may be influenced by the tumor-stromal and/or intercellular interactions.

## Research Products (15 results)

All Other

All Publications (15 results)

- [Publications] 山本悦秀、他: "口腔扁平上皮癌のin vivo浸潤・転移モデルにおける浸潤像の検討" 頭頸部腫瘍学会誌. 21. 17-22 (1995) ▼
- [Publications] Yamamoto E.et al.: "Immunohistologic distribution of basement membrane in oral squamous cell carcinoma." Head & Neck. 16. 58-63 (1994) ▼
- [Publications] Yamamoto E.et al.: "Role of preoperative chemotherapy for oral cancer from the viewpoint of mode of invasion." Asian Journal of Oral Maxillofacial Surgery. 6. 113-121 (1994) ▼
- [Publications] Yamamoto E.et al.: "Clinical and experimental studies of mode of invasion in oral cancer." Oral Oncology. 4A. 33-36 (1995) ▼
- [Publications] Yamamoto E.et al.: "Immunolocalization of desmoglein and intermediate filaments in human oral squamous cell carcinomas." Head & Neck. 17. 204-212 (1995) ▼
- [Publications] Yamamoto E.et al.: "Development of a new invasion and metastasis model of human oral squamous cell carcinomas." Oral Oncology, European Journal of Cancer. 31B. 216-221 (1995) ▼
- [Publications] Kumagai, S., Imai, K., Nakagawa, K., Yamamoto, E., Nakanishi, I., Okada, Y.: "Immunohistologic distribution of basement membrane in oral squamous cell carcinoma." Head & Neck. 16. 58-63 (1994) ▼
- [Publications] Yamamoto, E., Kohama, G., Hiratsuka, H., Kumagai, S.: "Role of preoperative chemotherapy for oral cancer from the viewpoint of mode of invasion." Asian J Oral Maxillofac Surg. 6. 113-121 (1994) ▼
- [Publications] Yamamoto, E.: "Clinical and experimental studies of mode of invasion in oral cancer." Oral Oncology, Vol.4A : Editor ; Varma, A.K.& Mori, M., Macmillan India Limited. 33-36 (1995) ▼
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- [Publications] Kawashiri, S., Kumagai, S., Kojima, K., Harada, H., Chatani, S., Yamamoto E.: "Experimental studies on the in vivo model for invasion and metastasis of oral squamous cell carcinoma. Part 1 : Establishment of orthotopic implantation model and investigation of invasive activity." Oral Oncology, Vol.4B : Editor ; Varma, A.K.& Mori, M., Macmillan India Limited. 279-282 (1995) ▼
- [Publications] Kojima, K., Kawashiri, S., Kumagai, S., Harada, H., Chatani, S., Yamamoto, E.: "Experimental studies on the in vivo model for invasion and metastasis of oral squamous cell carcinoma. Part 2 : Effect of chemotherapy against invasion and metastasis." Oral Oncology, Vol.4B : Editor ; Varma, A.K.& Mori, M., Macmillan India Limited. 283-286 (1995) ▼
- [Publications] Chatani, S., Kawashiri, S., Kumagai, S., Kojima, K., Harada, H., Nozaki, S., Yamamoto E.: "Studies on the invasive activity of DMBA induced tongue carcinoma of the hamsters." Oral Oncology, Vol.4B : Editor ; Varma, A.K.& Mori, M., Macmillan India Limited. 287-290 (1995) ▼
- [Publications] Imai, K., Kumagai, S., Nakagawa, K., Yamamoto, E., Nakanishi, I., Okada, Y.: "Immunolocalization of desmoglein and intermediate filaments in human oral squamous cell carcinomas." Head & Neck. 17. 204-212 (1995) ▼

[Publications] Kawashiri, S., kumagai, S., Kojima, K., Harada, H., Yamamoto, E.: "Development of a new invasion and metastasis model of human oral squamous cell c arcinomas." Oral Oncol, Eur J Cancer. 31B. 216-221 (1995) ▼

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