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Expression profiling of *Helicobacter*-activated regulatory B cells

Sawsan Said, Güliz Tuba Barut and **Ayca Sayi Yazgan**
Istanbul Technical University, Turkey

The regulatory B and T cells have a pivotal role in balancing between immune pathogenicity and protection. Recently, it has been shown that the regulatory T cells could reduce *H. pylori*-induced gastritis in mice, at the same time allows the bacterium to colonize the mucosa at higher densities. Moreover, it was reported that IL-10$^+$B cells were activated upon *Helicobacter* infection through TLR2-MyD88 activation, which leads to differentiation of T regulatory-1 (Tr-1) cells from naïve T cells. The interaction between Tr-1 and IL10$^+$B cells may prevent the gastric precancerous lesions and serve as a good immune modulator against *Helicobacter*. Recently, RNA profile of B10 cells was investigated by RNA-seq, and differentially expressed genes in B10$^+$ and B10$^-$B cells were identified. CD9 was identified as a key surface marker for most mouse IL-10$^+$ B cells, and PD-1was differentially expressed in IL10+/IL10-B cells. In our study, we focus on understanding the expression profile of *Helicobacter* activated regulatory B cells by microarray analysis, Agilent SurePrint G3 Gene Expression Microarrays of mouse (v2) 8x60K models. Furthermore, gene expression profiling of IL-10 producing regulatory B cells would provide detailed information of B cell genes, including immune function of specific genes. Next, we aim to investigate the expression levels of the recently described genes that are expressed in B 10 cells; CD9, and PDCD1(PD1) in our samples, unstimulated B cells, *H. felis* stimulated B cells, stimulated IL-10+ B cells and IL-10- B cells. Based on our microarray and real-time PCR data, we wanted to investigate the immune functions of PD1+ regulatory B cells on T cell differentiation to regulatory Tr-1 cells. The PD1 functional study directed the PD1/PD-L 1 interaction blockade as tool to understand the role of PD-1 upregulated B cells in induction (Tr1) upon PD1-PD-L 1 interaction.

Biography

Sawsan Said is a PhD candidate in the Department of Molecular Biology and Genetics at the Istanbul Technical University, Istanbul, Turkey. She has been working on a subset of B cells, namely regulatory B cells in the Lab of Dr. Ayca Sayi Yazgan.

sawsansaid@gmail.com

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