splenocytes (effector) were incubated with K-562 (target) in a ratio of 100:1 for 4 hour once a week until the end of the experiment.

Conclusions The splenocytes from KRG treated porcine showed a significantly increased cytotoxicity in time dependent fashion. Whereas, splenocytes from untreated porcine showed less toxicity. Taken together, KRG has the potential to modulate immune function and should be further investigated as an immunomodulatory agent.

Background and aims Natural killer (NK) cells are specialised lymphocytes capable of counteracting pathogens (bacteria, viruses) as well as cancer cells. Unlike T lymphocytes, NK cells do not require antigen-specific recognition to act on target cells. The activation of NK cell requires the action of certain pro-inflammatory cytokines (IL-2, IL-12, IL-18, IL-21).

Methods Gastric cancer cells (SNU-484) were grown in RPMI medium with 10% heat inactivated FBS at a seeding density 1*10^6 cells/mL for 3 days, supernatant was concentrated 10 fold. Splenocytes were treated with 1% (v/v) SNU-484 supernatant for various periods of time.

Results Flow cytometry (FCM) results suggests that the treatment do not affect the viability of the cells during the study period, further the intracellular levels of NKP30, NKP44, granzyme B, perforin were assessed using Real time-PCR (RT-PCR) and western blot techniques. RT-PCR revealed that NK cell markers were initially down-regulated during 2 days of incubation and increased several folds higher during 5th day when compared to normal control. However, no significant changes were observed in protein expression. SNU-484 cells supernatant treated splenocytes were further analysed for cytolytic activity against K562 cell line as a target with varying (1:6, 1:12, 1:25 and 1:50) target to effector ratio for a period of 24 hour.

Conclusions The results suggest that the treated splenocytes have significantly increased cytolytic activity (49.4%) at the lower effector to target ratio (1:25) when compared to untreated control splenocytes (38.2%). Our results indicate that gastric cancer cell micro-environment can modulate the NK cells efficacy to act against cancer.

Background and aims The aim of this study was to investigate the proportion of regulatory T cells (Tregs) in the peripheral blood mononuclear cells (PBMCs) of patients with systemic lupus erythematosus (SLE) compared with that of healthy controls (HCs). We also evaluated the differentiation difference of induced Tregs in vitro under the presence or absence of endoplasmic reticulum (ER) stress, which is one of the causal factors triggering lupus flares.

Methods We isolated the PBMCs of 16 SLE patients and 11 HCs. The percentage of CD4^+CD25^+FoxP3^+ Tregs was
analyzed using flow cytometry. The PBMCs were incubated with anti-CD3/CD28 beads, supplemented with transforming growth factor-β and interleukin-2 to induce differentiation of Tregs, with or without tunicamycin for 36 hours.

**Results** The percentage of Tregs in the PBMCs of SLE patients was lower than that in the HCs (1.8 ± 0.9 versus 2.6 ± 0.7%, p=0.02). The induced differentiation of Tregs increased in both groups, and the increased proportion was greater in the SLE group (600 ± 351 versus 252 ± 95%, p=0.01). Incubation with tunicamycin in the Treg differentiation process also increased the proportion of Tregs in both groups (385 ± 259 versus 166 ± 105%, p=0.006), and the increased proportion was higher in the SLE group.

**Conclusions** The baseline percentage of Tregs was lower in SLE patients than in HCs. However, when Treg differentiation was induced, the differentiation of Tregs was more pronounced in the SLE group. This exaggerated differentiation may reflect the paradoxical response to the diminished suppressive capacity of Tregs in SLE patients.

**Background and aims** A hallmark of systemic lupus erythematosus is high titers of circulating autoantibodies. Recently a novel CD11c+ B cell subset has been identified in aged patients and healthy controls.

**Methods** We developed and validated cGVHD model by spleens during the development of lupus induced by cGVHD. The accumulation of high titers of autoantibodies and immunopathology that closely resemble SLE. The aim of this study was to figure out the role of CD11c+ B cell in the production of autoantibodies transfer of Bm12 mice into B6 mice and identified CD11c+ B cell by flow cytometry and examined anti-chromatin autoantibodies production in the development of lupus induced by cGVHD.

**Results** CD11c+ T-bet+ B cell was significantly increased in the development of lupus induced by cGVHD. CD138 +CD11c+ B cell produced large amounts of anti-chromatin IgG2a upon in vitro stimulation. Depletion of CD11c+ B cells significantly ameliorated anti-chromatin IgG2a production in vivo. T-bet deficiency impaired the expression of CD11c in B cells and anti-chromatin autoantibodies production in the process of cGVHD. The accumulation of T-bet+CD11c+ B cell was found in lupus patients.

**Conclusions** Our data demonstrated the aberrant activation and differentiation of CD11c+T-bet+ B cell, which produced large amounts of anti-chromatin IgG2a in lupus murine model and patients.