Identification of CCR8 as a specific marker of tumor tissue infiltrating regulatory T cells and its possibility as a therapeutic target in Renal Cell Carcinoma

Atsunari Kawashima¹, Takayuki Kanazawa²,⁴, Tetsuya Yoshida³,⁴, Yujiro Kidani³,⁴, Michinari Hirata²,⁴, Eisuke Tomiyama¹, Yoko Koh¹, Makoto Matsushita¹, Kosuke Nakano¹, Yujiro Hayashi¹, Taigo Kato¹, Koji Hatano¹, Takeshi Ujike¹, Kazutoshi Fujita¹, Motohide Uemura¹, Morio Nagira⁴, Naganari Ohkura³, Hisashi Wada² and Norio Nonomura¹

¹) Department of Urology, 2) Department of Clinical Research in Tumor Immunology, 3) Department of Basic Research in Tumor Immunology, Graduate School of Medicine, Osaka University, Japan.
4) Drug Discovery & Disease Research Laboratory, Shionogi & Co. Ltd, Japan
Objectives

- To identify surface molecules specific to tumour tissue infiltrating regulatory T cells (TIL-Tregs) of RCC patients.
- To explore the possibility of novel cancer immunotherapy targeting TIL-Tregs by antibody therapy using xenograft model.

Results

1. Identification of **CCR8**, a specific gene to Tregs in tumour microenvironments

2. **CCR8** specifically expressed on intratumoural Tregs in 18 RCC patients

3. **Anti-mouse CCR8 antibody** showed anti-tumour effects without serious side effects
**Results**

Anti-mouse **CCR8 antibody** showed better anti-tumour effects than PD-1 and PD-L1 antibody against RCC cell lines.

**Conclusions**

- We identified **CCR8** as specific molecule to TIL-Tregs of RCC patients.
- Anti-CCR8 antibody has been promising cancer immunotherapy with fewer side effects and the higher response.

*Corresponding to Atsunari Kawashima*  
E-mail: kawashima@uro.med.osaka-u.ac.jp