

4<sup>th</sup> International Conference and Exhibition on  
**Pathology**

July 13-15, 2015 New Orleans, USA

**Myeloid-derived suppressor cells in oral cancer**

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Cancer is often associated with destruction in both the humoral and cellular immune responses, and this phenomenon has been suggested to be attributed by the alteration of several cell populations. A population of CD11b+Gr-1+ cells, one of the myeloid lineage cells, has been shown to be accumulated within either the tumor microenvironment or peripheral blood which collates with the impairment of immune response and the promotion of tumor growth. However, this cell type is a heterogeneous cell population that can be altered by type of the tumor and its anatomical location, and the characterization of their function during cancer has not been still fully elucidated. Here, we show that CD11b+Gr-1+ cells are increased in the spleen, bone marrow, peripheral blood and the tumor site in the murine oral squamous cell carcinoma-bearing mice, however, the phenotype and function of the cells from each origins are not consistent. CD11b+Gr-1+ cells in the tumor site, but not in the spleen, bone marrow, and peripheral blood exhibit increased expression of PD-L1 on their cell surface and strong immune suppression against *in vitro* co-cultured T cells through the expression of PD-L1, indicating that CD11b+Gr-1+ cells accumulated in tumor bearing host may not be originally immune suppressive, however, they could be phenotypically and functionally altered by the influence of tumor-derived factors and converted into immune suppressive cells. Our results suggest that targeting CD11b+Gr-1+ cells would be more efficient strategy for cancer treatment in combination with PD-L1 blocking.

**Biography**

Kei Tomihara received his PhD degree in 2006 from Sapporo Medical University, working on immunogene therapy by adenovirus vector. He then moved to Cancer Therapy and Research Center (CTRC) at The University of Texas Health Science Center at San Antonio(UTHSCSA) to work with Dr. Shin as a post-doctoral fellow. He obtained an assistant professor position in 2013 in the Department of Oral and Maxillofacial Surgery Graduate School of Medicine and Pharmaceutical Sciences for Research, University of Toyama, where he started independent research on cancer immunology.

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