LP-084 SINGLE CELL GENOMICS OF SELF-REACTIVE B CELLS IN SYSTEMIC LUPUS ERYTHEMATOSUS

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Background Advances in single cell genomics have illuminated aberrant cells with striking transcriptional differences in patients with systemic lupus erythematosus compared to healthy individuals. However, it is not clear whether the aberrant cells are directly responsible for pathology or bystanders that have become aberrant in response to an inflammatory environment. This is an important distinction because safer and more effective treatments rely on identifying and eliminating pathogenic cells. The goal of this study was to molecularly characterise the cells that produce pathogenic autoantibodies and determine how they differ to their normal counterparts.

Methods A multi-omics approach was employed to identify pathogenic autoreactive B-cells, which linked mass spectrometry sequencing of serum autoantibody with massively parallel sequencing of immunoglobulin expressed by circulating B-cells. Single cell sequencing was performed to compare gene expression and mutation in pathogenic and normal B-cells.

Results Rare circulating B-cells making pathogenic autoantibodies were found to comprise clonal trees accumulating mutations in immunoglobulin regions. The pathogenic cells had a distinct gene expression profile similar to that previously observed in CD21-low atypical memory B-cells.

Conclusions The detailed analysis of pathogenic B-cells reveals insights into disease pathology and therapeutic targets for precision medicine approaches.

LP-085 INVESTIGATING THE THERAPEUTIC POTENTIAL OF ACHATINA FULICA SNAIL MUCUS ON PRISTANE-INDUCED LUPUS NEPHRITIS IN MICE

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Background Administration of cytotoxic and immunosuppressive agents are well established treatment of systemic lupus erythematosus. However, the usage of these drugs shows frequent side effects. Therefore, finding new treatment option are necessary. Mucus secretion from snail (Achatina Fulica) contain glycosaminoglycans including heparan and acharan sulfate, which known to accelerate the inflammatory process and replace the damaged glomerular filtration membrane in renal interstitial fibrosis. This study aimed to determine the effect of snail mucus on levels of heparan sulfate in mice model of lupus nephritis.

Methods Experimental study uses posttest-only group design. The control group was male Balb/C mice injected with 0.5 cc NaCl 0.9% I.P, while mice model of nephritis lupus injected with 0.5 cc Pristane I.P. Nephritis lupus mice grouped into group I (received oral methylprednisolone 0.5mg/kgBW/day), group II (received oral 0.5 cc snail mucus/day) and group III (combination of standard therapy and snail mucus). The treatment administered for 4 weeks. Detection of heparan sulfate on blood serum taken 4 months after therapy. Statistical analysis used anova test and post hoc test.

Results There was an increase in heparan sulfate levels in the snail mucus group (12.13 +1.27 mg/dL; p = 0.277), and the methylprednisolone group (11.79 +0.97 mg/dL; p = 0.230) compared to the lupus group (11.27+1.20 mg/dL). The snail mucus group also showed higher level of heparan sulfate compared to control group, although not statistically significant (p = 0.257).

Conclusions Achatina fulica mucus may increase heparan sulfate level in mice model of lupus nephritis.

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LP-086 DEXAMETHASONE-INCORPORATED IMMUNOMODULATORY PDMAEMA-PLGA NANOPARTICLES POTENTIALLY INDUCED TOLEROGENIC DENDRITIC CELLS AND AMELIORATED LUPUS DISEASE BY MEDIATING ANTIGEN-SPECIFIC IMMUNE TOLERANCE

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Background Recent advances in the treatment of systemic lupus erythematosus (SLE) have focused on inducing specific immune tolerance to avoid complications from the long-term use of immunosuppressive drugs. Dendritic cells (DCs) are the most potent antigen-presenting cells that have multifaceted functions in the control of immune activation and immune tolerance. Since altered tolerogenicity of DCs contributes to the development and pathogenesis of SLE, DC-targeted therapies aimed at inducing self-tolerance have become of great importance for the treatment of SLE and autoimmune