014 Differentiation between control subjects and patients with chronic spontaneous urticaria based on the ability of anti-IgE autoantibodies to induce FcεRI crosslinking, as compared with anti-IgG antibodies
S Izaki1, S Toyoshiba1, T Endo1, K Hayama1, Y Okayama2 and T Terui2 1 Department of Dermatology, Nihon University School of Medicine, Itabashi-ku, Japan and 2 Allergy and Immunology Research Project Team, Nihon University School of Medicine, Itabashi-ku, Japan

Chronic spontaneous urticaria (CSU) is defined as the occurrence of systemic daily wheals for at least 6 weeks. Since the presence of IgG autoantibodies (Abs) to FcεRIα-chain (FcεRIα) and IgE has been repeatedly observed in patients with CSU, autoimmunity is thought to be one of the major causes of CSU. The reported prevalences of IgG autoantibodies to FcεRIα and IgE in sera from patients with CSU have varied, and these Abs are also often observed in healthy control subjects. Thus, we sought to determine the prevalence and FCεRIα crosslinking ability of these Abs in a large number of patients with CSU and nonatopic control (NC) subjects. Our experiments were designed to compare the concentrations of anti-IgE and anti-FcεRIα Abs and the abilities of these Abs to cause FcεRI aggregation in patients with CSU (n = 134) and NC (n = 55) using ELISA and an in vitro elicitation test, respectively. Our study demonstrated that the concentration of anti-IgE Abs was significantly different between the NC subjects and the CSU patients (P < 0.0001, cutoff value: 0.558 µg/mL), whereas the concentration of anti-FcεRIα Abs was not. A significant difference in the duration of illness was noted between patients with lower and those with higher concentrations of anti-IgE Abs relative to the cutoff value. The ability of anti-IgE Abs, but not anti-FcεRIα Abs, to induce FcεRIα crosslinking was significantly higher in CSU patients than in NC subjects (P = 0.0106). In the Japanese population of CSU patients studied, the ability of the anti-IgE Abs to induce FcεRIα crosslinking differed significantly between NC subjects and CSU patients, suggesting the involvement of anti-IgE Abs in the pathogenesis of CSU in the Japanese population.

016 Phenotypic Changes of a Monocyte Cell Line depend on the Culture Temperature
J Hono, Shiedisi Global Innovation Center, Yokohama, Japan

Monocytes are a representative cell of innate immunity and have been known to change their phenotype according to culture conditions. Temperature is one of the important factors that influence the immune responses of monocytes. The aim of this study was to investigate the phenotypic changes of a human monocyte cell line (THP-1) induced by different temperatures. THP-1 cells were cultured under 37°C and 25°C for 48 hours and then analyzed by flow cytometry. The results showed that 25°C culture induced the expression of CD14 and CD16, which are markers of monocyte activation, whereas 37°C culture did not change these marker expressions. These findings indicate that temperature can influence the phenotypic changes of monocytes and that 25°C culture may be a more suitable condition for analyzing the phenotype of monocytes.

017 Evolution of autoreactive B and T cells in pemphigus patients with Rituximab or corticosteroid regime treatment
M Malho-Valliant, C Péralès, M Golinski, V Hébert, G Riou, O Boyer, M Vgue, S Calbo, N Faizleau and P Joly 1 Department of Dermatology, Rouen University Hospital, Rouen, France, 2 Unit 1234, INSERM, Rouen, France, 3 Normandy INRA, INRAE, Rouen, France, 4 CNRS, CNRS, Toulouse, France and 6 Department of Dermatology, University Hospital Center of Reims, Reims, France

Pemphigus is an autoimmune blistering disease mediated by autoantibodies (Abs) directed against desmogleins (Dsg). We recently showed that first line treatment with Rituximab (RTX) was more effective than standard oral corticosteroid (CS). To understand the immunological mechanisms that mediate the long-lasting clinical remission (CR) after RTX treatment, we analyzed the phenotypes and antigen specificities of Dsg+ autoreactive B and T cells (TFH) by flow cytometry and the number of Dsg+ IgG Abs SeCreting Cell (ASC) by ELISPOT. At Baseline, Dsg+ B cells were detected at a frequency of 0.1-0.6% of total B cells and were enriched in IgG switched memory B cells. Dsg+ IgG Abs were detected at a frequency of 0.0-0.8% of total ASC for Dsg1 and 0.1-1.2% for Dsg2. The CS treatment did not influence the frequency nor the phenotype of Dsg+ B cells and Dsg+ ASC, which were detected even in patients in CR. In contrast, RTX induced a significant decrease of IgG Switched Dsg+ memory B cells. Accordingly, Dsg+ ASC were no longer detected in patients in CR at M6. Interestingly, Dsg1-specific TFH cells were detected in patients after treatment, with an increased proportion of activated TFH/Tfh17 cell subsets. Strikingly, the frequency of autoreactive Dsg1 TFH cells was strongly decreased by RTX treatment. These findings indicate that the response to RTX in pemphigus involves two mechanisms: i) a sustained depletion of IgG Switched memory autoreactive B cells leading to the disappearance of Dsg1+ TFH, and ii) the decrease of Dsg1-specific circulating TFH cells, which is likely involved in the blockage of B cell maturation and the delayed reappearance of Dsg1+ memory B cells.