neutrophil elastase (NE), proteinase 3 (PR3), and cathepsin G (CG) and myeloperoxidase (MPO) expression by qRT-PCR. NE+/PR3+/CG+ triple knockout mice and in vitro depletion of neutrophils approaches were performed to determine the role of NSPs and neutrophils in estrogen-mediated inflammatory responses. The splenic neutrophil and NSPs expression in lupus-prone MRL-lpr, B6-lpr and NZB/W F1 and their respective controls were also analysed.

Results Although oestrogen reduced total spleenocytes number, it markedly increased the splenic neutrophil numbers, NSPs and MPO expression in B6 mice (Figure 1). Splenic neutrophils, NSPs and MPO were also significantly increased in MRL-lpr, B6-lpr and NZB/W F1 mice (Figure 2). Despite of the critical role of NSPs and neutrophils in inflammation, depletion of NSPs in vitro did neither affect oestrogen’s ability to increase in splenic neutrophils nor the induction of inflammatory mediators from ex vivo activated splenocytes, and depletion of splenic neutrophils in vitro had also no obvious effect on NSPs expression (due to the increase of NSPs in cells other than neutrophils) and LPS-induced IFNγ and MCP-1 (Figure 3).

Conclusions Overall, we demonstrated a remarkable commonality with regards to the increase of neutrophils and NSPs in the spleens of autoimmune-prone mice and estrogen-treated B6 mice.

**Abstracts**

**113 EFFECT OF MICROPARTICLES DERIVED FROM PATIENTS WITH LUPUS ERYTHEMATOUS SYMPTOMATIC (SLE) ON MODULATION OF MICRONRNAS 146A AND 126 IN A MONOCYTE CELL LINE**

G Vasquez, 1LM Camarona-Perez, 2CH Muñoz-Vahos, 2AV Vanegas-García, 1M Rojas, 1Universidad de Antioquia, Grupo de Inmunología Celular e Inmunogenética GICIG. Instituto de Investigaciones Médicas- Facultad de Medicina-, Medellín, Colombia; 2Hospital Universitario San Vicente Fundación, Sección Reumatología, Medellín, Colombia

**Background and aims** Important miRNAs are involved in the modulation of immune function and can be found in the intra- and extracellular environments, in circulation attached to RNA-binding molecules or packed in form of microparticles (MP). Given this, MP could have an important role in intercellular communication, modulation and expression of miRNAs in their target cells.

To establish whether MP of SLE patients can modulate the expression of miRNAs (miRNA 126, miRNA 146a) and their target molecule (interferon response factor 5, IRF5) in the monocyte cell line U937.

**Methods** MP obtained from serum of SLE and other autoimmune diseases (OAD) patients, and healthy controls were used as stimulus in the cell line U937 to evaluate their effect over: 1) The expression of membrane markers through flow cytometry, 2) content of miRNAs 126 and 146a through PCR and 3) expression of their target molecule, IRF5 by Western Blot.

**Results** We observed, a decrease in HLA-DR, CD18, CD119 and an increase of IL-6 in U937 stimulated with MP from healthy controls, patients with active and inactive SLE, as well as patients with OAD. Additionally, a positive effect over the expression of miR126 and a negative effect over the expression of miR146a were observed. IRF5 as a target of miRNA146, did not change after MP treatment independent of MP origin.

**Conclusions** Our results suggested that MPs may have a regulatory effects, inducing a decreased expression of membrane molecules and miRNAs-146 levels, without effect in IRF5. In addition, MPs increased levels of cytokines and miRNA-126, latter is related with the demethylation.

