

Comprehensive study of oral squamous cell carcinoma patients using blood samples and gene expression profiles

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Oral squamous cell carcinoma (OSCC) is an aggressive malignancy which shows a variable degree of malignant behavior. To identify molecular signatures and establish a new diagnostic model for OSCC, we have identified marker genes representing a malignant phenotype of OSCC tissues. The expression of marker genes was examined by quantitative reverse transcription-PCR. Then, we created discriminatory predictor models using Fisher's linear discriminant analysis and leave-one-out cross validation. These models were applicable for the diagnoses of pre-malignant dysplasias, and of invasion status for advanced OSCCs. The clinical course of various cancers is also influenced by host immune response. On the other hand, the interaction between cancer cells and host immunity during EMT may modify systemic host immune responses. Using flow cytometric analysis of circulating T lymphocytes, we demonstrate that the percentage of CD57⁺αβTCR⁺ (CD57⁺T) cells in peripheral blood lymphocyte (PBLs) increased in accordance with the OSCC development. Furthermore, the percentage of CD4⁺CD57⁺T cells was higher in the high grade OSCCs than that in the low grade ones. This increase of the CD57⁺T cells was depending on the increased number of CD4⁺CD57⁺T cells. On the other hand, CD8⁺CD57⁺αβTCR⁺ (classically, cytotoxic T) cells also increased in accordance with tumor development, however, the number was decreased in higher grade tumors than in lower grade ones.

Our results suggest that the usage of the immunological status of OSCC patients combined with the molecular signatures of tumor tissues could provide valuable indices for diagnosis of oral malignancies.

Biography

Kondoh has completed his D.D.S.,Ph.D at the age of 30 years from Hokkaido University School of Dentistry (Sapporo Japan), and postdoctoral studies from National Cancer Institute (Frederick MD) in NIH. He is the professor of Oral Biochemistry in Asahi University School of Dentistry. He has published more than 60 papers in reputed journals, and he is serving as a councilor of Japanese Association for Oral Biology science, and as an editorial board member of The Open Dentistry journal.

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