**Abstracts | Adaptive Immunity and Autoimmunity**

**043** Persistent deficiency of mucosal associated invariant T cells in dermatomyositis

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Mucosal associated invariant T (MAIT) cells are innate like lymphocytes found in peripheral blood and mucosa; they are decreased during systemic lupus erythematosus and other auto-immune diseases. However, MAIT cell levels and functions have not previously been investigated in dermatomyositis (DM). Herein, we studied MAIT cells level and activation status before and after treatment during DM (n=21) and compared them to healthy controls (n=19), psoriasis (n=7) and atopnic dermatitis (n=5). We showed that DM was associated with a dramatic reduced number of circulating MAIT cells median 0.12% [0.07-0.25%] versus 2.13% [0.5-3.94%], p < 0.0001. This disappearance was specific to DM. Residual MAIT cells displayed an activated/exhausted phenotype with higher expression of CD25, CD39, CTLA-4 and increase of the TEMA state. We found an inverse correlation between CD25 and CD39 expression on MAIT cells and the level of circulating MAIT cells. After a median follow up of 0.9 year, we observed a slight increase of MAIT cells (median: 0.25% [0.24-

**044** A unique mechanism of epithelial detachment in mucous membrane pemphigoid caused by autoantibodies against the C-terminal of COL17

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**045** Role of effector and regulatory B cells in patients with systemic sclerosis: IL-6 producing effector B cells associated with skin fibrosis

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Systemic sclerosis (SSc) is an autoimmune disease characterized by skin and lung fibrosis. Over 90% of the patients with SSc are positive for autoantibodies. In addition, the serum levels of BAF, a potent B cell stimulator, are correlated with SSc severity and activity. Thus, B cells play an important role in SSc pathogenesis. However, two opposing B cell subsets exist: effector and regulatory B cells. IL-6 producing effector B cells promote scleroderma mouse model, whereas IL-6 producing regulatory B cells inhibit it. In the present study, we have investigated the clinical association of effector and regulatory B cells in patients with SSc. The blood levels of IL-6 producing effector B cells and IL-10 producing regulatory B cells were measured by detecting SSc and IL-6 positive B cells. The frequency of IL-6 producing effector B cells in blood was significantly elevated in patients with SSc (55.3 ± 12.1%) than that in healthy controls (41.9 ± 10.6%, P<0.001). In contrast, the frequency of IL-10 producing regulatory B cells in blood was significantly decreased in patients with SSc (41.4 ± 0.7%) than in healthy controls (2.0 ± 0.8%, P<0.001). With respect to SSc subtypes, the frequency of IL-6 producing effector B cells was significantly higher in patients with diffuse cutaneous SSc (severe form of SSc) than in patients with limited cutaneous SSc (mild form of SSc). Furthermore, the frequency of IL-6 producing effector B cells positively correlated with the extent of skin fibrosis in SSc patients. The result suggested that the dysregulation of effector and regulatory B cell balance contributes to SSc pathogenesis.

**046** Vitamin D3 promotes human Th2 responses by TSLP-dependent and -independent regulation of dendritic cells

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Vitamin D3 (1,25(OH)2D3) is a key regulator in T helper type 2 (Th2) immunity and is essential for the development of Th2 cells. However, the role of vitamin D3 in the regulation of Th2 responses in human skin is not yet fully understood. We therefore investigated the effects of vitamin D3 on Th2 cell development and function in vitro and in human skin.

**047** Pemphigus autoantibodies to desmocollin 3 exclusively recognize calcium-dependent epitope in extracellular domain 2

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Pemphigus autoantibodies to desmocollin 3 exclusively recognize calcium-dependent epitope at N-terminus, we further checked reactivity to calcium-dependent novel enzyme-linked immunosorbent assay (ELISA). Thirty-four pemphigus sera were positive six recombinant proteins with Dsg2 as backbone and by replacing the prosequence and five of anti-Dsc3 antibodies, we generated novel Dsc3/Dsg2 domain-swapped recombinant Dsc3 antibodies in patients with pemphigus have not been elucidated yet. To analyze epitope activation induced cell death rather than their migration in affected tissue.

**048** Effects on CD3, Treg and TH17 cell numbers in skin biopsies after 16-week mirikizumab treatment, evaluated by an epigenetic assay

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Mirkizumab (Mini) is a humanized monoclonal antibody against the p19 subunit of inter-leukin (IL)-21, in patients (pts) with moderate-to-severe plaque psoriasis. Past studies showed increased number of CD3 producing cells remaining in skin after treatment, potentially contributing to flares; though, psoriasis is clinically resolved at the biopsied sites. To determine the cellular skin milieu of pts in the current study, we evaluated relationships between mini exposure, efficacy and skin biomarkers. Ps (≤5/10) with chronic plaque psoriasis (BSA≥10%, PStAI≥3, SPGA≥3) were received mini 300 mg every 4 weeks for 16 weeks. Lesional skin biopsies from each group were assessed at baseline and Week 16 for infiltrating CD3, Treg and Th17 cells via Epiontis™ assay, which identifies cell-type specific epigenetic changes on the DNA. Post-hoc analyses of fold-change over baseline and correlation coefficient between cell-type frequency and Week 16 PASI changes were conducted. Frequencies of CD3, Treg and Th17 cells at baseline were similar to previously reported values as measured by other approaches and did not correlate with PASI changes. The current study is the first to evaluate changes in skin DCs, Treg and Th17 cell numbers as a function of anti-psoriasis treatments. Future studies could outline the DC pro-inflammatory compartment as a potential therapeutic target.