**114 N-ACETYL-L-CYSTEINE (NAC) CONTROLS OSTEOCLASTOGENESIS THROUGH REGULATING TH17 DIFFERENTIATION AND RANKL PRODUCTION IN RHEUMATOID ARTHRITIS**

HR Kim*, 2BJ Kim, *KA Lee, 2SH Lee, 1KW Kim, 1Konkuk University Hospital, Rheumatology, Seoul, Republic of Korea; 2Seoul St. Mary’s Hospital- College of Medicine- The Catholic University, Convergent Research Consortium for Immunologic disease, Seoul, Republic of Korea

**Background and aims** This study aimed to determine the regulatory role of N-Acetyl-l-cysteine (NAC), an antioxidant, in IL-17-induced osteoclast differentiation in rheumatoid arthritis (RA).

**Methods** After RA synovial fibroblasts were stimulated by IL-17, the expression and production of RANKL was determined by real-time PCR and ELISA. Human peripheral blood monocytes were cultured with M-CSF, IL-17, RANKL, and/or various concentrations of NAC, followed by counting of the cells for tartrate-resistant acid phosphatase activity to determine osteoclast formation. Osteoclastogenesis was also determined after cocultures of IL-17-stimulated RA synovial fibroblasts, Th17 cells and various concentrations of NAC with monocytes. After human peripheral CD4+ T cells were cultured with NAC under Th17 condition, IL-17, IFN-g, IL-4, Foxp3, RANKL and IL-2 expression and production was determined by flow cytometry or ELISA.

**Results** When RA synovial fibroblasts were stimulated by IL-17, IL-17 stimulated the production of RANKL, and NAC reduced the IL-17-induced RANKL production in a dose-dependent manner. NAC decreased IL-17-activated phosphorylation of mTOR, JNK and IkB. When human peripheral blood CD4+ monocytes were cultured with M-CSF and IL-17 or RANKL, osteoclasts were differentiated, and NAC reduced the osteoclastogenesis. After human peripheral CD4+ T cells were co-cultured with IL-17-pretreated RA synovial fibroblasts or Th17 cells, NAC reduced their osteoclastogenesis. Under Th17 polarising condition, NAC decreased Th17 cell differentiation and IL-17 and RANKL production.

**Conclusions** NAC inhibits the IL-17-induced RANKL production in RA synovial fibroblasts and IL-17-induced osteoclast differentiation. NAC also reduced Th17 polarisation. NAC could be a supplementary therapeutic option for inflammatory and bony destructive processes in RA.

**115 QUANTITATIVE AND FUNCTIONAL EVALUATION OF PLASMA MICROPARTICLES IN SYSTEMIC LUPUS ERYTHEMATOSUS**

1AP Lateef*, 1L Shafiei, 2GK Gill, 3P Cheung, 4YC Lim. 1National University Hospital, Medicine, Singapore, Singapore; 2Yang Loo Lin School of Medicine- National University of Singapore, Medicine, Singapore, Singapore; 3National University of Singapore, Physiology, Singapore, Singapore; 4National University of Singapore, Pathology, Singapore, Singapore

**Background and aims** The study aimed to investigate whether plasma microparticles (MP) are different in systemic lupus erythematosus (SLE) patients compared to healthy controls, and if these differences are associated with disease activity.

**Methods** Blood samples were collected from healthy controls (n=20) and SLE patients (n=20). Plasma MP were isolated using ultracentrifugation and evaluated by flow cytometry and Western blotting for membrane-bound CD40, CD80, and CD83. The expression of the pro-inflammatory cytokine TNFα and the anti-inflammatory cytokine IL-10 were measured by ELISA.

**Results** Plasma MP from SLE patients were increased compared to healthy controls. The expression of CD40, CD80, and CD83 was also increased in MP from SLE patients. The expression of TNFα was increased in MP from SLE patients, while IL-10 was decreased.

**Conclusions** Plasma MP are increased in SLE patients compared to healthy controls. The increased expression of CD40, CD80, and CD83 in MP from SLE patients may contribute to the pro-inflammatory state in SLE. The increased expression of TNFα and decreased expression of IL-10 in MP from SLE patients suggest a shift towards a pro-inflammatory response in SLE.